Treatment of the Extraarticular Knee Arthrofibrosis after Femoral Diaphyseal Fracture

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Abstracts

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ABDOMINAL TRAUMA

1 Role of Arterial Bleeding Control in the Treatment of Major Hepatic Trauma

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Introduction: Conservative management is possible for major hepatic trauma, but early detection of patients that require surgery is mandatory, because delayed operations carry out significant morbidity and mortality. We argue that arterial bleeding is unlikely to stop spontaneously, so all these patients need to be treated early by angiographic embolization or arterial vessels ligature.
Methods: 161 liver trauma were evaluated from January 1993 to November 2008 (mean age 38 years, range 16–85). 110 patients (68%) underwent surgery for hemodynamic instability or associated lesions (55%). Morbidity and mortality were 20 and 16%. 77 patients underwent conservative treatment but 26 (34%) required operation with 30% mortality in major trauma. In last years our policy include early arterial embolization in case of extravasations of contrast medium on CT (n = 6), or arterial branch ligature in case of emergency operation (n = 6).
Results: In 6 cases treated by arterial embolization and in 6 cases of ligation of the right hepatic artery the hemorrage was easily controlled without related morbidity. In the last two cases ligation was performed before liver mobilization and assisted by a light packing that was removed at the end of operation.
Conclusions: Treatment of hepatic trauma cannot be only based on grading or hemodynamic stability, but on prompt CT detection of arterial bleeding, that require early angiographic embolization in stable patients, independently from trauma grade. This policy increase the success rate of nonoperative management. During operation, ligation of a branch of hepatic artery play an important role. Early treatment is mandatory before hypotermia–acidosis–coagulopathy syndrome develops.
Author to editor: In this paper we report our strategy to improve the success rate of nonoperative management of Major Hepatic Trauma, improving results of actually accepted guidelines, based on hemodynamic stability of patients and grading of liver trauma.

2 The Traumatic Splenic Injuries

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Introduction and aims: Although spleen is well protected by thoracic cage, currently, it is one of the organs that is most commonly injured due to the increased numbers of trauma cases. Surgical removal of spleen, which has very important immunological functions, causes fatal infections. Therefore, as long as the patient is hemodynamically stabile, nonsurgical follow-up or conservative surgery constitute the most commonly accepted approach to the splenic traumas. We aimed to analyze splenic injuries retrospectively.
Materials and methods: 61 cases of splenic injuries are included in this study. 41 cases were male (67.2%). 53 cases were injured by a blunt trauma (88.6%).
Results: The number of solely splenic injury was 31 (50.8%). In 17 cases a thoracic injury also accompanied while in others head trauma and orthopedic traumas were encountered. 4 cases treated by splenorrhaphy, and 57 cases were treated by splenectomy. Preoperative mortality rate was 4.9% (3 patients). 7 cases experienced complications.
Conclusions:

1. The number of cases with traumatic injuries admitting to our hospital is low due to the location of our hospital.
2. 57 of splenic injuries resulted from blunt trauma.
3. All cases that were graded as grade 3 and grade 4 were treated unwillingly by splenectomy because in our hospital there are three different surgical wards which share night shifts and in this circumstances it is not possible to follow up patients for the required time period which, for spleen conservative treatment, usually exceeds 24 h.

3 The Traumatic Hepatopancreaticoduodenal Injuries

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Introduction and aims: Although liver is well protected by the thoracic cage, it is a frequently injured organ especially by penetrating traumas and also rarely by blunt traumas. Retroperitoneally located pancreas and duodenum injury with or without liver injury occur rarely but they are seriously life threatening injuries. For these reasons we aimed to investigate the traumatic liver, duodenum and pancreas injuries as a whole.
Materials and methods: 55 cases of blunt and penetrating traumas occured in our district are included in this study. In these patients parameters of sex, age, etiology, admission time, stability and physical status on admission, concurrent organ injury, operation type, gradings of injuries, were investigated.
Results: 51cases (92,7%) suffered from liver injury, while 4 cases (7,3%) suffered from hepaticopancreaticoduodenal injury. 31 cases (56%) were caused by penetrating injuries. 31 cases of liver injury group had isolated liver injury whereas 15 cases of the group has additional thoracic injury, 3 cases had great vessel injury, 1 case had orthopedic injury and lastly 1 case had head injury in addition to the liver injury. In the combined hepatic injury group mortality rate was 7,3%.
Conclusions

1. In hepatoduodenopancreatic injury group blunt and penetrating injury rates are equal.
2. Duodenum–pancreas injuries occur rarely. Liver,with injury rates of 51 cases in this study, is the most frequently injured organ.
3. Mortality rate is higher in the subgroups of patients who admitted to hospital late, and who had concurrent thoracic, orthopedic, and head trauma.

4 Management of Pancreatic Trauma: a 10-year Experience

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Introduction and objectives: Pancreatic injury secondary to trauma is uncommon but carries significant morbidity and mortality. We aimed to present our 10 years experience of blunt and penetrating pancreatic injuries.
Methods: Medical records of patients with blunt or penetrating pancreatic trauma admitted to Istanbul University, Istanbul Faculty of Medicine, Trauma and Emergency Surgery Department in the period 1998–2008 were, retrospectively, analyzed. The age, gender, trauma mechanism, hospital stay, treatment, associated organ injury, morbidity, mortality of patients were evaluated.
Results: Pancreatic injury was on 25 patients, 20 of them were penetrating trauma and 5 of them were blunt trauma. The mean age was 30.8 ± 2.3. All of the penetrating trauma and 40% of blunt trauma underwent surgery. It was noticed associated organ injuries in 100% of penetrating trauma and 20% of blunt trauma. Mean hospital stay was 14.8 ± 12.8 days. The overall morbidity rate was 52% (n = 13). Most common morbidities were pancreatic fistulas, pleural effusion and intraabdominal abscess. The mortality rate was 28% (n = 7). The median follow-up was 52.3 ± 16.7 months. At the last reassessment during follow-up, all patients were clinically well. No patients had symptoms of endocrine or exocrine insufficiency.
Conclusions: Pancreatic trauma and, further, pancreatic surgery for pancreatic trauma are relatively infrequent. It was recorded that mortality and morbidity were related in great part to the associated organ injury.

5 Management of Blunt Bowel and Mesenteric Injuries: Experience at the Alfred Hospital

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Background: The incidence of blunt bowel and mesenteric injury (BBMI) has increased recently in blunt abdominal trauma and this is possibly due to an increasing number of high speed motor accidents and the use of seat belts.
Objective: In this study we sought to identify the factors determining the time of surgical intervention and how they affect the outcome of the patient with BBMI. This was achieved by reviewing our experience as a Major Victorian Trauma Service in the management of bowel and mesenteric injuries and how this compares to current literature.
Methods: A retrospective study reviewing 278 consecutive patients who presented to the Alfred trauma centre with blunt bowel and mesenteric injuries over 6 years.
Results: Of the 278 patients with BBMI 66% were male, 34% were female. 80% of the patients underwent a laparotomy, 17% of patients were treated conservatively and 3% were diagnosed post-mortem. The times from admission to laparotomy were: 0–4 h 67%, 4–8 h 9%, 8–12 h 3%, 12–24 h 10%, 24–48 h 4%, more than 48 h 7%, respectively. FAST (focused abdominal sonography for trauma) was done in 86 and 51% of this group had a positive FAST. While 44% of patients had a negative FAST and 4% of patients had an equivocal FAST. 13% overall group did not have a FAST. Computerised tomography (CT) scans were undertaken preoperatively in 68% of the patients and showed: free gas (22%), bowel wall thickening (31%), fat and mesenteric stranding or Hematoma (38%) and free fluid with no solid organ injury (43%).
Conclusion: The timing of surgical intervention is mostly determined by the clinical examination and the helical CT scan findings in BBMI. FAST lacks in sensitivity and specificity in identifying bowel and mesenteric trauma. Delayed diagnosis of more than 48 h has significantly higher bowel related morbidity but not mortality.

6 Predictors for the Selection of Patients for Abdominal CT After Blunt Trauma: a Proposal for a Diagnostic Algorithm

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Introduction: Abdominal CT accurately detects injuries of the abdomen, pelvis and lumbar spine, but has important disadvantages. This study was performed to select parameters that can predict which patients should receive abdominal CT after blunt trauma and which not.
Methods: A prospective observational study was performed on consecutive adult high-energy blunt trauma patients. All patients received evaluation according to the ATLS, sonography (FAST), conventional radiography (CR) of the chest, pelvis and spine and routine abdominal CT. Independent predictors for the presence of ≥1 injuries on abdominal CT were determined using multivariate logistic regression analysis.
Results: 1040 patients were prospectively included, 309 had injuries on abdominal CT. Nine parameters were found to be independent predictors for injuries on CT: abnormal pelvic CR, abnormal lumbar spine CR, abnormal chest CR, abnormal FAST, abnormalities in physical examination of the abdomen/pelvis or lumbar spine, base excess < –3, systolic blood pressure < 90 mmHg and long bone fractures. The prediction model based on these predictors had a sensitivity of 97% and a specificity of 33%. A diagnostic algorithm was proposed, which could reduce CT usage with 22% as compared to a routine use.
Conclusions: We were able to create a prediction model with a high sensitivity to select patients for abdominal CT after blunt trauma. A diagnostic algorithm is proposed.

7 Selective Approach to Rectal Injuries

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Introduction and objectives: Controversy persists regarding the management of rectal injuries; we intent to discuss a selective approach according to localisation and severity of injuries.

Methods: A retrospective analysis of patients managed between 2000 and 2008 with full-thickness rectal injuries was carried out. Injuries to the anterior and lateral surfaces of the upper two-thirds of the rectum were classified as intraperitoneal (IP), and those of posterior wall as extraperitoneal (EP). The severity of injuries were classified using AAST Rectal Organ Injury Scale (1989).
Results: Seventeen patients were studied; the average age was 26.3 years. The localisation of injuries were: ano-rectal (2), intra-extraperitoneal combined injuries (1), IP (4), and EP (10). The mechanism of injury was penetrating in 12 patients, blunt (3), iatrogenic (1) and foreign body (1). Ten (58.8%) patients were grade 2, five (29.4%) grade 3 and two (11.7%) patients. The ano-rectal and combined lesions were treated with only colostomy, whereas IP lesions with colostomy (1/4) and transabdominal primary repair (3/4). The EP wounds were managed with colostomy (7/10) and transabdominal (3/10) or transanal (2/10) repair; the presacral drainage were added to colostomy and primary repair in three patients. Associated injuries were found in eight (47.05%) patients; morbidity were developed in three (17.8%) patients. There were no deaths.
Conclusion: We concluded that most intraperitoneal localised injuries can be managed with only primary repair; extraperitoneal wounds should be managed with colostomy, with primary repair of rectum if is possible. The presacral drainage was added to colostomy in high grade extraperitoneal wounds.

8 The Relationship Between the Type of Incarcerated Abdominal Wall Hernia and the Risk of Bowel Resection

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Aim: The aim of this study is to investigate the relationship between the type of incarcerated abdominal wall hernia and the risk of bowel resection.
Materials: A retrospective chart review analysis was conducted to all consecutive patients operated for incarcerated abdominal wall hernia in our institution between 2000 and 2009. These parameters were assessed: demographics, hernia types (inguinal, umbilical, femoral, incisional and epigastric) and whether or not a bowel resection was necessitated.
Results: A total number of 137 patients [91 (66.4%) males, mean age (standard deviation) was 49.7 (14.8) years] were included. The number of patients who were operated for incarcerated hernias, and the amount of cases who underwent bowel resection were as follows: inguinal [69 patients; 8 (11.6%)], umbilical [21 patients; 1 (4.7%)], femoral [23 patients; 11 (47.8%)], incisional [15 patients; 3 (20.0%)] and epigastric [9 patients; 5 (55.6%)]. Demographics were similar within the groups ($p > 0.05$) Overall comparison revealed that bowel resection risk was significantly different within the patients with different hernia types (p value < 0.001). Further statistical analysis showed that epigastric and femoral hernias are at more risk for bowel resection than other hernia types ($p < 0.05$ for both).
Conclusion: Current retrospective study has revealed that the necessity of a bowel resection is a common problem for patients with incarcerated abdominal wall hernias and may increase in the presence of epigastric and femoral hernias.

9 Gastrointestinal and Mesenteric Injuries in the Trauma Patient: CT Scan, Time-to-laparotomy and Prognosis

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Introduction and objectives: Gastrointestinal and mesenteric injuries (GIMI) are not common in trauma, and their diagnosis is frequently delayed. Our aims were to determine the reliability of CT scan and to assess the clinical significance of a delayed diagnosis.
Methods: Retrospective analysis of cases confirmed at laparotomy. Patients were identified at the Severe Trauma Registry of our hospital, between 1993 and 2006.
Results: We found 105 (16,6%) GIMI out of 632 patients with abdominal trauma, in a Registry with 1.495 severe trauma cases included. The mean ISS and NISS were of 20 and 25, respectively. Mortality was of 9 (8,5%) patients, 4 of them unexpected. A CT scan was performed in 56 (53%) cases, and only in 37 were there signs suggestive of a GIMI. Surgery was delayed for more than 8 h in 21 (20%) patients, the most common reason being a false negative result in the CT scan. There was no significant increase of morbidity or mortality in the delayed diagnosis group.
Conclusion: The overall incidence of GIMI was high in our Registry (31% in penetrating and 10.7% in blunt trauma). Several factors such as the initial lack of symptoms, a low diagnostic sensitivity of the CT (34% false negatives), and the nonoperative management of solid organ injuries, have contributed to a delayed diagnosis in one of every five patients in our series, but this has not led to a significant increase in septic complications in this group.
Author to editor: CT scan diagnosis of gastrointestinal injuries continues to be a matter of concern. There is controversy on the clinical significance of a delayed diagnosis of small bowel injuries

10 Management of Rectal Injury: Reappraisal of Old Techniques

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Aim: Rectal injury may be treated with diverting stoma, primary repair and distal wash-out. This study aims to evaluate the management and outcome of these options.
Materials and methods: All patients operated for rectal injury between 1999 and 2009 were retrospectively reviewed. These were obtained from patients' charts: demographics, injury type, associated wounds, operative technique and outcome.
Results: A total number 24 patients [22 (91.7%) male with a mean age of 31.5 ± 17.4 years] were included. Injury types were gunshot wounds (n = 11, 45.8%), penetrating stab wounds (n = 4, 16.7%), blunt trauma (n = 4, 16.7%), rectal foreign-body (n = 3, 12.5%), and iatrogenic (n = 2, 8.3%). Additional injuries (n = 9, 37.5%) were observed in small bowel (n = 3, 33.3%), iliac vessels (n = 2, 22.2%), bladder (n = 1, 11.1%), spleen (n = 1, 11.1%), vagina (n = 1, 11.1%) and pelvis (n = 1, 11.1%). Thirteen (54.2%) cases were treated with either primary repair alone (n = 1, 4.1%) or in combination with a diverting stoma (n = 8, 33.3%) or rectal wash-out (n = 4, 16.6%).

Primary repair was omitted due to the reach problem and diverting stoma, alone, was done in 11 (45.8%) cases. Complications including wound infection (n = 3, 12.5%) and evisceration (n = 3, 12.5%), were observed in 6 (25%) patients. Median (range) hospital stay was 7 (3–36) days. Two (8.3%) patients died during or immediately after the operation due to pulmonary emboli and hypovolemic shock, and no procedure-related mortality was detected.
Conclusion: Different combinations of three old techniques including diverting stoma primary repair and distal wash-out have been still using for the treatment of rectal injury with low mortality and high success rates.

11 Surgical Splenic Preservation in a Multiple Solid Organ Injured Patient: a Case Report

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Introduction and objectives: Due to immunological functions, conservation of injured spleen following abdominal trauma is very important. For this reason nonoperative management (NOM) in the last 25 years has been accepted as the ideal treatment in those patents who are hemodynamically stable and do not require a laparotomy; however in case of multiple abdominal solid organ injuries (SOI) NOM is controversial.
Methods: We report on a case of a 27-years-old patient with spleen and renal injury subsequent to blunt abdominal trauma. CT scan revealed a OIS IV injury (Third degree in Graz classification) and an OIS IV renal injury. Since chances for successful spleen angioembolization were judged poor by radiologist, a laparotomy and partial spleen resection with preservation of one-third of the spleen was performed. Immediately after surgery, angioembolization of the renal injury was successfully performed.
Results: A contrast enhanced ultrasound (CEUS) performed on day 7 and day 30 after trauma revealed a hypertrophy of the residual spleen with diffuse distribution of contrast agent in the spleen parenchyma, confirming functional activity of the organ. Morphological and functional evolution of left kidney was normal.
Conclusions: Sequential treatment (surgical preservation of the most injured organ followed by immediate angiographic embolization) could be a valid option in case of multiple abdominal SOI; furthermore, CEUS is an interesting new tool to determine functional activity of residual spleen.

12 Evaluation of Recurrent Pancreatitis

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Introduction: Precise timing of cholecystectomy procedure after biliary pancreatitis is still controversial. The major drawback of interval cholecystectomy is the recurrence of pancreatitis within the interval of 6–8 weeks. Early cholecystectomy (performed prior to discharge), however, have the disadvantages of increased technical difficulty and conversion rates.
Methods: We reviewed 47 patients with recurrent biliary pancreatitis among a total number of 277 cases of biliary pancreatitis in-between January 2007 and January 2009.
Results: The mean age was 64.5 (range 29–85), and male-to-female ratio was 0.4 (13:34). Seventeen patients (%36) had a history of previous cholecystectomy. Of these 17 patients, 8 (%17) have had early cholecystectomy, and 9 (%19) have had interval cholecystectomy. The rest of the patients (%64, n = 30) consists of those who have been scheduled for interval cholecystectomy but have had a recurrent episode during the 8-week interval (%6, n = 3) or after the 8-week interval (%57, n = 27).
Conclusion: The majority of patients with biliary pancreatitis do not have any recurrent episodes even if they do not have a surgical or an endoscopic treatment. According to our data, however, an influenced percentage of recurrent pancreatitis develops in patients who do not have early cholecystectomy. Therefore, we prefer early cholecystectomy in means of reducing the risk of recurrent pancreatitis during or after the 8-week interval.

13 Laparoscopy for Posttraumatic Splenic Cysts: an Adjunct to Conservative Management

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Introduction: Blunt splenic injury is managed nonoperatively in 55–80% of adults in experienced trauma centers. Subcapsular hematoma (SCH) is pattern of injury in just 13% of patients and spontaneous resorbtion is possible in about 20–40% of cases. Posttraumatic splenic cysts (PTSP) are results from failure of resorbtion of SCH and can be symptomatic. Several options of treatment has been proposed but near total cystectomy is the lonely spleen spare procedure with low recurrence rate.
Methods: In a 34 months period (June 2006–December 2008) between 66 prospective consecutive patients with blunt splenic trauma, 9 SCH were observed. Five cases (55%) evolved in PTSP and four (44%) were symptomatic and large (>5 cm) indicating surgery.
Results: One CT drain was tried before surgery but early recurrence occurred. Four laparoscopic decapsulations (near total cystectomy) and epiploplasty were performed 6–13 months after trauma with 100% splenic salvage rate and no recurrence at 1 year follow-up. Mean hospital stay was 7 (6–10) days. Recovery was uneventful with complete activity restauration.
Conclusion: PTSP is the most frequent complication of conservative management for splenic SCH and symptomatic forms require surgery. CT drain is ineffective. Laparoscopic decapsulation and epiploplasty is the spleen spare procedure showing, in our experience, no recurrence and better outcome.
Editor to Self: Seçilmiş bildiri

14 Non Operative Management of Blunt Multiple Solid Organ Injuries: is it Feasible?

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Introduction and objectives Nonoperative management (NOM) of solid organ injury (SOI) after blunt trauma is widely accepted in stable patients without peritonitis; there are few reports regarding NOM in multiple solid organ injuries (MSOI). We analyzed the management of a series of MSOI patients.
Methods: From January 2004 to June 2008 we observed 99 patients with SOI. We analyzed patients with blunt MSOI focusing on sequence and typology of treatment.
Results: Distribution of injuries was the following: spleen 53, liver 38, kidney 30, adrenal gland 12, pancreas 1. NOM was possible in 61.6% of cases, in 15 cases selective angioembolization (SAE) was needed. Mean Injury Severity Score (ISS) was 24. Thirty patients had MSOI with mean ISS of 27. In MSOI group, NOM was possible in 17 points (56.6%) but 3 points needed multiple SAE, while other 3 points underwent single organ SAE. Six points (20%) underwent surgery for multiple resections, 2 points (6.6%) underwent SAE for one organ and surgery for other/s and 5 points (16.6%) underwent surgery for one organ while other/s organ were treated conservatively. NOM failure in MSOI pts was observed in one patient with OISIV liver and OISI spleen injury.
Conclusions: In our series ISS in MSOI points was slightly higher than in single SOI. NOM seems to be feasible in MSOI if SAE is available. The rate of NOM in single SOI is not significantly different than in MSOI. Surgery and SAE can be selectively employed for different organs in the same patient.

15 Nonoperative Management of Liver Gunshot Injuries

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Nonoperative management (NOM) of liver gunshot injuries is yet to gain general acceptance. The purpose of this study was to assess the feasibility and safety of NOM of liver gunshot injuries.
Methods: A prospective, protocol-driven study, which included all liver gunshot injuries admitted to a level I trauma center, was conducted over a 4-year period. Patients with right-sided thoracoabdominal, and right upper quadrant (RUQ) gunshot wounds with or without localized RUQ tenderness underwent contrasted abdominal CT scan evaluation to detect the presence of a liver injury. Patients with confirmed liver injuries were observed with serial clinical examinations. Outcome parameters included need for delayed laparotomy, complications, length of hospital stay and survival.
Results: During the study period, 63 patients with liver gunshot injuries were selected for nonoperative management. The mean injury severity score was 19.6 (range 4–34). Simple liver injuries (Grades I and II) occurred in 26 (41.3%) patients and complex liver injuries (Grades III, IV and V) occurred in 37 (58.7%) patients. Associated injuries included 44 (69.8%) diaphragm, 43 (68.3%) lung contusion, 42 (66.7%) hemo/pneumothorax, 21(33.3%) rib fractures and 14 (22.2%) kidney injuries. Five patients required delayed laparotomy resulting in successful nonoperative management rate of 92%. Complications included: liver abscess (3), biliary fistula (3), retained hemothorax (4), and nosocomial pneumonia (5). The mean hospital stay was 6.1 (range 3–23) days. There was no mortality.
Conclusion: The nonoperative management of appropriately selected patients with liver gunshot injuries is feasible, safe and effective, regardless of the liver injury severity.

16 Laparoscopic Diagnosis and Treatment of Abdominal Stab Injuries

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Background: We present our series of patients undergoing laparoscopy for the diagnosis and treatment of abdominal stab injuries (ASI).
Methods: The patients who underwent laparoscopic procedures due to ASI were included in the study. The contraindications for laparoscopy were hemodynamic instability, concomitant severe cranial injuries, posterior trunk injuries and prior abdominal operations.
Results: From January 1997 to December 2008, 116 patients underwent laparoscopic management of ASI. There was no intra-abdominal pathology requiring surgical intervention (nontherapeutic laparoscopy) in 61 patients (52.6%), and 5 patients in this group had no peritoneal penetration (negative laparoscopy). Laparoscopic treatment was performed (therapeutic laparoscopy) in another 32 patients (27.6%), including bleeding control to the liver, colonic, gastric, and diaphragmatic repairs and intraabdominal bleeding control. Laparotomy was avoided in a total of 93 (80.2%) patients. In 23 patients (19.8%), laparoscopy was converted to laparotomy. There was no mortality. A missed small bowel injury in a patient was the only perioperative morbidity in patients who underwent laparoscopy. Colonic injury was the most common operation that was performed by laparotomy. The converted operations were due to inadequate exposure, technical failure, and lack of experience to complete the procedure.
Conclusions: Laparoscopy is a safe and efficient technique in the management of ASI. It must be more frequently used as a therapeutic tool.

17 The Role of Diagnostic and Therapeutic Laparoscopy in Penetrating Left Thoracoabdominal Injuries

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Background: Diagnostic laparoscopy (DL) decreases the incidence of both negative or unnecessary laparotomies and missed diaphragm hernias caused by diaphragmatic injuries. The aim of this study was

to determine the effectiveness of DL in early diagnosis and treatment for the penetrating left thoracoabdominal injuries.
Methods: 141 patients suffering from penetrating left thoracoabdominal injuries from January 2001 to November 2008 were analyzed retrospectively. The patients who present haemodynamical instability and abnormal peritoneal signs were excluded from the study. Chest radiograms, abdominal and pericardial ultrasound exam were applied preoperatively on the individuals who were taken to the operating room. Tube thoracostomy was applied preoperatively when higher than 10% pneumothorax or massive haemothorax. The diaphragmmatic injuries were repaired by laparoscopy, when success was not achieved with this method laparotomy was performed for the treatment.
Results: The average of the ages of the patients was 27.6 (between 17 and 70). DL was applied in 120 patients and diaphragmatic injury was diagnosed in 36 patients (36%). The injuries in diaphragma were repaired by laparoscopy in 16 patients and laparotomy was applied in 20 patients as the repairment method. Tube thoracostomy was applied to 43 patients. Six patients who suffered increased pneumothorax after pneumoperitoneum were also treated with tube thoracostomy. DL revealed intraabdominal organ injuries (spleen 7, stomach 3, small intestines 3, liver 3, colon 1, kidney 1).
Conclusion: DL performed in penetrating left thoracoabdominal traumas is an efficient method for the diagnosis of diaphragmatic and intraabdominal organ injuries.

18 Diaphragmatic Rupture in Left Thoracoabdominal Wounds

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Introduction: Diaphragmatic rupture is not uncommon in blunt or penetrating injuries of thoracoabdominal regions. We presented the results of eight consecutive patients with traumatic diaphragmatic rupture in the last 14 months.
Methods: Eight patients with traumatic diaphragmatic rupture were operated between December 2007 and December 2008. Patients were evaluated regarding age, gender, type of injury, indication for operation, type of operation, mean operative time, associated injuries, need of blood transfusion, mean hospital stay, morbidity and mortality.
Results: All of the patients were male and the type of injury was stab wound in 7 and blunt trauma in the remaining patient. Mean age of the patients was 27.8 ± 5 (17–63). Indication for operation was severe dyspnea in three, acute abdomen in three, and hemodynamic instability in two patients. In three patients, laparoscopic exploration was performed successfully and in others open exploration was done. Mean operation time was 138.12 ± 11 min (105–195). In two patients additional gastric injury, in one both gastric and left renal injury, in one left colonic injury, and in one patient pericardial injury was detected. Only patient with pericardial injury needed three units of erythrocyte transfusion. In seven of eight patients, chest tubes were inserted preoperatively. No morbidity occurred in seven but one patient with hemodynamic instability was lost preoperatively.
Conclusion: Diaphragmatic rupture is a frequent consequence of left thoracoabdominal trauma with increased rates of morbidity and mortality due to associated visceral organ injuries. Laparoscopic approach can be used safely both in diaphragmatic repair and treatment of other associated organs.

19 Expectant Approach in Abdominal Gun Shot Injuries

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Expectant approach to abdominal gun shot injuries have been gaining acceptance in the last decade. In this report evaluation of patients with abdominal gunshot injuries who were treated with conservative approach were presented.
Methods: Patients admitted to our Emergency Clinic with diagnosis of abdominal gunshot injuries between August 2002 and December 2008 was evaluated.
Results: A total number of 993 patients applied to our Emergency clinic with gun shot injuries. Of these 85 patients were operated immediately for abdominal gun shot injury and 27 were treated conservatively. Male to female ratio of 27 patients was 24/3 with a mean age of 31.03. The entrance of bullet was right upper quadrant in eight, left lower quadrant in three, suprapubic in three, left thoracoabdominal in three, right thoracoabdominal in four, lumbar in three, and left lower quadrant in one patient. After the decision of nonoperative treatment due to hemodynamic stability, full cell blood count, abdominal ultrasonography and computerized tomography was performed. Patients were followed up with regular physical examination and cell blood counts. In 12 of these patients ultrasonography revealed normal findings, in remaining patients free fluid was detected. Mean hospital stay was 2.4 days. In none of the patients needed any surgical intervention and no morbidity or mortality occurred in any patients.
Conclusion: Nonoperative approach can be safely performed in abdominal gun shot injuries with close follow up avoiding negative laparotomies and may be added to the algorithms of penetrating abdominal injuries as is the case in stab wounds.

20 Selective Conservative Follow up of 961 Patients with Penetrating Abdominal Injury Caused by Stab Wound

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Introduction: Since clinical data determined that selective conservative follow up of penetrating abdominal injuries may avoid negative laparotomy at a rate of 60% in 1970s, this approach keeps to gain acceptance. The aim of this study is to present the results of selective conservative follow up in patients with penetrating abdominal stab wounds.
Methods: The prospective data and the outcome of 961 patients with penetrating abdominal stab wound between September 2001 and

December 2008 was evaluated. Patients having persistent hemodynamic instability despite rapid fluid resuscitation or signs of peritonitis underwent immediate laparotomy. Patients who were stable and had no signs of peritonitis were selected for further evaluation and observed with serial clinical, radiologic and blood count examinations.
Results: The mean age of the patients was 30 (7–79), 94.3% of the patients were male and 5.7% were female. Wounds were thoracoabdominal in 23.7%, abdominal in 76.3%, single in 65% and multiple in 35%. Of the 106 unstable patients at the admission time (11%) rapid fluid resuscitation provided stabilization in 73 (7.6%) and remaining underwent laparotomy (3.4%). During follow up 13.1% patients developed the signs of peritonitis and underwent laparotomy. Total rate of laparotomy was 16.4%, and the laparotomy was negative in 5.3%. The mortality rate was 0.7%.
Conclusion: Selective clinical follow-up avoided surgery in 83.6% of the patients. The rate of laparotomy was significantly lower compared to previous literature. Selective clinical follow-up in penetrated abdominal stub wounds is safe and advisable.

21 Ten Years of Non Operative Management of Blunt Splenic Injuries in a Dutch Trauma Center: Results and Complications

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Introduction and aim: Nonoperative management (NOM) of splenic injury is currently the most common management strategy in hemodynamically stable trauma patients. Aim of this study was to asses if the success rates of 80–97% described, mainly in the North-American literature could be confirmed.
Methods: We conducted a retrospective study of all patients older than 17 year with blunt splenic injury who were admitted to a Level I trauma center. A total of 120 patients were identified with blunt splenic injury during the 10-year study period (1998–2007).
Results: The majority were young men; mean age was 34 years. Thirty-three (27%) patients underwent immediate surgical management. Sixty-seven (56%) patients were treated with planned NOM and 20 (17%) patients underwent angiography and embolization (A&E). We did not encounter early complications following A&E. Fourteen patients failed observation due to ongoing bleeding. Of these, 10 were treated with splenectomy and three with A&E. The splenic salvage rate after observation was 84%. The splenic salvage rate after A&E was 80%. Four of the five patients with a rebleeding after initially A&E underwent splenectomy and one patient was treated with reembolization. The overall mortality rate was 7.5%. None of the patients died as a result of splenic injury treatment failure.
Conclusion: Nonoperative management in blunt splenic injuries in our trauma center is a well-tolerated treatment with a success rate of 84%. The splenic salvage and mortality rate is comparable with the literature which is mainly based on North-American studies.

22 Prospective Reassessment of the Incidence of Abdominal Compartment Syndrome Among High-risk Trauma Patients: a Success Story

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Background: Abdominal compartment syndrome (ACS) was recently characterized with 15% incidence and 50% mortality in high-risk shock/trauma patients. Prediction models and preventive strategies were developed to overcome this lethal syndrome.
Aim: To re-evaluate the incidence of ACS and intra-abdominal hypertension (IAH) after the implementation of the preventive strategies.
Methods: 24-month prospective study was performed on consecutive patients in a Level-1 trauma ICU. Patients who had risk factors for the development of ACS (abdominal injury, laparotomy, pelvic fracture, shock resuscitation, transfusion) were included. Significant head injuries (AIS > 2) were excluded. Intra-abdominal pressure (IAP) was measured 2-hourly. ACS and IAH were defined based on the World Society on ACS criteria. Demographics, injury and shock severity parameters, interventions, outcomes (mortality, MOF, ICU LOS) were prospectively collected.
Results: Eighty-three polytrauma patients (Age: 41 ± 2 years, 70% males, ISS: 29 ± 1) met inclusion criteria. All had severe shock (BD: -6 ± 0.5 mmol/L, Lactate: 3.3 ± 0.5 mmol/L) and required 5 ± 0.5U blood transfusions during the first 24 h. The average IAP was 14 ± 1 mmHg. No patients developed ACS. Twenty-three (28%) patients had no IAH and 60 (72%) had IAH (Grade I: 38, Grade II: 17, Grade III: 4 and Grade IV: 1). Two patients (2.4%) died (1 IAH, 1 nonIAH). One nonIAH (4%) and four IAH (7%) patients developed MOF. The ICU LOS was 9 ± 1 days in both IAH and nonIAH patients.
Conclusions: After the implementation of preventive strategies ACS was not detected in high-risk polytrauma patients. Most patients developed IAH but in the lower grades without effects on the outcomes.
Editor to self: seçilmiş bildiri

23 An Assesment of the Effect of Ankaferd Blood Stopper on Haemostasis and Histopathological Score in Experimental Liver Injury

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Aim: Ankaferd Blood Stopper® (ABS) has been used historically as a haemostatic agent. The basic mechanism of action for ABS the formation of encapsulated protein network that provides focal points for erythrocyte aggregation. Aim of this study,investigate the effects of ABS on intra-abdominal, histopathological score and hemostasis, in an experimental liver injury.
Methods: The study was performed at the animal laboratory of Suleyman Demirel University after obtaining and approval from the Ethics Committee. Forty rats were randomly divided into primary suture group PS (n = 15),primary suture and Ankaferd ABS group (n = 15) and sham group (n = 10). A wedge resection was performed on the left lobe of the liver. In primary suture group, liver was sutured with polypropylene material, while ABS was administrated on the liver surface in ABS group. Adhesion,histopathological score and hydroxy prolin levels measured on postoperative 3 and 15 days
Results: İntra abdominal adhesions were same between two groups on third (2.20 ± 1.30 vs. 2.0 ± 1.11) and fifteenth (1.60 ± 0.54 vs. 1.25 ± 0.7) postoperative days. Histopathological scores were better in the ABS group in comparison with the primary suture group on third (2.5 ± 0.5 vs. 5.25 ± 0.2, P = 0.006) and fifteenth (1.65 ± 1.7 vs. 3.15 ± 1.0, p = 0.025) postoperative days. Hydroxyproline levels higher than on postoperative 15th days on ABS group (17.12 vs. 13.69 p = 0,005)
Conclusion: These data suggest that ABS in experimental liver trauma, causes good histopathological score and shorter hemostasis time and higher hydroxiprolin levels.

24 Effect of Ankaferd Blood Stopper on Oxidative Stress in Experimental Liver Injury

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Aim: The basic mechanism of action for Ankaferd blood stopper (ABS) is the formation of encapsulated protein network that provides focal points for erythrocyte aggregation. Aim of this study is to investigate the effects of ABS on nitrite metabolism biochemical laboratory tests, in an experimental liver injury.
Methods: The study was performed at the animal laboratory of Suleyman Demirel University after obtaining an approval from the Ethics Committee. Forty rats were randomly divided into three groups, namely, primary suture group (n = 15), ABS group (n = 15), and control group (n = 10). A wedge resection was performed on the left lobe of the liver. In primary suture group, liver was sutured with polypropylene material, while ABS was administrated on the liver surface in ABS group.
Results: It was noted that the hemogramme, biochemical laboratory test results, Nox and nitrite levels on the 3rd and 15th days of ABS and primary suture groups did not show sensible differences from one another. NOx levels ABS versus primary suture groups 3rd day (12.44 ± 5.22 vs. 12.90 ± 1.36) p = 0.42 15th days (16.81 ± 5.01 vs. 13.45 ± 2.53) p = 0, p = 28, Nitrite levels 3rd days (9.58 ± 3.33 vs. 11.90 ± 2.12) p = 0.066 15th days (13.96 ± 6.95 vs. 12.68 ± 3.34) p = 0.39.
Statistical analysis: Kruskal Wallis test†: Mann Whitney U test, *p < 0.05.
Conclusion: These data suggest that ABS does not have any negative effect on routine biochemical laboratory tests, hemogram levels and nitrite metabolism in experimental liver trauma.

25 Conservative Management of Renal Traumas

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Introduction and objective: To outline the trends in the management of patients of renal trauma at the Department of Urology, Istanbul Research and Teaching Hospital, from 1995 to 2007.
Methods: We retrospectively reviewed 26 patients identified with blunt and one patient penetrating renal trauma.
Results: Of 27 patients of renal trauma, injuries were graded I–V in 9 (33%), 6 (22%), 4 (14%), 8 (30%), respectively, and no grade V. Nephrectomy was performed only in one patients of Grade IV injury. Extravasation out of collecting system were observed in six patients but only two needed intervention (one D-J and one partial nephrectomy + D-J). Rest of the patients were treated conservatively with blood transfusion, parenteral fluid, antibiotics, analgesics and bed rest. Transfusion was required for 11 of 27 patients ranging in between 1 and 4 units. The mean amount of transfusion was 2.45 units/patient transfused. The mean duration of hospitalization was 8 ± 5 (1–20) days and the duration was higher for those who had undergone exploration (mean: 11.3 days). Associated injuries were uncommon, only two patients with left subdiaphragmatic hematoma originating from spleen. None of the patients died of associated injury.
Conclusion: Conservative management of blunt renal trauma; if there is no associated intraabdominal organ injury, is feasible in patients who are hemodynamically stable at presentation. Frequent imaging, supportive treatment and immobilization may prevent unnecessary surgical intervention, especially nephrectomy.

26 The Value of Serial White Blood Cell Counts as a Predictor of Hollow Viscus Injury

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Introduction: The significance of serial white blood cell (WBC) counts in trauma patients with suspected hollow viscus injury (HVI) is unknown. The purpose of this study was to examine the ability of serial WBC counts to diagnose a HVI.
Methods: After IRB approval, all patients admitted to a level 1 trauma center from 01/2003 to 12/2007 with at least two serial WBC

measurements were included in a retrospective analysis. The trauma patients with a HVI were compared against those without any intra-abdominal injuries.
Results: During this study period, 43 patients with a HVI had at least 2 preoperative WBC counts. Their highest WBC count within the first 24 h was 16.7 ± 4.7. This was significantly higher than the maximal 24 h WBC count of the 4,520 patients without any intra-abdominal injury (13.0 ± 5.2, adjusted $p < 0.001$). Penetrating injury, a concomitant severe thoracic trauma (chest AIS ≥ 3), and a maximal 24 h WBC count ≥ 20.0 were independent risk factors for HVI. If the highest 24 h WBC count was ≤ 12.5, this was independently associated with a lower incidence of HVI. The area under the Receiver Operating Characteristic Curve for the highest 24 h WBC in predicting HVI was 0.723 (CI 95% 0.656–0.790).
Conclusion: WBC counts ≥20.0 were independently associated with HVI while those ≤ 12.5 ruled against the presence of such an injury. The interpretation of serial WBC counts as a marker of a hollow viscus injury requiring a laparotomy, however, should not be a stand-alone predictor.

27 Therapeutic Approach in Children with Genitourinary Trauma

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Objectives: The aim of the present study was to share our experience on children treated for genitourinary trauma in our clinic.
Methods: A total of 172 children who treated for genitourinary trauma in 2000–2007 were evaluated.
Results: The injured organ was kidney in 106, ureter in 4, bladder in 9, urethra in 26, and perineal-genital organs in 49 patients. The mechanism of injury was fall in 86 patients, traffic road accident in 67, gunshot in 8, penetran injury in 7, and iatrogenic in 4 patients. Of the 106 patients with kidney injury, 5 revealed normal in ultrasound, while abdominal free fluid was the only ultrasonographic finding in 53 children. IVU revealed normal in 73.3% of these patients. Abdominal CT showed genitourinary injury in all patients. Of the 106 patients with renal injury, 93 were treated with nonoperative approach, while 7 underwent open surgery and 6 underwent percutaneous nephrostomy tube drainage. Complication developed in 8 patients, while 2 died.
Conclusions: Abdominal CT is not necessary in hemodynamically stabile children who have normal ultrasound. However, ultrasound is not sufficient by itself in determining the severity of genitourinary injury. Therefore, those who has hemodynamic instability or ultrasonographic finding should underwent abdominal CT to determine the severity of injury and treatment accordingly. IVU is not beneficial for the majority of patients with genitourinary trauma. In patients with severe renal injury, immediate surgery may increase nephrectomy rate. Therefore, even patients with severe renal injury should be treated conservatively when hemodynamically stabile.

28 Early Endoscopic Treatment in Boys with Posterior Urethral Rupture

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Objectives: We aimed to discuss different therapeutic approach in boys with posttraumatic posterior urethral rupture (PUR).
Methods: A total of 17 boys with posttraumatic PUR who received different therapeutic approach by the same pediatric urologist between 2000 and 2006 were evaluated. Early endoscopic catheterization (EEC) was performed in complete PUR 2 week after the trauma when the patients were hemodynamic stabile. Delayed urethroplasty (DU) was performed in incomplete PUR patients 3–6 months after trauma. Early open surgery (EOS) was performed in patients with bladder neck laceration.
Results: The mean age was 7.9 (4–14) years. The localisation of urethral rupture was posterior urethra in 14 patients and bladder neck in 3. The severity of urethral injury was complete in 7 patients and incomplete in 10. Associated organ injury was observed in 11 patients. EEC was performed in seven patients, DU in seven, and EOS in three patients.
Conclusions: Associated organ injury rate is very high in posttraumatic PUR. This is particularly true in patients with complete urethral rupture. In these patients, early surgical intervention may increase morbidity due to hemodynamic instability, associated local organ injury and/or hematoma. In patients with complete PUR patients, on other hand, DU may be associated with high complication rate due to such disadvantages as long-gap between uretral ends. Therefore, EEC after hemodynamic stability (about 2 weeks after trauma) appears to be a superior alternative treatment of choice causing less morbidity in children with complete PUR.

29 Thoraco-abdominal Limited Sonography in Surgical Hands: a Valuable Tool for the Decision Making

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In emergency setting, the surgeon facing a penetrating torso trauma is guided mainly by clinical examination and readily available technical investigations like standard X-rays. Peritoneal lavage is of limited use in penetrating trauma and computed tomography may be too time consuming in unstable patient. The assessment of the abdomen and the pericardium by the Thoraco-abdominal limited sonography (TALIS) allows a quick assessment in the emergency room during the reanimation procedure. His acceptance, however, remains debated in penetrating thorax trauma.
The aim of the present study was to assess TALIS in the diagnostic evaluation of penetrating torso injuries in a suburban South African trauma unit. The primary end point was the impact of TALIS on the surgical decision-making.
The surgeon-in-charge had to specify prospectively the chosen therapeutic plan before and after echographic examination. The differences in the pre- and post- ultrasound strategies were analyzed. In a 4 month period, 76 consecutive patients [70 male (92%), 6 female(8%)] were prospectively enrolled. The influence of TALIS on decision-making was considered as major in five (7%) and moderate in nine patients (11%). No delay due to TALIS nor adverse events in patient management were observed during the study period. Based on intra-operative findings,we had no false positive TALIS assess-

ment. In case of conservative treatment suggested by TALIS findings, no further surgical treatment was necessary.
We conclude that TALIS is a valuable tool in the assessment of penetrating torso trauma and should be recommended.

30 Only Moderate Intra- and Interobserver Agreement Between Radiologists and Surgeons Regarding the Grading of Blunt Pediatric Hepatic Injury on CT Scan

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Introduction: The American Pediatric Surgical Association provides guidelines for hepatic or splenic injury, based on grade of injury on CT scan. This study sets out to determine intra- and interobserver agreement on grade of injury.
Patients and Methods: CT scans of patients with proven liver injury were assessed twice by two radiologists, pediatric surgeons, trauma surgeons and one hepatobiliary surgeon. All scans were multislice with arterial and venous phase contrast. Injury was scored using the AAST liver injury scale. Intra-observer agreement was tested using Cohen's Kappa, inter-observer agreement using Cohen's kappa on the second readings and Spearman's rank correlation on the mean of both readings.
Results: Ct scans of 27 patients, age 11.7 ± 5.2 years, were reviewed. The mean grade was 3.3 ± 1.1 for radiologists, 2.9 ± 1.0 for pediatric-, 3.0 ± 0.9 for trauma- and 3.2 ± 0.8 for hepatobiliary-surgeons ($p = 0.30$) Intra-observer agreement was moderate, with kappa's <0.6 for all observers except for one radiologist. Cohen's Kappa inter-observer correlation was also moderate, with kappa's ≤ 0.5. In contrast, Spearmans inter-observer correlation was good, suggesting an agreement on general severity of injury although not on the exact grading.
Discussion/Conclusion: Intra-observer agreement is only moderate in the assessment of liver injury. Only the most experienced radiologist demonstrated good intra-observer agreement which might plea for the presence of a senior trauma radiologist. Although there is an agreement on general severity, inter-observer agreement is moderate. These data cast doubt on the use of the AAST injury score alone as the appropriate tool for decision making for children with hepatic injury.

31 Abdominal Injuries in Free Falls from Height

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Background: Falls from height are a major cause of morbidity and mortality. However, little has been reported on abdominal injuries in these patients. In addition, no study has reported on the treatment of blunt force abdominal injuries after falls from height.
Objective: To assess the abdominal injuries, treatment and long-term outcome in patients who have fallen from a great height.
Methods: All consecutive patients who sustained a fall of 5 m or more during a 4-year period, were identified. Additional data were extracted from medical records. Long-term outcome was assessed with the EuroQol 6D (EQ-6D) questionnaire.
Results: One hundred and thirty-nine patients with a median age of 31 years (range, 1–80) were included. There were 106 men (76.3%). Forty-one (29.5%) had abdominal injuries. The most prevalent abdominal injuries were retroperitoneal hematomas (n = 13), liver lacerations (n = 11), kidney lacerations (n = 9), and spleen lacerations (n = 8). Abdominal injuries were associated with higher falls, a higher Injury Severity Score, lower Revised Trauma Score, lower Glasgow Coma Score, and longer hospital stay. Ppatients with abdominal injuries had a tenfold higher mortality than those without abdominal injuries (19.5 vs. 2.0%). The study cohort had lower scores on all EQ-6D domains in comparison with the general Dutch population. However, the EQ-6D did not differ between the abdominally injured and nonabdominally injured patients.
Conclusion: Abdominal injuries were common and associated with a tenfold higher mortality. Although significant long-term consequences were commonly found, there was no difference between abdominally injured and nonabdominally injured patients.

32 The Effect of Copper, Zinc, and Multivitamin Comlex (Cernevit®) on Hepatic Healing in Rats with Blunt Trauma of the Liver

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Non-operative treatment of blunt trauma has recently been increased since radiodiagnostic methods developed. In this study it was aimed to investigate the effect of copper, zinc, and multi vitamin complex on the healing of blunt type trauma of the liver in experimental rat model. Blunt type abdominal injury was performed in 32 Wistar albino rat, using with special injury platform, under general anesthesia. Rats were divided into four groups each contained eight rats. No treatment was given to Group I. Zinc and copper were given to Group II and III, respectively, via orogastric route. Multivitamin complex (Cernevit® flacon) was given to Group IV, intraperitoneally. Three days later following trauma simulation, laparotomy was performed and blood sample was obtained from the inferior vena cava for detecting AST, ALT and LDH level, total hepatectomy was performed for the detection of inflammation level and Ki-67 staining status.
Results: AST, ALT and LDH levels were significantly higher in Group I ($p < 0.05$). These levels were significantly lower in Group II and III ($p < 0.05$), whereas significant decrease was not reached in Group IV. Inflammation score of the explanted liver was significantly higher in Group I. Inflammation was significantly recovered in Group II ($p < 0.05$). Ki-67 percentile was significantly lower in Group I.

Highest percentile of Ki-67 was noticed in Group II. Copper and zinc administration was induced to decrease inflammation, to increase healing and to recover liver enzymes levels following blunt liver injury. Multivitamin complex did not influence to liver enzymes whereas did reduce inflammation levels.
Editor to self: Seçilmiş bildiri olabilir

ACUTE CARE SURGERY

33 Femoral Head Injuries: which Treatment Strategy Should be used?

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Despite different operative and nonoperative treatment strategies, the outcome of femoral head fractures has not changed over the past years. Treatment is still controversial: to operate or not to operate. What should be the technique of the operation: excision of the particles or fixation of the particles. What should we use for fixation. In this study we aimed to answer these questions. These fractures are very rare injuries. We retrospectively reviewed six patients treated with different methods due to femoral head fractures. All patients were sent to emergency department due to high energy trauma. One patient had bilateral injury. The fractures were classified according to Pipkin Classification; we had one type I, four type II and one type IV injury. Three of the hips were operated, and three were treated with nonoperative methods. For the fixation cannulated conical compression screws were used following anatomic reduction of the fracture. Acetabular fractures were also fixed with plate-screw fixation. The average follow up of the patients were 24 months. All the fractures were united without any major complication. One of the operated patients had deep vein thrombosis, and one had limited internal rotation. Nonoperatively treated patients had good – excellent functional results. As a result, anatomic reduction of all fracture fragments seems to be the major factor influencing the outcome in the literature, selectively nonoperatively treated patients have also good outcome in short follow up when compared with operatively treated patients. Longer follow up is needed to evaluate osteoarthritic changes.
Author to editor: Femoral head fractures are very rare injuries in orthopaedic experience. The biggest series have 20–25 cases. The treatment is also controversial. In this study we discussed different treatment modalities and outcomes after femoral head fractures.

34 The Influence of Co-morbidity, Postoperative Anaemia and Complications on Recovery and Length of Stay in the Hospital after a Hip Fracture in Elderly in the Netherlands

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Introduction and objectives: About 80% of all fractures in elderly people are seen in the lower extremity.
Most hip fractures are accompanied with high co-morbidity, postoperative anaemia (Hb < 6.0), postoperative complications (e.g. cardiac, renal failure, infections) long length of stay and a low 1-year survival. The aim of this study was to assess the influence of co-morbidity, postoperative anaemia and complications on recovery and length of stay in the hospital after a hip fracture in elderly in the Netherlands.
Methods: The minimum age of the scored hip fracture patients was 65 years old and underwent surgery at our hospital.Patients were scored on length of stay, on the different departments, gender, age, diagnosis, treatment, co-morbidity, postoperative complications, ASA-score, biochemical markers, and discharge.
Results: In 2007 (N = 145) was 78.5% and in 2008 (N = 119) was 76.2% of the included patients familiar with co-morbidity. In 2007 was 44.7% and in 2008 was 57.6% of the included patients registered with complications. In 2007 was 44.1% and in 2008 was 38.8% of the included patients registered with postoperative anaemia. No significant relation was found between postoperative anaemia and postoperative complications ($p < 0.83$). No significant relation was found between postoperative anaemia and length of stay at the department ($p < 0.153$). Co-morbidity (ASA 3-5) led to a significant longer stay at the department ($p < 0.047$). Postoperative complications led to a significant longer stay at the department ($p < 0.024$).
Conclusions: Both co-morbidity and postoperative complications led to a significant longer stay in the hospital. Both postoperative complications and longer length of stay was not significant related to postoperative anaemia.

35 Hemostatic Affect of "oxidised Cellulose" (Bloodcare) Powder in a Rat Model with Femoral Artery Bleeding

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Introduction and objectives: We claimed to investigate the hemostatic affect of ''local oxidised cellulose'' (OC) powder on a rat model with femoral artery bleeding.
Methods: We used 22 gauge branule in order to perforate femoral artery of 10 wistar albino rats under eter anesthesia. Later they were randomized to control (standard scale weight) and study groups (standard scale weight and OC). In the study group, OC (0.5 g) was poured onto the bleeding site and a mass was placed on it. At the first minute, the mass was removed and assessment of hemostasis was done. If the bleeding ceased at this moment the test was scored as ''passed at first minute''. If not, an additional and same quantity of OC and same amount of compression was reapplied until the second and fourth minutes in a similar way. The similar sequence of trials were done in the control group without OC. The difference between bleeding periods in two groups was observed.
Results: Bleeding stopped at second minute in two of five rats and at fourth minute in three of five rats in the study group. However hemostasis was not achieved either at fourth minute in the control

group. Differences between two groups was statistically significant (p = 0.004).
Conclusion: Application of OC powder and a standart level of compression (achieved with a scale weight) significantly decreased the time of hemostasis here in this rat model with femoral arterial bleeding.
Author to editor: Sayin Baskan, Ben ve arkadaslarim ''lokal hemostatik ajanlar'' ile yakindan ilgileniyor ve bunlarla cesitli hayvan deneyleri yapiyoruz. Daha once yine bu ajan ile yaptigimiz bir calisma ayni kongremizin 2008 yilinda secili bildirileri arasina uygun gorulmus ve kongrede Cemalettin hocamizin da hazir bulundugu ve degerli katkilarinin oldugu bir ortamda sunmus idim. Ozetle TraunaDEX isimli toz preperat hemoztaz icin en azindan bu deney modelinde etkili idi. Sonra arastirmaalrimiza devam ettik. Piyasada halen hekimlerimiz tarafiindan kullanilan ve kanama durdurmada etkin oldugu iddia edilen ''oxidised cellulose'' (Bloodcare) isimli ajan oldugunu bulduk.tabii daha once kullandigimiz ve artik hakim oldugumuz deneysel modelde bu ajaninda etkinligini tesbit etmeyi amacladik. Bu calismamiz ile ilgili bazi noktalar: Bu calisma ''amaci, basligi, dizayni, vs acisindan dunyada ki ilk ve tek calismadir. Cunku yaptigimiz ciddi literatur taramasinda bu ajan sadece beyin cerrahlari, kadin dogumcular ve genel cerrahlar tarafindan intraabdominal, intraperitoneal vs ameliyatlarda kullanildigini ama external kanamalarda etkinligi ile ilgili hic bir calisma olmadigini gorduk. Ulkemizde hayvan deneyleri ve hatta klinik arastirmalar ve en azindan benim bildigim kadari ile cok az sayida yapiliyor. Evet hayvan deneylerinin bilimsel kanit degerinin oldukca alt seviyelerde oldugunu biliyoruz ama bence ulkemiz ve ulkemiz tibbi adina iyi bir gelisme diye dusunuyorum. Hatta genc asistan arkadaslar bu sekilde etkin ve basarili, kisa zamanda olusturulabilen tezlerde yapabiliyorlar Not: Bu calismamiz bilim dunyasinda da ilk defa bu anlamli kongrede (eger bilimsel komite uyelerince uygun gorulurse) sunulacaktir. Paylasmak istedik En derin saygilarimla dr. gurkan ersoy

36 Is Mannheim Peritonitis Index Valid? an Analysis from Sri Ramachandra University, India

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Mannheim peritonitis index (MPI) is a scoring system with prognostic significance. We applied MPI to patients with perforative peritonitis (on patients in Sri Ramachandra Medical College) to validate the scoring method. It is a specific score with accuracy and allows prediction of prognosis.

Aim of the study

(1) To study the incidence and aetiology of perforative peritonitis.
(2) To study the demographics of the study population.
(3) To analyse if Mannheim peritonitis index (MPI) is a valid scoring method.

Patients and methods

1. This was a prospective study done from January 2008–December 2008 at Sri Ramachandra Medical College and Hospital, Chennai.
2. All patients (> 18 years of age) with a diagnosis of perforative peritonitis (who underwent surgery) formed our study population.
3. The aetiology of the perforation was documented at surgery.
4. Co-morbid conditions and organ failure was documented.
5. All patients were stratified as per MPI

Results

MPI	<21	21–29	>29
Number of patients	21	10	5
Number of deaths	0	2	4
% of deaths	–	20%	80%

Conclusions: Of the variables studied- age, organ failure (p = 0.01), malignancy (p = 0.01), colonic origin (p = 0.05), generalized peritonitis (p = 0.01) and faeculent/purulent peritoneal fluid (p = 0.13) were statistically significant. Male gender and duration of peritonitis were not statistically significant in our study. We conclude by saying that in our series MPI served as a good scoring tool.
Author to editor: Reference: Wacha H, Linder MM, Feldman U, Wesch G,Gundlach E, Steifensand RA. Mannheim peritonitis index – prediction of risk of death from peritonitis: construction of a statistical andvalidation of an empirically based index.Theoretical Surg 1987; 1: 169–77.

37 Perforated Duodenal Ulcer, has Anything Changed?

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Introduction: To assess the current management of perforated duodenal peptic ulcer, a focused analysis was conducted excluding gastric, traumatic and iatrogenic perforations.
Patients and methods: A retrospective study of a 6-year period identified 61 patients. Mean age was 59 (range 19–87) years and 33 (54%) were male. Medical history included nonsteroid anti-inflammatory drugs in 46%, smoking in 14%, previous peptic ulcer in 8% and steroids in 5%. One of ten patients tested for *H. pylorii* was positive.
Results: Generalized peritonitis was recorded in 64% and localized tenderness in 31%. The mean (SD) C-reactive protein value was 100 (141) g/l and white cell count 12.8 (7.9). Plain abdominal X-ray was positive for air in 87% (41/47) and CT scan in 86% (18/21). At operation, an intraperitoneal perforation was detected in 87% and retroperitoneal perforation in 11%. A local abscess was found in six patients (10%). The treatment consisted of suture repair in 92%, complex repair in 2%, peritoneal lavage in 92%, external drainage in 80%, and nasogastric decompression in 95%. Antibiotic treatment consisted of cefuroxime-metronidazole in 92%. The overall hospital mortality and morbidity rates were 11 and 21%, respectively. Three patients (5%) had postoperative duodenal leak and three (5%) intra-abdominal or retroperitoneal abscesses. The mean (SD) hospital stay was nine (12) (range 1–88) days.
Conclusion: The majority of patients can be diagnosed with conventional clinical and radiological methods and treated with suture, decompression, peritoneal lavage, and drainage. The mortality remains at around 10% and duodenal morbidity at 10%.

38 Evaluation of Different Scoring Systems Predicting Mortality and Morbidity in Geriatric General Surgical Emergencies

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Background: Accurate measure of surgical outcomes, proper comparison of hospital and surgeons regardless of case mix can be performed by mortality prediction models.
Aim: The aim of this study is to analyze factors affecting mortality, to present our clinical experience and patient profile and to evaluate available scoring systems in use.
Material–Method: A retrospective review of 112 geriatric patients who underwent major abdominal emergency surgery between 2004 and 2008 was performed. Using patients' data APACHE II, ODIN, SAPS II expanded, POSSUM, Manheim peritonitis and Charlson comorbidity index, Goldman and ASA scores were calculated. Sensitivity, positive predictive value and Odd's ratio were evaluated predicting the mortality for these scoring systems.
Results: The overall mortality rate for our patients was found to be 34%. Mortality rate for the patients with incurable surgical disease was 12% and the mortality with the ability to have survived under ideal circumstances with improved surgical management was 22%. APACHE II scores [odds ratio(OR), 4.00; 95% confidence interval (CI), 2.80–5.19; p = 0.0001] predicting mortality under%40 and POSSUM scores (OR, 4.43; 95% CI, 3.06-5.80; p = 0.0001) predicting mortality under%60 had significant independent risk factor for the mortality.
Conclusion: APACHE II scores predicting mortality under 40% and POSSUM scores predicting mortality under 60% had a higher sensitivity and positive predictive values for the given data and we consider using these two scoring systems for our clinic for the prediction of the mortality.
Author to editor: Özet 250 kelime ile sınırlı olduğu için çalışmadaki tüm veriler özete dahil edilememiştir. Mortaliteyi öngörmede kullanılan faklı skorlama sistemlerinin detaylı bir analizi bu çalışma ile gerçekleştirilmiştir. Konu ile ilgilenenler açısından ilginç bulunabilecek istatistik ağırlıklı bir çalışmadır.

39 Our Clinical Experience with Vacuum Asisted Closure Therapy

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Aim: Vacuum asisted closure (VAC) has been increasingly used to facilitate wound healing in general surgery. The aim of this study is to share our experiences and outcomes using VAC for the management of difficult wounds.
Materials and methods: A retrospective reveiw of consecutive for 139 patients treated with VAC therapy was performed. Therapy was started by the indication of staff surgeons. Demographics, indications, length of the therapy, hospital stay, costs, and complications were reported for each patients.
Results: From January 2005 to September 2008, 139 patients treated with VAC therapy for deep abdominal wound infections (n = 105), gastrointestinal fistulas (n = 8), open abdomen (n = 18), fournier's gangrene (n = 6), soft tissue injury (n = 1), decubitus wound (n = 1). The mean of dressing changes was 2.44 (min = 1 – max = 32). 99 of 139 patients underwent delayed secondary closure, 6 patients required a split thickness skin graft. Five incisional hernia were observed in follow-up. The mean cost was 1660.59 TL (min: 285 – max: 15410).
Conclusion: VAC therapy is a safe, simple, and effective technique to facilitate wound healing. Its advantages are less frequent dressing changes, less pain, high degree of patient tolerance, and decrease of personnel work load. These advantages can compensate its high cost.

40 Effect of Erythropoietin in an Experimental Model of Ischemic Colitis

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Background: Erythropoietin(Epo), a hormone produced by the kidney that promotes the formation of red blood cells in the bone marrow, is considered anti-inflammatory, anti-apoptotic, angiogenetic, and sitoprotective. In this study, erythropoietin is examined on an animal model for ischemic colitis (IC) to detect its possible potential benefits.
Methods: Thirty female Wistar albino rats weighing 250–300 g were randomized into three experimental groups as follows: in Group 1, animals were sham operated (n = 10) and received tap water; in Groups 2 and 3, the rats underwent a standardized surgical procedure to induce IC (n = 10 in each group). Group 2 animals served as the controls, receiving only tap water, while Group 3 animals received 3000 IU/kg eritropoetin as a single dose. All animals were sacrificed 72 h after devascularization. Colonic malondialdehyde (MDA) levels, glutathione (GSH) levels, Nuclear factor kappa B (NF-B) of the sacrifised rats was measured. CD-34 and c-kit were evaluated by the immunohistochemical examination of the colonic tissue.
Results: Colonic ischemia significantly increased the colonic MDA levels, NF-B, and TNF alfa in comparison to control group. Epo treatment was associated with increased GSH levels, decreased MDA levels and NF-B activity. Histopathological examination revealed that the intestinal mucosal structure was preserved in the Epo treated group. In addition to this, treatment with Epo significantly increased CD-34 and c-kit (stem cell) when compared to ischemic colitis group.

41 Secondary Postoperative and Tertiary Peritonitis: is there such a Difference?

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Introduction: Tertiary peritonitis (TP) is a severe and persistent intrabdominal infection after secondary peritonitis, without perforation, necrosis or abscess. It has been associated with higher mortality than secondary peritonitis. The aim of this study was to analyze differences among patients re-operated for secondary postoperative peritonitis (SPP) or TP.
Methods: Between 01/2004 and 01/2008, 127 postoperative peritonitis were re-operated on. There were 104 SPP and 23 TP. We analyzed data regarding patient characteristics, current diagnosis, severity scores, bacteriology and hospital stay. Main variable was mortality.
Results: Patients with TP were younger (58 ± 15 vs. 66 ± 14; p = 0.02). Corticotherapy was the only co-morbidity more frequent in TP (p = 0.01). Patients with TP had higher ASA (p < 0.001) and

P-Possum ($p < 0.01$) scores in the index surgery. Malignancy was the most frequent initial diagnosis in patients with SPP and benign diseases in TP. There were no differences on the interval between operations (11 ± 14 days TP vs. 10.8 ± 8 days SPP; $p = 0.9$) neither in the number of previous laparotomies ($p = 0.2$). TP was associated to emergency index surgery ($p = 0.01$) and ICU hospitalization ($p < 0.001$), mechanical ventilation ($p = 0.0001$) and vasoactive drugs ($p = 0.002$). There were no differences in any of the clinical and biochemical parameters analyzed, neither in SIRS ($p = 0.08$) or P-Possum scores after relaparotomy ($p = 0.13$). We found no differences regarding mean hospital stay (48 days TP vs. 45 days SPP; $p = 0.7$) and mortality rate (30% in SPP vs. 21% in TP; $p = 0.43$).
Conclusions: Although certain differences exist, the clinical course of postoperative peritonitis seems to depend more on factors other than their secondary or tertiary origin.

42 Fournier'S Gangrene: Current Approaches

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Aim: Eleven patients treated due to Fournier's gangrene during period of 2003 and 2008 in our clinic are retrospectively evaluated.
Methods: The patients are evaluated by age, gender, aetiological factors, predisposing factors, lesion sites, results of bacteriologic cultures, number of debridements, length of hospitalisation and treatment methods.
Results: There were five female and six male patients with a mean age of 65.1 years. Etiological origins were perianal abscess (36.4%), Bartholin abscess (9%), rectal tumors (18.2%), ulcerative colitis (9%), and hydraadenitis suppurativa (9%). In one case no etiological factor was found. Colostomy was done for fecal diversion in 5 cases and two cases had flexi-seal application for fecal diversion. Preoperatively wound scrabbings were obtained from all of the patients. In the majority of patients (n = 6) a mixture of causative microorganisms were isolated.The mean of number of surgical debridement was 7. Negative aspiration closure system was used in three patients.The mean hospitalization of patients which used negative aspiration system plus flexi-seal for fecal diversion was 14.2 days. There is no morbidity and mortality in this group. The overall mortality rate was 27.2% and the mean hospital stay was 20.1 days.
Discussion: Usage of negative pressure wound drainage pump accelerates formation of granulation tissue by keeping wound dry and reduced the number of debridement. Fecal diversion with flexi-seal abandoned the colostomy and keeps the wound region clean. Usage of flexi-seal plus negative pressure aspiration system with adequate debridement decreases mean hospital stay, and morbidity and mortality.

43 Our Five-year Experience in Fournier's Gangrene

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Background: Fournier's gangrene (FG) is defined as a rapidly progressive, gangrenous polymicrobial infection of the external genitalia, perineum, or abdominal wall. It is still associated with high mortality rates, despite aggressive antibiotic therapy and surgical debridement. In this report, we aimed to present our series of patients with FG.
Methods: Patients who were managed with a diagnosis of FG in the emergency unit, between January 2004 and January 2009 were included. Patients' demographic data, predisposing factors, type of surgical procedures, length of hospital stay, and prognosis of the patients were retrospectively evaluated.
Results: Twenty-one patients (14 male; 66%) were treated with a diagnosis of FG in the emergency unit. The mean age was 52 years (16–72). Diabetes mellitus was the most prominent predisposing factor which was identified in 11 patients (7 male and 4 female). Other factors included previous surgery (pelvic, abdominal, perianal) in five (23%), malignancy in four (19%), chronic renal failure in three patients (14%) and trauma in one (5%). Emergent debridement was performed in all patients. Additionally, six patients (29%) underwent loop colostomy. The average length of hospital stay was 25.5 days (13–53). Nine patients (43%) were followed in the intensive care unit, as septic complications developed. Three patients (14%) died due to multi-organ failure that was secondary to sepsis.
Conclusion: Urgent surgical debridement and antibiotherapy should be considered in case of FG, in order to decrease the mortality and morbidity rates, especially in diabetic patients.

44 Preoperative Risk Factors for Mortality after Relaparotomy: Analysis of 256 Patients

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Introduction: The aim of this study was to analyze preoperative mortality risk factors after relaparotomy for abdominal surgery at a unit of General Surgery in a University Hospital.
Methods: 316 relaparotomies were performed in 256 patients between 1/2004 and 1/2008. We analyzed data from computerized medical charts about past medical history, first operation data, clinical and biochemical parameters previous to re-operation.
Results: Indications for relaparotomy were peritonitis, bleeding, abscess, exploratory laparotomy and wound disruption. Overall mortality was 27%. Mortality after single relaparotomy was 20 versus 44% for 2-or-more re-operations ($p = 0.03$). Mortality was associated with age ($p < 0.0001$), past history of cardiovascular disease ($p = 0.03$), active malignancy ($p = 0.03$) and previous treatment with platelet anti-aggregants ($p = 0.03$). Initial surgery ASA score ($p = 0.008$) or the presence of an anastomosis ($p = 0.04$) were also associated with mortality. Preoperative data associated with mortality were number of SIRS criteria ($p = 0.009$), suture dehiscense ($p = 0.01$), presence of ileus ($p = 0.01$), positive blood cultures ($p = 0.009$), mechanical ventilation ($p < 0.001$), artificial nutrition ($p = 0.01$), antibiotics ($p = 0.01$) or vasoactive drugs ($p < 0.0001$), tachycardia ($p = 0.01$) or abnormal body temperature ($p < 0.001$). High WBC count ($p = 0.008$), high bilirrubin levels ($p = 0.03$) and low albumin ($p < 0.001$) or prothrombin time ($p < 0.001$) were also associated with mortality. Multivariate logistic regression analysis isolated age ($p = 0.02$), abnormal body temperature ($p = 0.02$) and need for mechanical ventilation ($p = 0.004$) as independent preoperative variables predictive for mortality after relaparotomy.

Conclusions: Advanced age, the presence of either fever or hypothermia, and the need of mechanical ventilation are preoperative risk factors associated with mortality after relaparotomy and should be considered when planning re-intervention.
Editor to self: Seçilmiş bildiri

45 Human Experimental Endotoxemia as a Model for SIRS Induced by Trauma

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Introduction: An overwhelming innate immune reaction underlies the pathogenesis of inflammatory complications (e.g. ARDS and MOF), which frequently complicate the clinical course after polytrauma. Better understanding of this inflammatory response is necessary to adjust therapy. Investigating the trauma-induced innate immune response is hampered by heterogeneity of injuries, received (blood) products and lack of baseline values.
We compared the innate immune reaction during experimental endotoxemia to that of trauma patients. We tested if this human model of acute systemic inflammation resembles acute inflammation evoked by trauma. We compared phenotype of neutrophils as part of the final common pathway in the innate immune response.
Methods: *E. coli* polysaccharide (LPS, 2 ng/kg) was injected intravenously in 10 healthy volunteers to induce systemic inflammation. Blood samples were withdrawn before LPS-challenge, and at 3 and 24 h. Values of inflammation model were compared to those of 12 trauma patients, Blood samples were withdrawn approximately at 3 and 24 h after injury. Blood samples of eight healthy volunteers were used for baseline values. Receptor expression was measured using FACS.
Results: Both groups showed a remarkable decline of activated FcgammaRII expression at 3 h after onset of inflammation. While expression remained low in the trauma group it was partly restored after LPS-challenge. Similar findings were made with regard to expression of chemokine receptors CD88, CXCR1 and CXCR2 albeit to a lesser extent.
Conclusion: Experimental endotoxemia can be used as a model for innate immune response after trauma, which allows detailed testing of novel therapeutics to treat systemic inflammation after trauma.
Editor to self: Seçilmiş bildiri

46 Minimally Invasive US-guided Drainage of Perianal Abscesses

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Background: Perianal abscesses (PA) represent a common acute surgical problem. Standard treatment is effective but painful and troublesome. US-guided percutaneous aspiration (USGPA) of abscesses is widely accepted, but was never described for PA. We performed a prospective study to evaluate USGPA in PA.
Patients and methods: From October 2005, patients (pts) with PA were prospectively evaluated with transcutaneous US performed by US-trained surgeons. Self-drained and complex abscesses were excluded. Nine pts underwent USGPA under local anesthesia and sedation. Complete emptying of the abscess was confirmed by US. Lavage with hydrogen-peroxide and saline was possible and allowed to exclude primary orifice of a fistula. Antibiotics were prescribed for 5 days. Clinical and US follow-up was scheduled at day 2, day 7 and as clinically needed. All pts were controlled at day 30 and received a phone follow-up.
Results: All pts had short-term recovery without need for surgical drainage. All pts referred immediate relief and were discharged. Four pts (44%) required a second aspiration. In one patient with large recurrent abscess a 8 Fr catheter was left for 2 days. One patient recurred after 19 months and was treated again by USGPA. A total of 14 procedures was performed. Phone follow-up excluded other recurrences. Pts were able to return to common activities after 1–4 days. Mean number of outpatient visits per patient was 2.3.
Discussion: USGPA of PA revealed to be effective in selected cases. Advantages on discomfort, pain, return to activity, medications and costs were impressive. A larger series could confirm these preliminary results.

47 Open Vs Laparoscopic Appendectomy in Emergency: Comparison of Outcomes

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Introduction and objectives: This study investigates outcomes of open and laparoscopic appendectomies performed at Emergency Department of San Raffaele Scientific Institute, Milan
Methods: We retrospectively analysed clinical records of 192 patients undergoing appendectomy, between January 1st, 2007 and December 31st, 2008. Differences were evaluated with the chi-square test, and Student's t test
Results: 42 patients underwent a traditional appendectomy (group A) and 150 patients underwent a laparoscopic approach (group B). 57% of patients were male in group A; 48% in group B. Average age was 32.1 in group A and 32.7 in group B. Overall morbidity was 14.2% in group A and 10% in group B (p = n.s.): abscess rate was 7.1 and 6%, respectively, in group A and in group B (p = n.s.). Wound infections occurred in 9.5% of cases of group A and in 2.5% in group B ($p = 0.14$). Other complications occurred in 7.1 and 3.3%, respectively, in patients undergoing open versus laparoscopic intervention ($p = 0.51$). Readmission rate was 0% in group A and 1.3% in group B (p = n.s.). The average length of hospital stay was 4.8 days for patients undergoing traditional approach and 3.5 days in the group of patients who underwent laparoscopy ($p < 0.001$). Reoperation rate was 0% in group A and 1.3% in group B (p = n.s.). Mortality rate was 0% in both groups. Conversion rate was 1.3% in the laparoscopic arm.
Conclusions: In our experience laparoscopic appendectomy is safe and associated with maybe lower postoperative morbidity rates but surely with shorter hospital stay than open procedures

Author to editor: This abstract shows the experience of a High volume Center in the treatment of acute appendicitis and the impact of laparoscopy on clinical outcomes

48 Efficacy of Early Laparoscopic Procedure for the Treatment of Acute Cholecystitis

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Background: Despite the well-accepted success of laparoscopic cholecystectomy in elective treatment of cholelithiasis, the efficacy and timing of this technique has been subject to debate in the setting of acute cholecystitis.
Methods: We retrospectively reviewed patients observed at Emergency Department for acute cholecystitis from January 2007 to December 2008, comparing results of early versus delayed surgical treatment. Patients with associated common bile duct lithiasis or concomitant pancreatitis were excluded from the observation. 104 patients fulfilled the study criteria. 59 patients (group A) underwent laparoscopic procedure within 24 h from Hospital admission, while 45 patients (group B) had a delayed treatment (more than 72 h after hospital admission)
Results: the two groups were well balanced for baseline characteristics. Mean operative time was 98 min in group A versus 116 min in group B (p = ns), the conversion rate to an open procedure was 3% in group A and 8% in group B (p = ns). Mean postoperative hospital stay was 2.97 versus 2.90 days in group A and B, respectively (p = ns). 22% of patients in group A and 24% in group B (p = ns) developed postoperative complications.
Conclusions: Early laparoscopic cholecystectomy is a safe, effective technique for treatment of acute cholecystitis. No advantages were registered, in our experience, in delayed operation. Furthermore, the significantly longer preoperative hospital stay in group B should drive to an increase of per-patients costs.

49 The Effects of Different Pressure on Lung Histopathology in Rat Abdominal Compartment Syndrome Model

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Background and Aim: Patients with primary ACS will often develop a secondary acute respiratory distress syndrome (ARDS). Mechanic pressure is mainly responsibe in pulmonary findings in ACS. We aimed the role of aspiration of gastric contents into lower airways in pulmonary complications of ACS.
Methods: The 50 rats were initially divided into five groups (Group I–V), and then these groups were divided again into two groups if they are unfed (Group Ia–Va) or fed (Group Ib–Vb). In animals in group I-V intraperitoneal pressure (IAP) was applied as follows: 15, 20, and 30 cm H_2O by instillation of isotonic saline solution.
Results: Total scores of lung histopathologic findings were concordant with the degree of IAB. When the total scores of histopathologic findings in lungs were compared for each applied IAB with control group, the scores were higher in fed animals than unfed animals. Histopathologic findings in lungs were observed when increased-IAP to 15 mmHg (20 cmH_2O) which was accepted as cut-off value. The comparison of the scores of histopathologic findings in two groups in which the applied IAB was lower then the cut-off value were not significantly different from the control group. However comparison of the scores of histopathologic findings equal to or above 18 mmHg were significantly higher then the control group.
Conclusion: Our results show that that pulmonary aspiration related with passive regurgitation in ACS has a substantial influence on histopathologic findings seen in this disorder.
Editor to Self: Secilmiş bildiri

50 Emergency Surgery and Delayed Abdominal Closure: Results in 16 Cases

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Delayed abdominal closure (DAC), in emergency surgery, must be economical, fast to execute and easy to maintain, allowing second look and definitive closure, with minimal prejudices to the abdominal wall. As an alternative to the vacuum closure systems, the AA have been utilising the Rotondo and Schwab technique (IATSIC-DSTC Course), by the interposition of a plastic towel between abdominal contents and wall. DAC has been utilised in 16 patients (8 male, 8 female, 2005–2008), median age of 51 (32–90). In five, after abdominopelvic packing for hypovolemic shock conditions. In 11, after mediastinal and peritoneal decontamination procedures and lavage for septic situations with actual or potential compartment syndrome: three from acute necrotizing pancreatitis, six from dehiscent digestive sutures and two from strangulated hernias. Four patients died in the open abdomen situation, one from pancreatitis and three from dehiscent sutures. Primary abdominal closure has been possible in 11: in the 5 cases of packing and in 6 of the 7 of the cases of sepsis. In one case of pancreatitis it has been possible a secondary closure. DAC is now accepted like a safe procedure in damage control and compartment syndrome conditions which contributes to ameliorate the results in life threatening situations.

51 Management of Enteric Fistulas in the Open Abdomen Using Vacuum Assisted Closure Therapy

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Introduction and objectives: The open abdomen (OA) can result from the operative management of trauma, peritonitis and the abdominal compartment syndrome. Enteric fistulas (EFs) in an OA occur in 25% of patients and are associated with a mortality of more

than 40%. This report describes our experience with Vacuum Assisted Closure (VAC-)therapy in the management of EFs in an OA.
Materials and methods: Nine patients with seventeen high output EFs in an OA were treated with VAC-therapy from January 2006 till January 2009. The abdominal wound was covered with fatty gauzes. Small EFs were covered with a patch of hydrophilic polyvinylalcohol foam. The entire abdominal wound was covered with polyurethane foam which promotes granulation and seals of the OA preventing further spillage of enteric contents. Continuous negative pressure at -125 mm Hg was applied. For large fistulas with protruding mucosa a hole was cut within the polyurethane foam and an ostomy bag was placed over the fistula mouth. Surgery with enterectomy was planned 6–10 weeks later.
Results: The VAC-dressing was changed every 4 days. Three EFs closed spontaneously. Time between onset of fistulisation and surgery was 52 days (median 51 days). No additional fistulas occured. One patient died postoperatively.
Conclusions: Although previously considered a contraindication to VAC-therapy, the OA with EFs can be managed with VAC-therapy. A taylored application of the foam and a reduced negative pressure seem to allow a safe and reliable way to manage EFs. Partial enterectomy and abdominall closure is possible after several weeks.

52 Continuous Microdialysis in Critical Intra-abdominal Hypertension: a Novel Approach to Trace Metabolic Organ Derangements Before they are Detectable by Conventional Monitoring Techniques

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Introduction: It was the aim of the study to analyze the potential value of microdialysis in the rectus abdominis muscle (RAM) compared with conventional monitoring parameters currently in clinical use for the detection of the abdominal compartment syndrome (ACS).
Methods: 30 pigs were anaesthesized, mechanically ventilated and continuously monitored. Microdialysis was performed in different abdominal organs, the RAM and cervical muscle (distant reference) for glucose, lactate, lactate–pyruvate ratio (LPR) and glycerol. IAH was maintained for 6 h. Three groups were analysed: control (A), IAH 20 mmHg (B) and 30 mmHg (C).Cardiopulmonary parameters, urinary output, blood gas analysis and venous lactate were recorded.
Results: Mean arterial pressure and abdominal perfusion pressure remained above clinically defined thresholds during the experiments for groups A and B. In contrast, group C demonstrated a persistent decrease below these thresholds. Significant reduction of urinary output was only seen in group C. Lactate levels also remained within physiological range in all groups. In contrast, microdialysis revealed a significant increase of LPR in all monitored organs in groups B and C, indicating ischemia and energy failure. Of interest, LPR in the RAM showed a significant increase already after 2 h of IAH in group B.
Conclusion: Microdialysis of the RAM detected local metabolic derangements in animals with IAH of 20 mmHg while clinically established monitoring tools failed to show organ dysfunction/tissue ischemia. Our data suggest that continuous microdialysis in the RAM may represent a promising tool for early detecting IAH-induced metabolic derangements before manifestation of clinically apparent ACS.
Editor to self: Seçilmiş bildiri

53 Decompressive Subcutaneous Linea Alba Fasciotomy for Abdominal Compartment Syndrome in Severe Acute Pancreatitis

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Introduction: To avoid morbidity associated with open abdomen, subcutaneous linea alba fasciotomy (SLAF) was introduced for management of abdominal compartment syndrome (ACP) in severe acute pancreatitis (SAP). We analyzed the efficacy and safety of SLAF as a surgical decompressive technique.
Methods: A retrospective study of a 3-year period identified 10 patients with SAP and ACS undergoing SLAF. Mean age was 46 (range 33–61) years, 9 were male and 9 had alcohol-induced SAP. SLAF was performed 1–17 days post-admission, in 6/10 cases within 48 h.
Results: The mean (range) preoperative intra-abdominal pressure (IAP) was 31 (23–45) mmHg and immediate postoperative IAP 20 (10–33) mmHg. The mean decrease was 10 (2–17) mmHg and the decompressive effect was considered sufficient in 7/10 cases. Two of these developed recurrent ACS and required completion laparotomy, as did the 3 with insufficient effect (0–3 days post-SLAF). The mean preoperative SOFA score was 12 (4–17) and 11 (1–20) 1–5 days postoperatively, the decrease was > 5 in 3 patients with successful SLAF. Eventually four patients underwent necrosectomy, two following sufficient SLAF. The overall mortality and morbidity rates were 4/10 and 3/10, no complications were attributed to SLAF itself. Mean hospital stay was 35 (11–70) days. Of the survivors, fascial closure was achieved in two, and planned hernia in four (two with split-thickness skin graft and two with post-SLAF hernia).
Conclusion: SLAF is a safe decompressive technique in SAP-related ACS. It is effective in about 50–70% of cases, but some require completion laparotomy and/or necrosectomy later on.

54 Managing the Open Abdomen with Vacuum-Assisted Closure Therapy: Retrospective Evaluation of 44 Patients

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Background: The authors reviewed their experience in the management of ''open abdomen'' using the vacuum-assisted closure device (VAC), in order to assess its morbidity particularly in terms of fistula, and the outcome of abdominal wall integrity.

Methods: Between March 2007 and December 2008, 44 patients were managed with VAC technique (KCI, San Antonio). The mean age was 54.8 (28–87), and M/F sex ratio was 1/4. Indications were severe abdominal sepsis in 12 patients, mechanical obstruction due to colorectal cancer in 10 patients, pancreatitis in 4 patients, posttraumatic abdominal compartment syndrome 8 patients, evisseration in 4 patients, enterocutaneous fistule in 6 patients.
Results: As morbidity there were 2 fistulaes and 2 intraabdominal abscess in all 44 patients. Four of the patients were died with concomitant disease. There was no mortality related using VAC system. Thirty five patients (80%) was underwent a delayed primary closure, five underwent secondary healing by granulation, and four underwent split thickness skin grafting.
Conclusions: Treatment of the open abdomen with abdominal V.A.C. system is safe with good long-term quality of life. Abdominal vacuum-assisted closure (V.A.C.) systems for treatment of open abdomens can be predominantly use for surgical patients with a high primary fascial closure rate.

55 Can Severe Liver Injuries be Managed Nonoperatively?

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Introduction: The current trend of nonoperative management of even severe liver injuries has recently been challenged. The study aim was to analyze the outcome of severe liver injuries with emphasis on treatment modality and liver-specific outcome.
Methods: A retrospective study of a 10-year period identified 144 patients with Grade III-V liver injuries based on CT and intraoperative (when applicable) assessment. The mean age was 33 (range 10–78) years, 87 (60%) were male and 135 (94%) blunt injuries. Extra-abdominal associated injuries were present in 119 (83%) patients.
Results: Nonoperative management was used in 34/58 (59%) Grade III, 46/66 (70%) Grade IV and 7/20 (35%) Grade V liver injuries. The operative management consisted of perihepatic packing in 20, definitive repair in 27 (10 with nonanatomical resection) and liver exploration with associated injury repair in 10. The mortality rates for nonoperatively and operatively treated patients were 9 and 25% in Grade III, 2 and 25% in Grade IV and 0 and 46% for Grade V injuries, respectively, for a total mortality rate of 21/144 (15%). An AIS 3–5 head injury was present in 18/21 (86%) of the nonsurvivors. Relaparotomy was performed in 25/57 (44%) patients, and complication rates for nonoperatively and operatively managed patients were 19/87 (22%) and 34/57 (60%), respectively.
Conclusion: The majority of grade III and IV and some grade V liver injuries can be safely managed nonoperatively. Of operatively treated patients 1/3 require damage control surgery. Majority of deaths are caused by nonliver injuries.

56 Surgical Outcomes of Severe Hepatic Injury Cases

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Surgical outcomes of severe hepatic injury were retrospectively reviewed. (Methods) Among 567 patients with hepatic injury treated between 1975 and 2005, 247 patients who underwent surgery were included. The study period was divided into early (1975-1992), middle (1993-2000) and late (2001-2005) phases, and type of injury, surgical procedure performed and patients' outcome were retrospectively reviewed. (Results) (1) Percentage of patients undergoing surgery: 70% (161/274) underwent surgery in the early phase, 37% (66/192) in middle and 25% (25/101) in late phase. (2) Timing of surgery: The numbers of patients underwent laparotomy in ER, urgent laparotomy in OR, and delayed laparotomy (after 24 h) were 42 (28%), 111 (67%) and 8 (5%) in early phase; 27 (41%), 33 (50%) and 6 (9%) in middle; and 11 (44%), 14 (56%) and 0 in late phase, respectively. (3) Surgical procedures performed: for type IIIb (JAST grading) cases, hepatectomy was performed in 88% and hepatorrhaphy was performed in 10%, giving a mortality rate of 25% in early phase, 23.5% in middle and 0% in the late phase. For IIIb + IVC/HV cases, hepatectomy was performed in all patients, giving a mortality rate of 60% in early phase, 40% in middle and 33.3% in late phase. (Discussion) With the increase in nonsurgical management, surgical treatment for hepatic injury is performed preferably in patients requiring immediate response, such as laparotomy in ER. The surgical outcome of hepatic injury has been improving, with a survival rate of approximately 90% for type IIIb cases and 60% for IIIb + IVC/HV cases.

57 Unexpected Surgical Returns of the Emergency Department

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Objective: The aim of this study was to assess the unexpected returns (UR) within 1 month of the adult patients and the pediatric trauma patients initially seen in the İstanbul American Hospital Emergency Department.
Design: All URs between 01.01.2005–01.01.2009 were recorded. Initial diagnosis, final diagnosis, initial treatment, final treatment, reason for readmission, and last medical condition were noted.
Results: Eighty eight URs were recorded. Final diagnosis of 46 of these 88 patients were surgical. Forty one of these surgical patients had UR due to error in diagnosis and five due to error in treatment. Fifty two of these 88 patients returned on the same day or the next day, 13 between 2nd and 3rd days, 15 between 4th and 7th days and 7 between 7th and 30th days. Male to female ratio was 1 to 1. Three of the patients were pediatric trauma patients, 71 were between 15-65 years, and 14 were over 65. Missed final diagnosis were: Acute cholecystitis (10), acute appendicitis (10), missed fractures (8), pneumothorax (2) liver mass (2), urethral stone (2), ectopic pregnancy (1), diverticulitis (1), subarachnoid bleeding (1), others (9).
Conclusions: Acute cholecystitis, acute appendicitis, and missed fractures were the most frequent surgical causes of URs after emergency department discharges. Liberal utilization of abdominal sonography and abdominal CT scan may reduce missed acute abdomen in abdominal pain patients and appropriate radiological imaging and meticulous evaluation of the X-rays may reduce unnoticed spinal, pelvic and facial fractures in trauma patients.
Editor to self: Seçilmiş bildiri olabilir

58 The Relation Between Cholangitis Phenomena and Pancreatitis with Choledocholithiasis

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Introduction and aim: Bacteremia sepsis and septic shock might develop rapidly for the patients with infection in bile path. Early diagnosis, surgical treatment and antibiotherapy decrease mortality. In this study, the relation between choledocholithiasis, cholangitis and pancreatitis and treatment methods have been evaluated.
Method: The demographic features, the treatments, the intensity of the illness and mortality rate of the 155 patients in Afyon Kocatepe University General Surgery clinic between the years 2006 and 2009 have been examined.
Results: The average age of the patients is 52.3. While 93 of the patients were women, 62 were men. 18% of them had pancreatitis, 46.4% had choledocholithiasis and 1.2% had cholangitis. Eight of patients had pancreatitis and cholangitis; 24 of patients had choledocholithiasis and cholangitis, 16 of the patients had cholangitis, pancreatitis and choledocholithiasis. 3 patients, had both pancreatitis and choledocholithiasis while 69 patients had medical treatment, 86 patients had surgical treatment. 8 patients died (5,1%). Six of these patients had surgical treatment while the other 2 had conservative treatment, cholangitis component was found for all of them.
Conclusion: Cholangitis is a factor that increases mortality in pancreatitis and choledocholithiasis occasions. The occasions that cholangitis accompanies most is choledocholithiasis

59 Recent Experience with Enterocutaneous Fistula Employing Multimodality Therapy

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Background: Enterocutaneous fistula continues to be a serious surgical problem.
They are related with major electrolyte imbalances, malnutrition and delayed tissue healing. Our recent experience with enterocutaneous fistulas is reviewed hereby.
Methods: We analyzed the charts of all patients with enterocutaneous fistula from January 2006 to December 2008. Fistulas were assessed for localization, type, output, etiology, use of somatostatin analog and fibrin glue, nutritional support, type of surgical intervention, wound VAC, and endoscopic findings.
Results: We identified 20 patients. Fistulas were localized as gastroduodenal in five patients, jejuno-ileal in seven, and colonic in eight. There were 11 enterocutaneous and 9 entero-atmospheric fistulas. Endoscopy was performed in 12 patients. Output was low (< 400 ml) in 14, whereas high (> 400) in 6 patients. Seventeen patients developed fistulas due to iatrogenic reasons, six patients had an underlying malignancy, and three patients developed fistulas after pancreatitis. Somatostatin analogs were used in 12 patients. Conservative treatment was performed in 10 patients, primary surgical intervention in 3 patients, and secondary surgical intervention in 7 patients. Fibrin glue was used in 9 patients and was of benefit to 3. Healing was achieved in 18 patients (90%) after mean 19.3 days (range 14–75). Two (10%) patients were died.
Conclusion: There appears to be no strict rule for treatment of enterocutaneous fistulas. Liberal use of endoscopy, fibrin glue as well as restorative surgical intervention all play a major role, and should be employed selectively on an individual basis in the management of enterocutaneous fistulas.

60 Evaluation of the Trauma and Neurotrauma Patients those were Admitted to Neurosurgery and Anesthesiology Intensive Care Unit Between 2004 and 2009

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Aim: In this study we aimed to evaluate the patients whose admitted to neurosurgery and anesthesiology intensive care unit (NAICU) between 2004 and 2009.
Matherial and methods: The patients whose admitted to NAICU between 2004 January 1 and 2009 January 1 evaluated retrospectively. Diagnosis, age, gender, mortality rate, staying day in ICU of the all patients were determined. Head traumas were obtained in trauma and multitrauma patients.
Results: Total number of the patients those are admitted to NAICU were 1,768 and 716 of them because of head trauma (40.5%). 438 of the 716 cases were pure head traumas (61.2%) or politraumas accompanied with head traumas (HT).The rate of HT was 24.8% of all traumas.There were 351 men, 365 women. Mean age of men were 44.32 and women were 45.17. Staying ICU were obtained as 7.48 days. The mortality rate was found as 43.72% (313 cases). Operated cases were 350 (48.88%) and the cases followed without any operation were 366 (51.12%). Mortality rate between operated cases were 49.14% (172) and nonoperated cases were 55.46% (203). HT cases were evaluated by Glascow Coma Scale (GCS) as severe (GCS $\leq$ 6),intermediate (GCS = 7–10),moderate (GCS $\geq$ 11).The cases which had GCS $\leq$ 6 were 39(8.9%). Operated cases were 24 (61.54%) and 19 of them dead (79.17%). The mortality rate of operated cases (37 cases) which had GCS = 7–10 were 45.96% (17cases). The number of cases were 315 which had GCS $\geq$ 11 and the mortality rate of operated cases (87cases) were 18.39% (16cases) at this group. The mortality rate of nonoperated cases (228 cases) were 11.40% (26 cases).
Conclusion: The higher rate was HT cases when the trauma patients evaluated and mortality rate of nonoperated trauma patients were higher then operated trauma cases.
Author to editor: This study send for giving knowledge about traumas which admitted to Kocatepe University School fo Medicine at a period of 51 months.

61 The Evaluation of Acute Pancreatitis in Terms of Conservative and Surgical Treatment Retrospectively

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Introduction and Aim: This study has been carried out to compare conservative and surgical treatment for the acute pancreatic.
Method: The treatment processes and radiologic outlook of the patients with acute pancreatitis in Afyon Kocatepe University General Surgery Clinic between the years 2006 and 2009 have been observed retrospectively.
Results: The average age of the 52 patients with acute pancreatic is 54 and 67.3% of them were women. While conservative treatment was applied on 29 patients, surgical treatment was applied on 23 patients. While the etiologic reason was based on a known source for the 55.7% of the patients, no reason was found for the 44.3% of the patients. ERCP was applied for six patients within the scope of conservative treatment. Necrotizing pancreatitis existed in five patients. Surgical debritment and abdominal washing were applied for four of the patients. Acute pancreatitis were diagnosed for the 51.9% of the patients after tomography. One of the patients which had surgical treatment died (0.23%). There was no mortality for the patients having conservative treatment. There was not a substantial distinction between the two treatment methods in terms of mortality. Ten of the patients had laparoscopic cholecystectomy, ten of the patients had open cholecystectomy (one of the patients with abdominal washing), one of the patients had choledochal exploration with t tube drainage and open abdomen.
Conclusion: The conservative treatment should be prefered though the treatment ways of acute pancreatitis under discussion. There is not a distinction between the tow methohds in terms of mortality.

62 Scoring Systems in Acute Pancreatitis

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Our aim was to compare to efficiancy of different scoring systems as a prognostic indicator in acute pancreatitis.
Medical records of 234 patients (125 female) with mean (range) age of 55 (19–92) years who are diagnosed as acute pancreatitis during 5 years were evaluated according to age, sex, etiologic factors, SIRS, APACHE II, Balthazar scores and Ranson scores at admission and at 48 h in order to evaluate the correlation with mortality. The commonest cause was gallstone seen in 157 (67%) cases followed by idiopathic in 48 (20%), alcohol in 24 (10%) and other in 4 (1%). There were 11 (4,7%) cases with mortality and 99 (42%) patients underwent operation. In 223 survivors mean (SD) age was 62 (21) years, SIRS score was 0.78 (1), Ranson scores at admission was 1.4 (1.2), Ranson scores at 48 h was 1.1 (0.8), APACHE II score was 6.2 (4.1), Balthazar scores was 2.6 (1.3). In the nonsurvivors group of 11 (4,7%) cases, the mean age (SD) was 55 (16). Admission SIRS score was 3.4 (0.54), APACHE II score was 13 (3.6), Ranson score was1.2 (0.8), Ranson scores at 48 h was 3.3 (0.5).
When both groups were compared SIRS score, APACHE II score at the admission and Ranson score at 48 h were found to be statistically significant ($p < 0.001$, $p = 0.001$, and $p = 0.001$, respectively), and no differences observed in reference to Balthazarscore, hospital stay and ICU stay ($p > 0.05$).
Although admission SIRS score, APACHE-score and 48 h Ranson score were all found to be important prognostic indicators, SIRS seems better and most promising indicator as it is easy to use and not requires sophisticated tests.

63 The Effects of Disease Severity and Necrosis Ratio on both Exocrine and Endocrine Dysfunction in Acute Pancreatitis

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Aim: To evaluate the effects of disease severity and necrosis ratio on pancreatic exocrine and endocrine functions in acute pancreatitis.
Patients and methods: 109 patients diagnosed and treated as acute pancreatitis between March 2003 and September 2007 with at least 6 month follow-up included in this study. Patients were classified according to severity of the illness, necrosis ratio, and localization. Subjective clinical evaluation and faecal pancreatic elastase-I (FPE-I) with ELISA in the stool were studied for exocrine function evaluation, and Oral Glucose Tolerance Test (OGTT) was completed for endocrine dysfunction. The correlation of disease severity, organ necrosis, necrosis ratio, and localization with exocrine and endocrine dysfunction were investigated.
Results: There were 58 male, 51 female patients and mean age was 56.5 ± 15.7. Of the patients, 35.8% were severe acute pancreatitis (SAP) and 27.5% had pancreatic necrosis. Exocrine dysfunction was identified in 13.7% of the patients (17.9% were SAP, 11.4% were mild acute pancreatitis) and 34.7% of the patients had endocrine dysfunction. In patients with SAP, necrotizing acute pancreatitis (NAP) and pancreatic head necrosis, FPE-I levels were relatively low (330 ± 170, 292 ± 178, 189 ± 82 μg/g stool, respectively, $p < 0.05$). Forty percent of the patients who had necrosectomy were with exocrine dysfunction. Endocrine dysfunction was more significant in patients with SAP and NAP (56.4 and 66.6%, respectively, $p < 0.001$). Endocrine dysfunctions were determined in all of the patients who had necrosectomy.
Conclusions: Patients with SAP, NAP, pancreatic head necrosis and necrosectomy should be pursued for pancreatic functions in the long term.
Editor to self: seçilmiş bildiri

64 Laparoscopic Appendectomy: our Experience in 1075 Cases

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Background and objectives: Laparoscopy is commonly used for the diagnosis and treatment of abdominal emergencies. Hereby in this study we have presented our results in laparoscopic appendectomy.
Methods: Data conducted between January 1997 and January 2009 were analyzed to evaluate the results of laparoscopic appendectomy procedure. The demographic data, clinical and surgical findings, post operative hospital stay, complications and short term follow up data were analyzed retrospectively.
Results: Laparoscopic appendectomy (LA) was performed due to acute appendicitis (AA) in 1,075 patients (590 men; 55%). Mean age was 29 (10–87). Pre-operative diagnosis was AA and acute abdomen in 919 (86%) and 156 (14%) patients, respectively. Surgical exploration revealed phlegmonous AA in 810 (75%), gangrenous AA in 138 (13%) and perforated AA in 75 patients (7%); appendix was

normal in 52 patients (5%). The appendix was divided by endo-loop in 96%, intracorporeal suturing in 3% and endo GIA in 1% of the patients. The meso-appendix division was performed by endoclip (43%), Ligasure (54%) and bipolar cautery (3%). Conversion to open procedure rate was (7%). Mean operating time was 42 min (20–150). Mean hospital stay was 1.9 days (1–25). Major complications were as follows: right iliac artery injury (n = 1), bladder injury (n = 1), post operative bleeding (n = 3), intraabdominal abscess (n = 9), appendiceal stump leakage (n = 4). Minor complications were trocar site infection (n = 32) and mechanical bowel obstruction (n = 3).There was no mortality.
Conclusion: LA is associated with considerably decreased morbidity and might be considered as the treatment of choice in AA.

65 Endoscopic Gastrointestinal Stenting in Emergency Service

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Background: Gastrointestinal stenting is increasingly employed to relieve passage. It provides a palliation in inoperable cases or anastomotic strictures. In left-sided colonic and rectal obstruction, it allows decompression for a definitive surgery to be performed.
Methods: Between May 2006 and December 2008, 30 patients with acute mechanical intestinal obstruction were treated with endoscopic stenting. Localization of malignancy, stenting complications, and surgical interventions were assessed.
Results: There were a total of 30 patients undergoing gastrointestinal stenting. Sixteen patients received gastroscopic stents, four patients with esophageal, eight patients with gastric, four patients with duodenal tumors. Stenting failed in five patients (31%), and surgery was required in four patients. Nine patients were referred to adjuvant oncologic treatment. Fourteen patients received colonoscopic stents; in one patient with a left-colon, in nine patients with sigmoid colon, and in four patients with rectal tumors. Stenting failed in seven patients (50%), and six patients were operated emergently with a need for stoma in two patients. Ten patients were referred to adjuvant oncologic treatment. No patient was died related with procedure.
Conclusion: Gastrointestinal stenting is a useful adjunct in the treatment of patients presenting with acute mechanical intestinal obstruction for palliation as well as for decompression before definitive surgical therapy.

66 Our Clinical Experience in Internal Hernias: Report of Seventeen Patients

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Introduction and Objectives: Internal hernia (IH) is a rare entity which occurs due to the protrusion of an intraabdominal viscus through a normal or abnormal mesenteric or peritoneal aperture. IH can either be acquired through a trauma or surgical procedure, or constitutional and related to congenital peritoneal defects. Intestinal obstruction due to IH is very dangerous and lethal because it may be silent, and delay in diagnosis may cause severe abdominal conditions. In this report, we aimed to present 17 patients with IH.
Methods: Seventeen patients who were admitted to our clinic with the diagnosis of IH between January 1990 and January 2009 were included. Patients' demographic data, type of the hernias, type of surgical procedures, length of hospital stay, and prognosis of the patients are evaluated retrospectively.
Results: There were nine male, eight female patients. Mean age of the patients was 51.1 years (15–83). Postsurgical IH were seen in eight, paraduodenal in four, transomental in one, sigmoid mesocolon hernia in one patient, and the remaining three hernias were not classified. Laparotomy was performed in 15 patients, laparoscopy in 1 and conversion to open surgery in 1 patient. Small bowel perforation was found in three patients. Seven patients underwent intestinal resection and anastomosis. Mean length of postoperative hospital stay was 10.4 days (4–20). There was no mortality.
Conclusion: IH is a rare cause of small bowel obstruction in adults and often present with complications. A high index of suspicion may lead to early surgical intervention and reduce morbidity and mortality.

67 The Results of Endoscopic Covered Stent Application for Esophageal Perforations

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Introduction: Esophageal perforation is a serious surgical condition in which delay for surgery results in high mortality. Application of covered stents is an alternative for emergency surgery. The aim of this study is to analyze the results of esophageal stent application retrospectively.
Methods: The clinical data and outcome of 6 patients diagnosed and treated for esophageal perforation by endoscopic stent application between February 2006 and December 2008 were evaluated.
Results: The mean age of these 6 patients was 34 (18–62) and male to female ratio was 3/3. Causes of perforation was mediastinal abscess (n = 1), metal stent application (n = 1), and balloon dilatation (n = 4). Stents were applied immediately after perforation in three patients. Remained three patients were referred from other institutions and the mean time of delay was 4 h (2–8). Perforations were at proximal (n = 1) middle (n = 1) and distal esophagus (n = 4). Self expanding covered metal stents were applied in an appropriate position to bridge perforation area in a fashion to cover minimally 2 cm distal and proximal normal esophageal mucosa to all patients under fluoroscopic control. No contrast leak was observed immediately after application and 48 h later. Patients were interned and observed under intravenous fluid and antibiotic therapy. Except one patient developing transient subcutaneous emphysema no complication was observed. All perforations were closed and the stents were removed at the end of fourth week.
Conclusion: At the early phase of esophageal perforations covered esophageal stent application can be a better alternative to surgery.

68 The Success Rate of Endoscopic Interventions Performed by Surgeons for Upper Gastrointestinal System Bleeding

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Introduction: Upper GI bleedings are serious conditions which may be life threatening. In seriously bleeding cases the failure of the endoscopic interventions makes surgical intervention necessary. The aim of this study is to present the success rate of endoscopic interventions for upper GI bleeding performed by surgeons.
Methods: Clinical data and the outcome of endoscopic interventions made to 359 of 1,943 upper GI bleeding patients admitted to a large community hospitals single surgical endoscopy center between January 2002 and September 2008 were analyzed retrospectively.
Results: Hemostasis with endoscopic interventions was achieved in 336 (95.7%) at initial (n = 231) or at second endoscopy (n = 105). 23 patients underwent emerging surgery. There was no mortality at the patients treated by endoscopic interventions where as seven patients died after surgery (30.4%).
Conclusion: The outcome of surgery is poor in upper GI bleeding. Thus maximum effort should be given to achieve homeostasis by endoscopy. The success rate of endoscopic interventions in this study performed by surgeons is extremely high and satisfying.

69 Analgesia Use in Patients Presenting with Acute Abdominal Pain at the Emergency Department: Current Situation in the Netherlands

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Analgesia use at the emergency department, how evidence-based do we work when dealing with patient with acute abdominal pain?
Based on a pilot at our emergency department we concluded that it is still common practice to withheld a patient with acute abdominal pain from analgesia till examined by a surgeon or resident. This in contrary to evidence presented in literature which show no negative effect of analgesia use on accuracy of diagnosis in patients with acute abdominal pain.
A total of 280 inquiries were send to nurses, physicians and surgeons working at the emergency department of teaching hospitals in the Netherlands. We questioned their standard policy on analgesia use in acute abdominal pain.
A total of 108 completed inquiries were retrieved, resulting in a response rate of 39%. There is a difference between the response of nurses and doctors, 70 versus 30%, respectively. Compared to nurses, doctors are more optimistic about the moment analgesia is given. Remarkable is the result that 46% of patients do not receive any analgesia even after examination by a surgical resident and 25% of the patients have to wait till they are examined by a surgeon is outshining. Patients are still withheld from analgesia till a resident or surgeon examines them even though this is not evidence-based medicine. There is no consensus in the Netherlands on analgesia use in patients with acute abdominal pain in the emergency department setting. A national guideline for patients with acute abdominal pain is recommended.

70 Laparoscopic Versus Laparotomic Appendectomy

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Introduction and objectives: The benefits of laparoscopic appendectomy remain debated in literature.
Methods: This is a monocentric, retrospective study to evaluate the differences between open and laparoscopic appendectomy for length of hospital stay, wound infection, major complications. Retrospective surgical site infection rate evaluation has been possible only for in hospital stay, no further clinical data has been collected regarding outpatient follow-up.
Results: From January 2007 to October 2008 we reviewed 150 patients undergoing surgery for acute appendicitis. 67 patients underwent laparoscopic appendectomy (44.7%) (Group A), 83 patients open appendectomy (55.3%) (Group B). Two different surgical teams, one for laparoscopy and one for laparotomy, performed the procedures. Complicated (perforated or gangrenous) appendicitis were 16 in group A (23.9%) and 28 in group B (33.7%). Mean hospital stay group A was 5.4 days, 4.9 (p = n.s.) group B. Mean hospital stay in complicated appendicitis group (A + B) was 6.2 days, in uncomplicated (A + B) was 4.7 days ($p < 0.05$). Laparoscopic appendectomy was associated with lower wound infection rate (group A 4.5% vs. group B 14.5%) ($p < 0.05$). Infection rate in complicated appendicitis (A + B) was 18.2%, in uncomplicated cases (A + B) was 6.6% ($p < 0.05$). No mortality in both groups has been observed. One conversion in laparoscopic group was reported. No cases of deep surgical site infection have been observed.
Conclusions: Laparoscopic appendectomy seems to be associated to a lower rate of wound infection. Length of hospital stay and rate of major complication seems to be related to gangrenous or perforated appendicitis and not to the surgical technique.

71 The Effect of Methylene Blue on TNF Alpha Levels in a Rat Peritonitis Model

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Methylene blue (MB) has been reported to be an effective agent for preventing peritoneal adhesions. However, its effects on the adhesion formation in peritonitis process are unknown.Aim of this study evaluation of anti adhesion effect of methylene blue in a randomized animal study using a standardized peritonitis model.
Matherials and methods: Fifty-five rats were randomly divided into four groups, Methylene Blue and peritonitis group (MB +P) (n = 15), salin and peritonitis group (SF + P) (n = 15), salin and non peritonitis primary suture (SF + PS) group and control group (n = 10). In biochemical studies, blood TNF alpha and tissue hydroxyproline levels, were measured on postoperative days 3 and 7. The areas of adhesions were measured and the abscess formation was scored according to location and size.
Results: TNF alpha levels (1.18 ± 2.040–28.49 ± 38, 33–125.40 ± 235.21, p = 0.009) was significantly lower in the MB + P group than in the SF + P group and SF + PS group on postoperative days 3. The median area of adhesions (1.71 ± 0.95–5.12 ± 2.41–36 ± 1.50, p = 0.001), was

significantly lower on postoperative third and seventh day, respectively.
Conclusions: In this model of general peritonitis, MB significantly reduced adhesion formation. MB is blocking the TNF alpha early postoperative days. Early blocking of the activity of TNF-alpha after peritonitis resulted in lower rates of adhesion formation macroscopically. The TNF-alpha can be an important factor for postoperative adhesion formation.

72 Laparoscopic Management of Peptic Ulcer Perforation

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Introduction and objectives: We aimed to investigate technical characteristics and clinical outcome of our experience in laparoscopic repair of peptic ulcer perforation.
Methods: Patients who underwent laparoscopic repair of peptic ulcer perforation between June 1997 and December 2008 were included into the study. Demographic features, technical details, and clinical outcome were retrospectively evaluated.
Results: Laparoscopic surgery was performed in 105 patients due to peptic ulcer perforation. Seventy-five patients (71%) underwent laparoscopic repair alone or laparoscopic repair with omentoplasty. In the remaining 30 patients (29%), the procedure was converted to laparotomy. Amongst 75 (59 men /16 women) patients who were included into the study, the mean age was 38.8 (15–88). In 19 patients (25%, 19/75) preoperative diagnosis was unclear and the patients were taken to operating theater due to acute abdomen. In all patients, but one, the duodenal defect was repaired by primary suturing; in one patient, simply intra-abdominal lavage and drainage were performed because the omentum was found to seal the defect. Omentoplasty was performed in 39 (52%) patients. One and two abdominal drains were used in 51 (68%) and 24 (32%), respectively. Mean hospital stay was 6.3 (3–20) days. Morbidity was 7% (n = 5). Early morbidity included bile leakage in three patients, postoperative intra-abdominal bleeding in one. One patient had trocar site hernia. One patient (88-year-old female) died on postoperative day 2 due to sepsis in the intensive care unit.
Conclusion: Laparoscopic primary repair is a safe and efficient method in peptic ulcer perforation.

73 An Outcome Analysis of Burn Patients with Multiple Trauma

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Introduction: Approximately 5% of multiple trauma patients sustain concomitant burns. Complicated management issues arise in these patients as burn and trauma care often conflict. The purpose of this study was to describe the different types of burn injuries seen in burn patients with additional forms of trauma, and to report the survival rate for this patient group.
Methods: In this retrospective study, 67 patients were admitted to our center with concomitant burns and trauma from 2000–2008. This study retrospectively analyzed the types of burn injury, extent of burns, types of other trauma associated with the burns, and outcomes.
Results: Of this study group, 65 were male. Average age was 30.5 ± 13.0. Mechanisms included 8 motor vehicle collisions, 18 electrocutions with subsequent falls, one plane crashes, 23 LPG or oxygen tube explosions and 17 other type of explosions. Average burn size was 24.4 ± 21.7%. The most common traumatic injury was fracture and head injury (44). Management of fractures in burn patients and resuscitation in head injured burn patient represented the most common conflicts in patient care. There were 22 deaths in this series.
Conclusion: Burns are a rare but significant complication in the trauma patient. Outcomes are dependent on rapid trauma evaluation as well as effective resuscitation and wound management. Given the complexities of their problems, these patients necessitate a balanced multidisciplinary approach to maximize their potential for full recovery. Thoughtful compromise between trauma and burn priorities is frequently necessary.

74 The Factors Affecting the Prognosis of Fournier'S Gangrene

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Introduction: Fournier's Gangrene (FG) is a rapidly progressive, polymicrobial, synergistic necrotizing fasciitis. In this study we aimed to determine the risk factors effective on the prognosis of the disease.
Methods: The files of 18 consecutive patients operated for FG during 2003–2007 were investigated retrospectively. The surviving and mortal groups of patients were compared for demographic data, etiological factors and treatment modality besides length of hospital stay and treatment cost.
Results: The mean age of the patients was 54.5 years and female/male ratio was 6/12. Mortality was seen in 6 (33.3) patients and significantly high in female (66.6%) ($p = 0.035$). The most frequent comorbid disease was diabetes (39.2%), etiological factor was perianal abscess (55.6%) and etiological source was anorectal region (61.1%); and they did not affect the mortality. The most frequent cultivated microorganism *E.coli* (66.6%) was significantly high in the mortal group ($p = 0.012$). Imipenem was the antibiotic used in all of the patients. The mean number of debridements was 4,67 and intestinal diversion was utilized for 22.2% of the patients. Fecal decontamination (38.8%) of the patients was performed by surgical (4) and nonsurgical (3) methods. The length of hospital stay in surviving group (34.17 days) was higher than the mortal group (10.50 days) ($p = 0.002$). There was no difference between two groups of patients for the length of hospital stay ($p > 0.05$).
Conclusion: Female gender, duration of complaint prior to treatment, fournier gangrene severity point and cultivated microorganism (*E.coli*) were the factors affecting the mortality.

75 Unexpected Bulge in a Young Patient

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Aim: Post-traumatic coronary aneurysms (PTCA) are extremely rare. We report an asymptomatic PTCA in a young patient.
Case: 26-year-old male, with no significant previous history. Admitted intubated and ventilated after a car runover. He had cerebral, thoracic, abdominal, pelvic and lower extremity trauma. Initial assessment disclosed eight left fractured ribs with associated pneumothorax; FAST was negative, head CT normal. Thoracic CT reveled small bilateral hemothoraces and pulmonary contusion, with no evidence of vascular lesions. He also had a fibular, clavicle, and pelvis fracture. Control angio-CT at day 40 showed pleural and pericardial effusions and raised the suspicion of left descending PTCA, subsequently confirmed with MRI. The patient remained asymptomatic with normal EKG and cardiac enzymes throughout this period. A coronariogram confirmed the PTCA, that had undergone spontaneous thrombosis, with no further treatment required.
Discussion: Coronary aneurysms (true or false) may occur after blunt thoracic trauma. PTCA normally result from controlled rupture post myocardial infarction or cardiac contusion, with gradual wall rupture. Although in this patient the diagnosis was made without any clinical manifestation, suspicion is the main key for diagnosis. Aneurysms must be considered as a differential diagnosis in patients with thoracic trauma history associated with arterial emboli, congestive heart failure, arrhythmia, chest pain or dyspnea.
Conclusion: Every trauma victim must be exhaustively evaluated. In any case a careful follow-up must be made in thoracic and abdominal trauma victims to decrease the possibility of missing injuries.

76 Causes of Mortality in Patients with Acute Mesenteric Ischemia

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Aim: Acute mesenteric ischemia (AIM) continues to be highly morbid cause of emergency. Early diagnosis and treatment may reduce severity of the disease. The aim of this study is to investigate causes for morbidity and mortality in AMI patients.
Materials and methods: This retrospective study has 76 patients of AMI. The patients were classified according to their age, sex, clinical and laboratory findings, comorbidity, etiology, operative procedures, complications. And effect of these causes on mortality and survival was investigated. The results were statistically evaluated.
Results: Of 76 patients 45 were male and 31 were female. Mean age was 64.3 for females and 62.1 for males. The most common symptom was abdominal pain. Only one third of patients had diagnosed correctly before operation. Amylase was high in 73% of patients. Plain abdominal graphy showed air-fluid levels in all patients. Mortality rate was high in patients aging over 60 years ($p < 0.001$). There were no relationship between mortality and gender. The patients those who had massive small bowel and colon resection developed high mortality rates (66%). Resection of ileocaecal valve also increased the mortality. Five patients all of whom developed perforation died. Majority of survivors had surgical intervention during first 24 h of ischemic attack. The patients those died due to perforation had delayed surgical intervention.
Conclusions:
- There is no benefit of routine laboratory findings in early diagnosis of AMI.
- Massive intestinal resection, absence of ileocaecal valve and stomal procedure increased mortality rate.
- Delay in diagnosis and treatment also caused high mortality.

77 A Review of Ambulatory Acute Burn Patients in one Center

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Introduction: More than 95% of all burn patients can be managed on an ambulatory basis. Appropriate management of minor burns minimizes further damage.
Methods: The epidemiology, demographics, and outcomes of 611 ambulatory acute burn patients were reviewed at our center between 2003 and 2008. Patients who were in ABA referral criteria were excluded from the study.
Results: The patients' mean age was 30.25 ± 1.13 years (range, 1–85 years). The percentage of patients whose first admission was to our center was 42.9%; the percentage of those referred from another center was 57.1%. Scald burns were the most frequently reported cause of burns (64.4%). The house was the most frequently reported place at which the burns occurred (88.3%). The percentage of stove-related burns was 10.7%. The upper extremities (59%) and lower extremities (20%) were the most frequently reported places on which the burns occurred. Mean TBSA affected and superficial partial thickness burned area were 3.1 ± 0.09% and 2.07 ± 0.06%. The mean follow-up and the mean number of dressings applied to the burns were 7.54 ± 0.11 days (range 3–16 days) and 4.05 ± 0.05 (range 2–9). Four patients (0.65%) needed skin grafting, and two patients (0.32%) were hospitalized for debridement without grafting.
Conclusions: Close follow-up is important in minor burns to minimize further damage. Burn centers must play an active role in the care of all burns. The devastating effects of burns can be prevented and decreased by educational programs. Stove-related burns remain a problem in Turkey.

78 Experience of One Center in Electrical Burn Injuries

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Introduction: Electrical burn injuries are much more complex and are associated with higher morbidity and mortality when compared with other skin burns.
Methods: The purpose of this study was to review retrospectively our experience about electric burns in our institution between 1997 and 2008 and to emphasize the importance of electric burns. Of 1,144 burn patient which had been hospitalized during study period 190 patient had electrical burn injuries (16.6%). Epidemiology, operations, and complications were reviewed.

Results: Mean age was 26.25 ± 1.05 years. The percentage of the male patients was 89.5%. The mean TBSA affected was 27.85 ± 1.44%. The percentages of high voltage electricity injury, lightning injury, and low-voltage current injury were 63.7, 25.8, and 10.5%, respectively. Place of employments (47.3%) and outdoors (33.9%) were the most frequently reported places at which the burns occurred. The burns mostly occurred in urban areas (70.4%).Upper and lower extremities were the most frequently affected regions. The percentages of the patients who underwent debridement, grafting, amputation and fasciotomy were 61.6, 54.2, 18.4, and 10,1%, respectively. The percentage of patients who had additional trauma other than electric burn injury was 10.5%. Mean hospital stay of patients was 29.31 ± 1.72 days. The mortality rate was 11.1%. Majority of the patients died from septic complications (50.1%)
Conclusion: Aggressive multidisciplinary treatment modalities and early debridment, grafting and/or flaps are very important. Special considerations are required for public education about electricity and its hazardous effects. Governmental supports are needed both in prevention and in therapy.

79 Hidrosurgical Tangential Excision for Burns

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Early staged excision and autogenous skin grafting or temporarily wound coverage with biologic dressing or allograft until autogenous donor sites are available is now conventional treatment for full-thickness burns. Typically, tangential excision is performed with a handheld knife thus it may be difficult to control bleeding from the wound bed and difficult to assess the suitability of underlying for accepting a graft. A hydrosurgery system – Versajet® is available that can be used for tangential burn wound excision. This device offers an easy and more precise way of excising eschar and is particularly useful excising nonviable tissue from the concave surfaces of hands and feet, as well as the eyelids and ears. Totally, 134 hydrosurgical tangential excision (HTE) were performed for 107 patients with burn, in our Burn Center in one and half year. Several times performing were needed 27.1% of patients (n = 29). Wounds of patients with 10–15% total burned body surface were covered autogenous skin grafts subsequent to HTE. More extensive wounds were covered with biologic dressings temporarily and wounds as soon as suitable autogenous skin grafting was performed. At this interval, burn wounds were shrunk average 20–30% and donor skin poverty was increased. Frequently, delaying to excision and coverage of burn wounds may be awful. Early excision and early coverage of the burn wounds must be a golden standard for the current treatment of the burns. Also HTE is becoming a candidate to golden standard at burn treatment.

BURNS

80 Reevaluation of the Outcome for Burn Patients Older than 45 years

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Introduction: In our previous study, we examined the treatment results of burn patients older than 45 years, and found a significant increase in mortality with increasing age groups. The aim of the present study was to reevaluate this patient group and also compare these results with the previous study period of 1979 to 1998.
Patients and Methods: One-hundred and fifteen patients older than 45 years were admitted to our burn unit during the last 10 years. These patients were divided to three groups with respect to their ages (Group A: 45–60 years, Group B: 61–59 years, and Group C: older than 70 years). Demographic properties of patients, etiology, and extend of burn injury, co-morbidity, length of hospital stay, and mortality rates were recorded.
Results: During the last 10 years, demographic properties and etiology of burn injury did not changed significantly. However overall survival rate increased from 51.3 to 82% and LD 50 values for burn injury are significantly increased in all age groups. Length of hospital stay is significantly decreased in all age groups, especially in Group B (from 60.7 to 26.5 days). Co-morbidities did not change over time and sepsis is the leading cause of death in 16 patients (80%).
Conclusion: In our burn unit, treatment results in patients older than 45 years showed a significant improvement during the last 10 years.

81 Etiologic Evaluation of Burn Patients that have Comorbidity, Supportive Methods and Complication Analysis

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Introduction and objectives: Patients who has weakness of mental and motor functions are under more risk than normal burned injured population. We would like to focus on burn injured cases that have co-exiting morbidities.
Methods: Comorbid 15 patients who applied to burn unit due to burn between January 2008 and July 2008 were taken into evaluation. Comorbid etiologies were seizures (7 case), mental retardation (5 case) and Down syndrome (3 case), respectively.
Results: During follow-up period, one of the cases had aggrevated petit mal convulsion due to devastating effect of burn injury. In one case there was grade 1 pressure sore and urethral infection who was paraplegic patient. Weight loss was observed on a geriatric case that had seizure due to insufficient nutrition.
Conclusion: Burn injured cases that have comorbidity, special care, and additional measures should be taken. Psychological, neurological or geriatric causes are the factors that affect the recovery of burn defects and success of operation. Detailed evaluation of coexisting disorder and additional care are the key points of the comorbid burn patient.

82 Evaluation of Gender Differences in Burned Children

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Aim: The present study was aimed to evaluate the gender differences of burned children in clinical course and outcome.
Methods: Children (aged 0–15) admitted to our burn center between August 2008 and January 2009 were retrospectively evaluated. Total burn surface area (TBSA), levels of some acute phase markers, grafting need, and hospitalization time were analyzed.
Results: Sixty three patients [45 (71.4%) males, 18 (28.6%) females] were included in this study. The mean age was respectively 2.41 ± 1.52 years and 3.06 ± 1.29 years in males and females ($p = 0.117$). The mean TBSA burned respectively 14.31 ± 7.32% and 16.11 ± 2.32% in males and females ($p = 0.312$). The mean WBC count in admission was significantly higher in males than females ($17.6 \pm 8.9 \times 10^{-9}$/L vs. $12.6 \pm 1.59 \times 10^{-9}$/L, $p < 0.05$), but there was not any significant difference between females and males in CRP count. ($p = 0.76$). Skin graft operation was performed in 14 (31.1%) of males and in 7 (38.9%) of females ($p = 0.554$) and also, we did not find any significant difference between males and females in hospitalization time (11.5 ± 9.8 days vs. 12.6 ± 7.7 days, $p = 0.689$).
Conclusion: Although many studies have showed that critically ill females have a better outcome than critically ill males, any significant difference was not observed between burned male children and burned female children in most of the clinical parameters, except white blood cell counts.

83 Preparedness of Hospital Physicians, Emergency Physicians and Paramedics in the EU and the USA for a Mass Casualty Incident

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Introduction and objectives: The goal of our study was to evaluate the preparedness of hospital physicians, Emergency physicians and Paramedics in the EU and the USA for a mass casualty incident.
Methods: An online survey which contained 16 questions was sent to the head of the department of Trauma–surgery, Emergency Medicine and to Paramedics by e-mail. Among other things we questioned: existence of a hospital emergency-and disaster plan and the yearly exercise of the Plan. Coordination with the local rescue service as well as existence of decontamination facilities were asked for. Replies were analysed statistically with the one-way analysis of Variance (ANOVA) test and the Turkey–Kramer Multiple Comparisons test.
Results: Altogether, 238 assistant and emergency doctors as well as Paramedics answered. 30% were not conscious of the details of the disaster plan of her hospital while 14% did not know the plan at all. 35% of the interviewed doctors did not know her area of responsibility in the case of an internal emergency. 85% of the interviewed know what to do in case of an MCI. 30% of the interviewed doctors and 55% of the paramedics did not know her area of responsibility at the treatment of patients contaminated chemically, nuclearly or biologically.
Conclusions: The preparedness for doctors and paramedics in hospitals and in the preclinical rescue service in the EU and the USA on a MCI (mass casualty incident) are insufficient. The emergency medical education of doctors and paramedics should be adapted to the terrorist threats

DISASTER

84 Preparedness of Chief Physicians and Hospitals In Germany, The EU and the USA for a Mass Casualty Incident

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[1]Department of Orthopaedics and Trauma Surgery, University of Bonn, Bonn, Germany
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Introduction and objectives: The goal of our study was to evaluate the preparedness of hospitals in the EU and the USA for a mass casualty incident.
Methods: An online survey which contained 16 questions was sent to the Chief Physician of Hospitals by e-mail. Things we questioned: existence of a hospital disaster plan and the yearly exercise. Coordination with the local rescue service as well as existence of decontamination facilities. Replies were analysed statistically.
Results: Altogether, 117 senior consultants, of this 72 senior consultants from Germany as well as 45 senior consultants from the USA and the EU, answered. All people claimed to have a hospital disaster plan. 65% of the German hospitals made an exercise of the plan with tabletop exercises. However, 92% of Chief Physicians in the USA and the EU made an exercise of the plan regularly with table top exercises. 84% of the hospitals in the BRD did not have any decontamination possibility of NBC (nuclear, biological, chemical) contaminated patients, while 70% of the hospitals had this possibility on the spot in the EU and the USA.
Conclusions: The exercise of the hospital disaster plan in Germany is insufficient, compared with the hospitals in the EU and the USA. Furthermore the German hospitals are badly equipped in the worldwide comparison to decontaminate patients on the spot. We demand for an increase of the ''Exercises'' of the hospital disaster plan (also by tabletop exercises) as well as an improved equipment for the decontamination of the injured.

85 Rational Prevention Methods Against Possible Crush Injuries Due to Collapsing Buildings, Suggestions Concerning Reduction of Mortality and Morbidity

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In the two big earthquakes that occurred in the North-west of Turkey in 1999 in short intervals within less than 3 months there were approximately 20,000 cases of death and around 100,000 were injured. There were several other deadly earthquakes in the whole world the same year. Main survival factors in the post-disaster period are prevention from injuries as well as detecting the location of the survivors and the rescued. The reality of the situation of persons who lost their lives in such traps, the severely injured, and the ones who survived must be analyzed. Rational prevention methods against possible crush injuries due to collapsing buildings have been con-

sidered in the light of the field and simulation experience we gained and suggestions have been presented to reduce mortality and morbidity. Our work has been conducted with the aid of medicine based on proof, appropriate observation as well as sampling and experimental methods. A global approach concerning worst case scenario led by earthquakes has been proposed taking into consideration the different models of behavior in different countries and societies to increase the chance of survival to a maximum and to reduce injuries to a minimum level. Due to unlimited possibilities of travelling nowadays, it is not possible to estimate the place, the country or the circumstances under which a person could experience a disaster.

EDUCATION

86 Trauma and Emergency Surgery Education in Portugal

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In Portugal there are three official ways to differentiate: specialty (vertical), subspecialty (vertical) and competence (transversal). Doctors may access to a subspecialty or a competence as a second step, after a specialty. Portuguese Medical Association (Ordem dos Médicos, OM) is the official entity that regulates all the medical and surgical activities in Portugal, being his duty to protect the public interest. Doctors must be registered with to practise medicine or surgery. OM also sets the standards and outcomes for basic medical education. After graduating from medical school and completing their foundation training, doctors usually complete a third and even a fourth stage of postgraduate training, whose standards are set by the colleges. These are responsible for promoting the development of postgraduate medical education and training for all, establishing standards and requirements and making sure they are met across the country. Emergency medicine exists as a competence since 2002 and goes behind the prehospital acute care. This College is strongly interested in the development of an autonomous College of Competence on Emergency Surgery (trauma surgery included) and it exists, since 2007, an official national Working Group on Emergency Surgery Education (Grupo de Trabalho para a Formação Específica em Cirurgia de Emergência), with 13 representatives of general surgery (7), neurosurgery (1), orthopaedics (1), thoracic (1), vascular (1), urological (1) and paediatric surgery (1). The general surgeons, IATSIC members and DSTC instructors, also integrate and lead the National Steering Committee for DSTC, after a recently signed memorandum of understanding.

Author to editor: The point of the situation, from an organisational point of view, about trauma and emergency surgery education in Portugal and the importance for the relationship with portuguese speaking doctors around the world

87 Peer to Peer Education in Undergraduate Medical Education in Emergency Medicine

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Introduction and objectives: Practical Training in emergency medicine should be an important part of undergraduate education, as every physician should be able to handle medical emergencies. However, adequate practical training is time and personal consuming. This work seeks to determine whether medical students (peer to peer education) can be trained as course instructors in emergency medicine training and if there are differences in the training outcome.

Methods: The undergraduate training consists of both basic life support (BLS) and advanced cardiac life support (ACLS) courses. After both courses, students have to pass a Multiple Choice test and have to complete a course evaluation.

During the instructor training, all candidates, students and physicians were trained together with theoretical and practical training and were furthermore supervised during their first courses.

Results: Until now, 210 BLS and 185 ACLS trainings were conducted of which 71% (BLS) and 52% (ACLS) were run by medical students. There were no significant differences in the written examinations nor in the course evaluations (1 = very good to 6 = unsatisfactory) between courses by staff (1.38 for BLS and 1.10 for ACLS) or medical students as trainers (1.34 for BLS and 1.17 for ACLS, respectively).

Conclusions: Peer to peer education can be a useful tool in the manpower consuming practical training in emergency medicine without influencing the learning outcomes or the evaluation.

EMERGENCY MEDICINE

88 Safety and Efficacy of Emergency Non-invasive Pelvic Ring Stabilization

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Background: Non-invasive pelvic ring stabilization (pelvic binding, PB) in shocked patients is recommended by state and institutional guidelines regardless the fracture pattern. The purpose of this study was to determine the adherence to the guidelines, radiological efficacy of the technique, and identification of potential adverse effects associated.

Methods: Analysis of the prospective database of a level 1 trauma center on high-energy unstable pelvic fractures. Collected data included patient demographics, physiology, fracture classification, application, and timing of PB, associated injuries and outcomes. Pre and post-PB radiographs were compared to evaluate the changes in fracture position. The potential effects of PB on soft tissue complications were assessed by independent experts.

Results: During the 41-month study period a total of 43 PB was performed on 115 patients with high-energy unstable pelvic ring injuries. Stable patients were less likely to get PB (32%) than shocked patients (50%). The adherence to guidelines was 50%. Analyzing fracture types (AO/OTA classification) of shocked patients the adherence was: B1 80%, B2 20%, B3 20%, C1 66%, C2 86%, C3 33%. Better radiological appearance was detected in B1 100%, C1 80%, C2 83%, C3 100% types. One femoral artery, four bladder and three rectum injuries were identified in patients with PB applied. There were no association between the complications and the PB.

Conclusion: PB is highly efficient in improving the alignment of B1 and C fractures. PB does not improve radiological alignment of B2/B3 fractures; the deformity could increase without any adverse effects.

89 Circumsicion Complications: an Ongoing Public and Social Problem

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Introduction and objectives: In our country, the vast majority of circumsicion is stil not done by physicians. In this study, we evaluated the patients who treated for circumsicion complications in our clinic.
Methods: A total of 27 children who treated for cicumsicion complication in our clinic between 2005 and 2007 were evaluated.
Results: Mean age during circumsicion was 19.5 months (5–7 years). 26 out of 27 had not been circumsiced by physicians. Complication was bleeding in 16 patients, burred penis in 7, complete glanular amputation in 3, and urethral fistula in 1 patient. One suture was enough to control bleeding for the majority of patients with this complications, while general anesthesia required for treating other complications.
Conclusions: Significant number of children still undergo circumsicion between 2 and 7 years old (fallic period) in our country. The vast majority of complications occur when circumsicion is not done by physicians; significant number of these complications require revision under general anesthesia. As a result, circumsicion is still a challenging both public and social problem in our country, and results in high morbidity because the majority is not done by experienced hand.

90 Electrolyte Changes and its Prognostic Significance in the Multiple Trauma

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Objective: Multiple trauma involves at least two systems of body which abdomen, extremities, chest and head–neck. The aim of this study is to show relationship between the severity of injury and electrolyte changes in multiple trauma patients.
Method: This is a prospective study which 45 adult multiple trauma patients (30 male and 15 female) were studied. The median age was 41.68 (range 16–87). In all cases, serum sodium, potassium and calcium levels and Injury Severity Score (ISS) were obtained on admission to emergency department after trauma. Severity of injury was estimated with ISS. Degree of association between variables was evaluated by Spearman's Correlation Coefficient test.
Results: The mean sodium levels was 139.02 mmol/L, the mean potassium levels was 4.61 mmol/L, the mean calcium levels was 9 mg/dL. There was a negative correlation between calcium and ISS, and this is statistically significant ($p = 0.006$). While other serum electrolytes (sodium and potassium) did not change according to ISS.
Conclusion: Electrolyte abnormalities often occurs in critical ill patients, this imbalance has a prognostic importance particularly in multiple trauma patients. Electrolyte changes determinated in early period and appropriate resuscitation is indispensable. We suggest that low calcium levels can be considered for the severe injury. This condition may be related to interrupted calcium mechanism in critical trauma patients.

91 Clinical Experiences with a New Semi Quantitative Solid Phase Immunassay for Measuring Rapid Procalcitonin

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Introduction: For measuring rapid semi quantitative procalcitonin a solid phase immunassay (Brahms. PCT-Q, Germany) can be used. In this study we aimed to compared clinical availability of procalcitonin Lumitest and card test by using at the same patients and at the same time.
Methods: PCT levels were evaluated at four different categories as offered referance scale(< 0.5 μg/l, 0.5–2 μg/l, 2–< 10 μg/l, > 10 μg/l) after test was done (200 μl plasm, 30 min incubation). The patients with increased PCT levels because of different etiological causes were seperated as SIRS, sepsis and septic shock groups and test results compared with same groups. Lumitest PCT results and card test results were compared.
Results: The results of 150 patients PCT Lumitest and card test were compared with clinical concordance 80.7% of Lumitest results were consists with patient categories. The result of the same patients card test concordance were found as 28.5%. The higher or lower results were obtained at categories.
Conclusion: Semi quantitative solid phase immun assay PCT can provide rapid and simple plasma PCT measurement. The value of test results and simple use of it seems to be sufficient to acute diagnostic approach. So if available quantitative luminometrik immunassay can be preferred for following PCT concentrations and routine daily measurements.
Author to editor: Lumitest is a simple and easy way to evaluate PCT levels and infections at intensive care units and save time to ICU personnel for diagnosis of these situations.

92 Major Incident Hospital: Development of a Permanent Facility for Managment if Incident Casualties

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Introduction and Objectives: Preparation is essential to meet the challenge of optimal care for a sudden unexpected surge of casualties due to a major incident. By definition, requirements exceed standard care facilities in qualitative and or quantitative respect and interfere with regular patient care. To meet the growing demand for disaster-preparedness a permanent facility to provide structured, prepared relief in such situations was developed. We describe this facility.

Methods: A dormant, however permanent, major Incident Hospital (MIH) resulted from cooperation between a large academic hospital (UMCU), the military hospital (CMH), and National Poison Information Centre (NVIC). Infrastructure, organisation and systematic working methods are designed to create order in a chaotic, unexpected situation and optimize care in any scenario. Focus points are: patient flow and triage, registration and communication, evaluation, training and research.
Results: An emergency response protocol enables admittance of up to 100 (exceptionally 300) patients starting within 15 min. Strict reservation guarantees availability and minimizes impact on normal care. The Patient Barcode Registration System results in quick and accurate registration of data. Resulting in real time information which facilitates medical coordination. NVIC collaboration and infrastructural provisions enable centralized care of patients under quarantine conditions. Infrastructure and a plan is not enough; training, research and evaluation are daily occupation in ''dormant'' times to improve disaster preparedness. Previous operations (e.g., Tsunami repatriation) are described.
Conclusion: The MIH (The Netherlands) is worldwide a unique facility to provide immediate emergency care for multiple casualties in case of disaster or major incident.

93 Surgical Treatment in Upper Gastrointestinal Bleeding; (Our Experience)

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This study is a retrospective evaluation of 1393 patients (male 743 and women 647) with upper gastrointestinal bleeding who was admitted at ''Floreasca'' Clinical Emergency Hospital Bucharest during 2008. Upper gastrointestinal bleeding (UGB) can be caused by a wide variety of medical conditions but approximately 80% of all UGB episodes stop bleeding spontaneously. Recurrence of gastrointestinal hemorrhage is associated with an increased mortality rate, a greater need for surgery, blood transfusions, a prolonged length of hospital stay, and increased overall health care costs. Use of endoscopic hemostasis in UGB has reduced significantly the need for operation; we performed 88 operations (6.3%) However, surgery still plays a pivotal role. Failure to control bleeding endoscopically should not delay surgery when is necessary, and a close cooperation between endoscopists and surgeons is essential. Initial endoscopy stops the bleeding in approximately 94% of patients and helps to identify those patients with a high or low risk of rebleeding. High-risk patients should be examined for rebleeding by clinical and endoscopic assessment within at least the first 2–3 days. Mortality rate was 6%, but 4% are due to cirrhosis. Recommendations for the surgical management of bleeding peptic ulcer disease include immediate operation for patients with rapidly exsanguinating ulcer hemorrhage and patients with active bleeding and failure of endoscopic hemostasis to control the bleeding. Early elective operation is indicated after initial endoscopic hemostasis for old patients with comorbidities and/or hemodynamic instability who develop recurrent bleeding while hospitalized or with a total blood transfusion requirement exceeding 5U.

94 Our Experience in Surgical Treatment of GI Bleeding Caused by Gastric GIST

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Background: Gastrointestinal stromal tumor (GIST) is a most common mesenchymal tumor of the gastrointestinal tract, with the frequent location in stomach. The most common symptoms associated with gastric GIST's are abdominal pain and GI bleeding, from asymptomatic occult bleeding to massive life threatening bleeding.
Aim: To present six cases with GI bleeding causes by gastric GIST treated surgically during 2005–2008.
Methods: A prospective study. Clinical features, gender, age, tumor location and growth, surgical methods, immunochemistry, and follow-up were evaluated in six patients with gastric GIST causing GI bleeding.
Results: The patient's age range was 41–70 years (mean 56.5 years), three female and 3 male. Clinical findings include chronic and acute, life threatening GI bleeding and abdominal pain. Gastric corpus was involved in two, antrum in three and antero-corporal part in one case. Posterior wall was involved in all six cases. Ulcerations were present in all cases. Endogastric growth was observed in one, exogastric four and mixed in one case. Indications for surgery were one emergency for life threatening bleeding; three cases with acute bleeding, after treatment with blood products, planed treatment and two elective surgeries for gastric tumors. Wedge resection has been performed in two, gastrectomy in four cases, without fatality. Follow-up ranges between 1 and 38 months after surgery, without bleeding, recurrence or metastasis. CD117 and CD34 were positive.
Conclusions: Even rare, GI bleeding causes by gastric GIST might be life threatening. Urgent and complete surgical resection with achieving negative margins is the standard therapy of bleeding gastric GIST.
Author to editor: I think that Scientific Committee is doing very good job.

95 Selective Laparoscopy for Post-operative Adhesive Small Bowel Obstruction: Enteroclysis-guided Laparoscopic Adhesiolysis in Chronic Recurrent, and Direct Laparoscopic Adhesiolysis in Acute Bowel Obstruction

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Background and objectives: In this study we presented the results of the patients who underwent enteroclysis-guided laparoscopic adhesiolysis (EGLA) in the setting of recurrent disease and those who were operated by direct laparoscopic adhesiolysis (LA) for acute obstruction subsequent to failed conservative management.
Methods: Patients who had acute bowel obstruction and are suitable for conservative management were first treated by nasogastric

decompression and fluid resuscitation. Direct selective LA was performed whenever the conservative management failed. The patients who were recovered with conservative treatment were taken in the follow-up. If a patient had more than one obstruction episode, we performed enteroclysis after decompression treatment and then EGLA according to imaging findings.
Results: Between January 1998 and January 2009, 34 (25 women/9 men) patients underwent selective LA. Mean age was 47 (range 20–80). EGLA and direct LA were performed in 22 and 12 patients respectively. The procedure was converted to laparotomy in four patients because of technical problems or extensive adhesions. There were four iatrogenic bowel injuries; they were repaired laparoscopically (1/4) or by a mini-laparotomy (3/4). All patients tolerated oral nutrition after surgery and obstruction signs regressed. Post-operative hospital stay was 4.3 days (range 2–7). One patient had a transient bowel obstruction 1 month after surgery and recovered with conservative management. There was neither mortality nor recurrence.
Conclusions: Selective LA is a safe and feasible approach for the treatment of small bowel obstruction related to adhesions. Pre-operative enteroclysis may show the nature and level of the obstruction.

96 Damage Control Surgery in the Management of Acute Mesenteric Ischaemia

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Background: Acute mesenteric ischaemia is an uncommon but catastrophic acute surgical emergency. It carries a high morbidity and mortality.
Methods: We reviewed our experience of nine consecutive cases presented to Azienda Ospedaliera ''Umberto I'' Siracusa, Italy between 2007 and 2008.
Results: All the nine patients had a damage control surgery and six survived. Mortality was associated with the delayed diagnosis, the extension of necrotized bowel and severity of peritonitis at the time of the first laparotomy.
Conclusions: Evidence from the series of patients described suggests that damage control surgery improves survival in patients suffering acute mesenteric ischaemia. A damage control approach involves emergency resection of ischaemic bowel with no attempt to restore gastrointestinal continuity and formation of a laparotomy. Patients are stabilized in the intensive care unit (ICU) and definitive surgery is then considered after 2, 3 or more days. This approach is particularly attractive if immediate specialist vascular expertise is not available.

97 The Role of Computerized Tomography in the Diagnosis of Acute Appendicitis in Patients with Negative Ultrasonography Findings and a Low Alvarado Score

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Objective: To identify the role of computerized tomography (CT) in the differential diagnosis of acute appendicitis in patients with a low Alvarado score (4–6) and negative ultrasonography findings.
Patients and method: A total of 52 cases that underwent appendectomy with a preoperative initial diagnosis of acute appendicitis between December 2004 and September 2008 were included in the present study. All patients had an Alvarado score of 4–6 together with negative ultrasonography findings; and preoperative abdominal CT examination results were available in all patients. CT results were compared with intraoperative and pathological findings.
Findings: The mean age of the cases was 31 ± 4 years, with a female to male ratio of 30/22. The mean Alvarado score was 4.9. CT results were in the favor of acute appendicitis in 34 out of 52 cases (65.4%). Of these 34 patients, acute appendicitis was confirmed by intraoperative and pathological findings in 31 (91.2%); whereas, acute appendicitis could not be confirmed in the remaining 3 cases (8.2%). In 15 out of 18 cases without CT findings of appendicitis (83.3%), intraoperative and pathological findings were also in agreement; however, the remaining 3 cases was diagnosed with acute appendicitis based on macroscopic and histological findings. Results of the recent studies, sensitivity and specificity of CT in the diagnosis of acute appendicitis were 91.2 and 83.3%, respectively.
Conclusion: To avoid unnecessary appendectomies in suspected acute appendicitis cases with a low Alvarado score and negative ultrasonography findings, CT may be used as a complementary diagnostic tool.

98 Colonoscopic Stent Application in Malignant Colonic Obstruction

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Introduction: Colonoscopic stent application may avoid emergent surgery in patients with malignant colonic obstructions and these patients may undergo elective single stage definitive surgery. Moreover patients with inoperable tumors can be treated palliatively without surgery. The aim of this study is to present the experience of colonoscopic stent application at a surgical endoscopy unit.
Methods: Between January 2005 and December 2008, 48 patients with malignant obstruction of rectum or colon underwent colonoscopic stent application. The clinical data and outcome of these patients were evaluated retrospectively.
Results: The mean age of the patients was 60 (42–78), 34 were male and 14 were female. The localization of the tumors were as following; rectum (n = 8), rectosigmoid (n = 15), sigmoid (n = 10), descending colon (n = 7), splenic flexure (n = 4), transverse (n = 3) and hepatic flexure (n = 1). Of the 48 patients 2 underwent emergency surgery due to colon perforation (4.2%), 19 were sent to neoadjuvant therapy (39.6%), 21 could undergo elective surgery (43.7%) and 6 left the study (12.7%). Emergency surgery could be avoided in 95.8% of the patients.
Conclusion: With its easy application, minimally invasiveness and high success rate, colonoscopic stent application should be the first line intervention in malignant large bowel obstruction.

99 Can Ultrasound Evaluation be Omitted in Minor Trauma Cases ?

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Objective: The objective of this study was to determine the need for ultrasound evaluation in minor Trauma patients.
Methods: For this study we reviewed the charts of all trauma patients examined in our Emergency department in a 3 month period. All patients were scored according to the Abbreviated Injury Scale (AIS) 2005 Manual. We focused on a subgroup of 247 patients with low trauma kinetics, hemodynamically normal during the initial and secondary survey, ISS < 3, and no signs of abdominal injury or discomfort. All patients were treated according to standing ATLS recommendations. All patients underwent Focused Abdominal Sonography for Trauma (FAST) and Bedside Organ Assessment with Sonography after Trauma (BOAST) evaluation by experienced radiologists.
Results: FAST evaluation was positive in 11 cases (4.45%), and BOAST in 1 case (0.4%). All 11 patients were admitted for 24 h observation in the surgical department, while the remainder 236 were discharged after 6 h observation in the emergency department. During their hospitalization all 11 patients remained hemodynamically normal, with no alterations in their physical or laboratory examination and were discharged in good condition. The results of this study show that only a small percentage of minor trauma cases will have a positive FAST and BOAST examination and a positive scan does not seem to have clinical implications.
Conclusions: It seems to be safe to discharge, minor trauma cases after a period of observation. This leads to better recourses management and less hospital admissions.

100 The Effects of Melatonin on Tissue Superoxide Dismutase (SOD) and Malodyaldehyde (MDA) Levels in Radiocontrast Nephropathy

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Objectives: The aim of this study is to find out the effects of melatonin on the erythrocyte and kidney malodyaldehyde (MDA) and superoxide dismutase (SOD) levels in radiocontrast nephropathy.
Methods: In this study, 24 New Zealand type rabbits were included. The test subjects were divided into four groups six rabbits in each (control, sham, hydration and melatonin groups). Blood samples of all subjects were taken in beginning of study. Renal tissue was obtained in the control group. The rest received 10 ml Diatrizoat sodium intravenously. Hydration group was given 10 ml/kg/day IV bolus 0.09% NaCl. Melatonin group was given 10 mg/kg IV melatonin four times with the same dose isotonic. It was blood and renal tissue samples were taken at the 48th and 72nd hours. MDA levels were determined with Ohkawa method, SOD enzyme activity was studied with RANSOD (Randox,UK) superoxide dismutase assay kit.
Results: The mean renal SOD value of the melatonin group (1786.9 ± 188.1 nmol/g) was significantly higher than in the sham (1211.3 ± 163.7 nmol/g), control (1420.7 ± 373.2 nmol/g) and hydration groups (1492.1 ± 166.1 nmol/g) (respectively $p = 0.012$, 0.031, 0.029). The mean renal MDA value of melatonin group (43.1 ± 7.8 nmol/g) was significantly lower than sham (67.2 ± 6.9 nmol/g) and hydration groups (59.5 ± 8.4 nmol/g) ($p = 0.012$, 0.048 respectively).
Conclusion: Melatonin has a curative effect on the lipid peroxidation caused by the contrast substance in the kidney. In preventing nephropathy resulting from contrast substance, giving melatonin together with hydration can be more effective than giving hydration alone in the clinic.

101 Wireless ER: Voice Recognition in the Trauma Bay, Does it Just Look Nice or Does it Truly Help?

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In our level one trauma referral centre, we have on average 800 admissions per year through the trauma bay. This can be very hectic and consequently data collection is often subjugated to the actual patient care process, creating a paradox, because adequate data collection is essential. We present the results of a pilot study in which state of the art voice recognition technology improved data collection in our trauma bay.
Our Electronic patient record (EPR), supplemented with voice recognition hardware and software was the basis. A prospective cohort of 50 patients in whom voice recognition was used is compared with 50 patients retrospectively. Both groups were comparable. The average entry time for the data set during the assessments was 17 (2–69) min. By comparison, for 50 consecutive patients in 2003, the average completion time for the trauma sheet was 131(24–407) min. This is a significant difference ($p < 0.05$).
In addition, all datasets entered with voice recognition were complete and available in the system as soon as the patient left the trauma bay. Compared to the retrospective cohort 37% of the patients had incomplete data concerning the vital parameters.
Conclusion: The introduction of voice recognition technology real time produces more accurate data more quickly. We are convinced that high tech technology will increasingly assist the trauma surgeon and if we are correct it looks like the prediction of Don Trunkey will come true viz: ''the current possibilities for using digital resources within medical care are merely limited by our own imagination''

102 Factors Predicting Survival in Perforated Peptic Ulcer

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Introduction and aims: Despite the improvements in the diagnosis and treatment, mortality rates are still high following urgent operation for perforated peptic ulcer (PPU). In this study, we analyzed the factors affecting the survival of the patients operated for PPU.
Materials and methods: The records of the 147 patients operated due to PPU between January 1997 and January 2007 were analyzed. Age, sex, American Society of Anesthesiology (ASA) score, alcohol consumption, smoking, nonsteroidal antiinflammatory drug (NSAID) usage, the time passed from the onset of symptoms to operation, history of previous peptic ulcer disease, diameter and localisation of the ulcer, surgical technique, length of stay, postoperative complications and mortality rates were determined.
Results: The mean age was 51 and ASA score was 2. Primary suture and omentoplasty was the selected procedure in 80 patients while

gastrostomy was added to primary suture to another 31 patients. Twenty nine patients received primary suture, truncal vagotomy and gastroenterostomy and seven underwent resection. The mean length of stay was 7 days. Three patients suffered from atelectasis and pneumonia, one from empyema, eight from surgical site infection and four from leakage. Twenty three of the patients experienced respiratory failure and 10 died of multi organ deficiency (6.8%). Age and ASA score were found as factors significantly affecting survival.
Discussion: The surgical management of PPU is still troublesome in remarkable number of cases. The procedure shall be selected according to the features of the ulcer and general status of the patient.

103 Retrospective Evaluation of Caustic Esophageal Injuries; Etiology and Outcome

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Introduction: The aim of this study is to evaluate the etiology, severity and outcome of the caustic esophageal injuries and to determine the preventable risk factors.
Methods: Between January 2002 and December 2008, 191 patients admitted with caustic fluid ingestion were retrospectively analyzed.
Results: The mean age of the patients was 30.2 (14–72), 59.7% were male and 40.3% were female. Most common fluid ingested was bleacher (42%). Ingestion was described as unintentional by 86.3% of the patients. In 74.3% of the cases caustic fluid was stored in water or beverage bottles. 21 patients had grade 3 and 4 esophageal and/or gastric caustic injury (10.1%). One patient had esophageal perforation at first day and underwent emergency surgery. 16 patients received steroid therapy (8.37%) and esophageal stricture was developed in 14 patients. These patients were treated during outpatient follow-up by serial endoscopic balloon dilatations (7.3%). Two esophageal perforations occurred during balloon dilatation. Overall morbidity and mortality rates were 7.3 and 1.04%, respectively.
Conclusion: Esophageal and gastric damage was superficial or absent in most of the cases but morbidity and mortality rate is high in cases with serious esophageal injuries. The exceeding incidence of inappropriate storage of caustics in this study makes us think that most of these injuries are preventable.

104 Abdominal Cocoon Associated with Acute Appendicitis and Small Intestinal Obstruction

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Abdominal cocoon (idiopatic sclerosing encapsulating peritonitis) is a rare disease of the peritoneum which refers to a condition where there is a total or partial encasement of the small bowel by a dense fibrous membrane. The abdominal cocoon is probably a developmental abnormality, largely asymptomatic, and is found incidentally at laparotomy or autopsy. It is an unusual cause of intestinal obstruction. Pre-operative diagnosis cannot be often made correctly. Complete recovery is expected after removal of the membrane surgically.

A 39-year-old man presented with abdominal pain, swelling and vomiting of two day's duration. There was no history of peritonitis, abdominal surgery or tuberculosis. Physical examination of the abdomen revealed a distended abdomen, hypoactive bowel sounds, tenderness and rigidity in the whole abdomen. A tender lump was palpated in the right lower quadrant. Routine laboratory workup revealed a total leukocyte count of 17030 cells/ml, and normal serum chemistry. PA X-ray of the chest normal. Plain abdominal X-ray showed few air-fluid levels. Contrast-enhanced abdomen-pelvis computed tomography showed a dilatation up to 4.5 cm in small intestine. Emergency laparotomy was performed through a right paramedian incision. In exploration, small bowel was observed to be dilated, its mesentery was edematous and the whole small and large bowel was covered by a dense whitish and approximately 2 mm thick membrane. The membrane was partially removed, and adhesiolisis of the intestinal loops was performed without bowel resection. After surgery, the patient was tolerated diet without any complication and was discharged, on hospital day 7.

105 A Case Report with Regard to a Perforated Appendix in a Strangulated Femoral Hernia

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The presence of a vermiform appendix in a femoral hernia sac is called De Garengeot hernia. De Garengeot hernia presented with a perforated appendicitis within a strangulated femoral hernia sac is very rare. Pre-operative diagnosis of such cases is very difficult. The frequency of acute appendicitis in a femoral hernia is unknown. High infection rates and mortality has been reported as to this condition.
Methods: A 70 year-old woman presented with a 3 day history of right groin pain and swelling. Physical examination revealed out a groin mass in femoral region on the right side, causing pain whereas other abdominal findings were normal.
Results: The patient underwent surgery and during exploration perforated appendicitis was found in the femoral hernia sac. Appendectomy was performed and the femoral hernia was repaired by suturing the iliopubic tract to Cooper's ligament. Pathological examination of the excised sample demonstrated acute appendicitis with perforation on the appendix. Without any complications the patient was discharged on the third post-operative day.
Conclusion: Despite lack of any previous reports and limited experience, De Garengot hernia could be considered in case of inguinal pathology or nonreductable tender groin mass.

ICU

106 Prevalence of Mortality Among Brain Injured Patients Admitted in the Intensive Care Unit

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Objectives: Determine the prevalence of mortality among the patients admitted in the Intensive care Unit due to severe brain injury.
Materials and methods: 74 adults patients admitted in the Intensive Care Unit due to severe brain injury. In each of them was considered

age, Glasgow coma score at the admission, requirement of invasive mechanical ventilation, risk of infection during the stay and outcome. All database was tested with chi-square and Mantel Haenszel statistical test and a p value less than 0.01 was significant.
Results: 74 patients were admitted in the intensive care unit due to moderate and severe head injury. The mean age was 51 years old. 32 (44%) patients were females. 43 (59%) patients had a coma Glasgow score between 9 up to 13 and 30 (41%) were admitted at the ICU with CGS less than 8. 48 (66%) required invasive mechanical ventilation. Among the patients 51 (70%) suffered from infection within their stay in ICU, 38 (52%) patients survived. The prevalence of mortality among those patients with infection and requirement of invasive mechanical ventilation was 60%.
Conclusion: The prevalence of mortality among the patients with moderate and severe brain injury increased 36% among those patients with infection during their stay in the ICU.

107 Factors Affecting Mortality in Intensive Care Unit Trauma Patients from UAE

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Objectives: To study the factors affecting the mortality of ICU trauma patients treated at Al-Ain Hospital UAE.
Methods: The data of Al-Ain Hospital Trauma Registry were prospectively collected over a period of 3 years (2003–2006). All trauma patients who were admitted to Intensive Care Unit (ICU) were included in the study. Univariate analysis was used to compare gender, age, nationality, mechanism of injury, systolic blood pressure and GCS on arrival, the need for ventilation, presence of head or chest injuries, AIS for both the chest and head injuries and the ISS. Significant factors were then entered into a direct logistic regression.
Results: There were 202 patients (181 males). Mean (range) age was 30 (1-80) year. 22.8% were UAE nationals. The two most common mechanisms of injury were road traffic collisions (62.9%) followed by fall from height (14.4%). The median (range) ISS was 17 (1–41). The mean (SD) ICU stay was 5.7 (6.7) days while the mean (SD) hospital stay was 17.7 (22). The overall mortality was 13.4%. Significant factors that have affected mortality included GCS ($p < 0.0001$), Mechanism of injury ($p = 0.004$), age ($p = 0.004$) and ISS ($p = 0.02$). The best GCS that predicted mortality was 5.5 while the best ISS that predicted mortality was 13.5
Conclusions: RTA is the most common cause of serious trauma in UAE followed by falls. GCS is the most significant factor that predicted mortality in ICU trauma patients.

108 Parenteral Supplementation with Glutamine in Critically Ill Patients with Sepsis

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Introduction: Glutamine is an antioxidant which enhance glutathione levels. In this study our goal is to assess the safety and efficacy of parenteral glutamine on antioxidant capacity and organ dysfunction in septic patients.
Methods: Prospective, randomized study of the septic patients admitted to the surgical intensive care unit (ICU). Patients were randomized to receive either glutamine (Group GLU, $n = 12$) or glutamine + N-acetylcysteine (group NAC, $n = 11$) or a control supplement-placebo (group PLA, $n = 10$) parenterally up to 10 days. Organ dysfunction and clinical outcomes were assessed by daily total Sequential Organ Failure Assessment (SOFA) score over the 10-day study period. Serum total antioxidant capacity (TAC) was measured by CUPRAC method. Also we evaluated procalcitonin (PRC) and C-reactive protein (CRP) levels as infection markers on days 0, 3, 6, and 10.
Results: There was no significant differences between the patients' ages, APACHE II, SOFA scores and infection markers on the day of admission. Group GLU and NAC showed a significant decline of daily total SOFA score (GLU: $p < 0.05$, NAC: $p < 0.001$, PLA: $p = 0.05$) and CRP levels (GLU: $p < 0.05$, NAC: $p < 0.001$, PLA: $p < 0.05$). But PRC levels decreased significantly over time just in group GLU (GLU: $p < 0.001$, NAC: $p = 0.2$, PLA: $p = 0.05$). On the other hand, serum TAC measurements were not significant. The mean ICU length of stay were GLU: 29 ± 19.2, NAC: 12.4 ± 6.7, PLA: 12.5 ± 8.7 (GLU/NAC: $p < 0.05$, GLU/PLA: $p < 0.05$), but in group GLU the overall mortality was significantly lower than NAC and PLA groups (GLU: 25%, NAC: 45%, PLA: 40%).
Conclusion: In septic patients, parenteral supplementation with glutamine results in significantly better recovery of organ function compared with NAC and PLA. We coud not find any significant relationship between TAC levels and clinical outcomes.

109 Haemodialysis for Acute Renal Failure in Trauma Patients

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Background: Acute renal failure (ARF) requiring renal replacement therapy in ICU setting is related to high mortality. The purpose of the study is to assess any indicators of improved survival.
Material and methods: Retrospective study of 64 trauma patients, who underwent haemodialysis over a period of 5 years (patients with penetrating, blunt trauma and burns). Information on pre-hospital and in-hospital resuscitation, trauma scores and physiological scores and daily ICU records were collected. The majority of patients were initially dialysed with CVVHD and later on with SLED.
Results: Of the 64 patients, 47 died and overall mortality was 73.4%. This was highest in the group of burn patients (84%). Survival in all patients irrespective of mechanism of injury was unrelated to RTS, ISS, APACHE II and TRISS. The duration of haemodialysis be-

tween the three different trauma mechanism groups was not significantly different. Age is not a significant predictor of survival. Patients with polyuria at time of initiation of haemodialysis had not a better outcome than those who were oliguric/anuric/normouric.
Conclusions: ARF in trauma patients has a low survival rate. Controversial conclusions have been presented in the literature. In our study, none of the parameters reported in previous publications to affect survival was proven as correct, although our number of patients was comparable to that of other studies. As we are still at an early stage of understanding the predictors and the behaviour of renal failure in the trauma patients there is a need for the planning multicentric prospective studies.

110 Complication Pattern of ICU Trauma Patients Compared to Complication Pattern of Non ICU Trauma Patients; is there Any Difference?!

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Introduction: Registration of complications is important within the framework of quality improvement. Since complications are registered on a daily base in an electronic medical record (EMR) today, very accurate and easy accessible data can be obtained. Our objective is to study the differences of complications and pattern between ICU and non ICU trauma patients.
Methods: All patients admitted to the trauma department between 2002 and 2006 were included. The study group consisted of 4,089 hospital admissions (of which ICU 372) and 3,771 unique patients (of which ICU 346). Patient and demographic characteristics, duration of hospital stay, trauma mechanism, ISS, ICD-10, complications (TRACS), morbidity and mortality were analyzed using Access® and SPSS®.
Results: A total of 2,904 complications were registered. Complications were registered in 20% of patients and most complications were registered within the 15th day of hospital stay. In 741 polytrauma patients (defined as ICD-10 T07 or ISS $\geq$ 18) 567 complications were registered. In the ICU group 745 (469 during ICU stay) complications were registered in 182 unique patients.
Overall complication groups in trauma patients consist of: infection (24.4%), Musculoskeletal (22.3%), Provider (13.7%) and Pulmonary (8.7%). Complication groups in ICU trauma patients however consist of: pulmonary (26.1%), miscellaneous (19.9%), musculoskeletal (14.1%) and infection (12.6%).
Conclusion: ICU trauma patients are almost twice more likely to be at risk for developing complications then non-ICU trauma patients. Furthermore ICU trauma patients have a completely different complication pattern then non ICU trauma patients which should be noticed. Especially pulmonary complications are registered frequently.

111 Complications in the ICU Trauma Patient; Which Complications are Related With an Adverse Outcome?

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Introduction: Complications are twice more common in ICU trauma patients then in non ICU trauma patients. Thorough registration of complications of ICU trauma patients might provide information whether a complication is suggestive for an adverse outcome. Our objective is to identify risk factors predicting adverse outcome based on complication registration.
Methods: All trauma patients admitted to the ICU between 2002 and 2006 were included. The study group consisted of 372 admissions and 346 unique patients. Patient characteristics, diagnosis (ICD-10), complications (TRACS), survival and the reason of ICU admission were studied and analyzed using Access® and SPSS®.
Results: Complications of 33 nonsurvivors were compared with complications of 313 survivors. The electronic medical file (EMF) provided complication information for 13 of 33 nonsurvivors and for 169 of 313 survivors. A total of 469 complications were registered during ICU admission and a supplement of 203 complications after ICU discharge, primarily pulmonary related complications. If a complications has been registered in both survivors and nonsurvivors a mean of three complications are registered. Amongst the nonsurvivors 23/33 patients were primarily admitted to the ICU and 3/33 were admitted because of complications. ARDS (RR 2,64) and Sepsis-like syndrome (RR 3,44) are complications related with an adverse outcome (death).
Conclusion: Complications are registered in 50% of patients admitted to the ICU. Nonsurvivors are not likely to develop more complications then survivors, although they do have a different complication pattern. Both ARDS and Sepsis-like syndrome correlate with substantially increased risk of death.

112 A Novel Fuzzy-logic Decision Support System for Weaning from Mechanical Ventilation: Design and Implementation Over Mathematical Simulation

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Weaning from mechanical ventilation constitutes a dynamic process, and represents one of the most challenging decisions in the management of critically ill patients. Success of weaning depends on multiple factors, and wrong decisions result either in prolonged mechanical ventilation, or reintubation and nosocomial pneumonia. Many mathematical indexes have been described and used for decision making with varying successes. We have developed a multiparameter fuzzy-logic decision support system for prediction of success of weaning from mechanical ventilator. After fuzzifying relevant numerical variables, this system evaluates the appropriateness of perfusion, arterial blood gases, mechanical properties, and gas exchange, and converts these to a weaning probability. System has been designed using jFuzzyLogic package and uses Mamdani center of gravity algorithm for defuzzification.
After optimization system has been tested over a software that creates random clinical scenarios within a range that can represent challenging patients. For each scenario Jabour' weaning index, rapid

shallow breathing index (RSBI) and pressure time index have also been calculated and compared with fuzzy-logic system.
Results indicate that currently used indexes and especially RSBI, disregard many important parameters and shown a potential to fail in many critical scenarios (in 52% of simulations). Additionally we would like to discuss the potential of fuzzy-logic in clinical decision support, and design and optimization issues.

113 Comparison of a Novel Fuzzy-logic Trauma Related Mortality Predictor and Commonly Used Trauma Scoring Systems: Emphasis on the Importance of Response to Resuscitation

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Trauma scoring systems used for uniform reporting and evaluation of trauma outcomes include physiologic, anatomic and combined systems. These systems have already been evaluated and shown to have accurate performance. We proposed a possible effect of response to resuscitation on the performance of trauma scoring. Data necessary for calculation of ISS, RTS, TRISS and ASCOT systems have been retrospectively collected from the records of last 150 consecutive trauma patients admitted to our surgical critical care unit. Score and mortality prediction calculations have been performed over a software developed in our department, at three time points, at admission to ER, after 1 h of resuscitation, and at ICU admission. Additionally a fuzzy-logic inference system which uses physiologic variables as input has been designed for trauma related mortality prediction and applied to the same dataset. Performances of scoring systems and fuzzy-logic inference system have been evaluated. Results indicated that all systems have good discrimination, but variable calibration characteristics. For all systems evaluated response to resuscitation has effected system performance and scores and predicted mortality values calculated after resuscitation have shown better discrimination. Fuzzy-logic inference system designed has shown discrimination characteristics comparable but not better then the other systems, which indicate the importance of inclusion of specific organ injuries in trauma scoring and mortality prediction.

114 A Safe and Minimally-invasive Daily Monitoring of Immuno-inflammatory Status in a Mouse Model of Critical Illness

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Daily monitoring of immune/inflammatory status is a fundamental procedure in the ICU. In small animal disease models such a surveillance is challenging given the limited blood volume available. To validate a new method for daily immuno-inflammatory monitoring in critically ill (septic) mice, we followed their short/long-term survival, organ function and inflammatory status. Furthermore, the reliability of complete blood count (CBC) differential was tested in re-suspended blood cell pellet. Female OF-1 and CD-1 mice were subjected to cecal ligation and puncture (CLP). 20 µl blood samples were collected (facial vein puncture) from half of each strain daily for 5 days or on day 5 only. Additionally, 35 µl (diluted 1:10) volume was collected (OF-1 only) and divided to compare CBCs in whole versus resuspended blood. There were no differences in 5/28-day CLP mortality. For both strains, changes in circulating interleukin-6 and chemical parameters (ALT, LDH, BUN, glucose) were comparable between sampled subgroups. 20 µl sampling in OF-1 mice caused a decrease of 10% in RBC and 11% in Hb (both $p < 0.05$). In CD-1 animals, both RBC and Hb showed a similar decrease of 13% ($p > 0.05$). Platelet and WBC counts were unaffected. CBC comparison displayed a high correlation for all cell types ($r > 0.9$, slope > 0.9) except lymphocytes ($r > 0.5$,slope > 0.6). This was reproduced in non-CLP mice. The results indicate the minimal biological effect of daily sampling upon septic mice. CBC differential from resuspended pellet is highly reliable. This newly validated facial vein punture sampling protocol allows multi-directional monitoring in mouse models of critical illness such as acute peritonitis.

115 Correlation of Procalcitonin and C-reactive Protein During the Intensive Care Unit Course of Multiple-trauma Patients

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Introduction: A comparison of the amount of procalcitonin (PCT) with that of C-reactive protein (CRP) during various types of and severities of multiple trauma., and their relation to trauma-related complications, was performed. The aim of this study was to describe the amount of and the time course of PCT and CRP induction in patients with various types of and severities of high-velocity trauma.
Methods: 95 adult trauma patients admitted to the intensive care unit of our tertiary care hospital were evaluated in a prospective case study. During the initial 24 h after trauma the Injury Acute Physiology and Chronic Health Evaluation II score were evaluated. PCT, CRP, the sepsis criteria (American College of Chest Physicians/ Society of Critical Care Medicine definitions). Measured at days 1–7, as well as at days 14 and 21, concluding the observation period with the 28-day survival.
Results: The induction of PCT and CRP varied in patients suffering from trauma. PCT increased only moderately in most patients and peaked at day 1–2 after trauma, the concentrations rapidly declining thereafter.
Conclusion: PCT and CRP are increasingly used as markers for the diagnosis of sepsis and infection. PCT is elevated in patients with pulmonary dysfunction and noninfectious SIRS. However, both parameters are also induced independent from infection (for example following cardiogenic shock, major surgery, or mechanical trauma). PCT and CRP were induced in various amounts in patients with mechanical trauma.
Editor to self:: seçilmiş bildiri

NEUROSURGERY

116 Recombinant Human Erythropoietin in Severe Traumatic Brain Injury Improves Survival

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Introduction: Recombinant human erythropoietin (Epo) has been associated with improved outcome in multiple experimental brain injury models. However, no clinical series documenting effects of Epo in traumatic brain injury (TBI) exist.
Methods: This is a retrospective study of all patients admitted to a level I trauma center from January 1996 to December 2007 with severe TBI (head AIS ≥ 3) and hospital length of stay ≥ 3 days. Patients who received Epo within 30 days after admission (Epo +) were blindly matched to patients not receiving Epo (Epo–) for age, gender, injury mechanism, vital signs on admission, GCS, AIS for each body area (head, chest, abdomen, and extremity), ISS, and for in-hospital anemia (hemoglobin < 10 g/dL). Outcomes included in-hospital mortality and transfusion requirements.
Results: During the study period, 1,651 patients with severe TBI were reviewed. Of those, 89 patients (5%) received Epo. Administration of Epo was associated with significantly lower in-hospital mortality compared to Epo– counterparts [8 vs. 20%; OR (95% CI): 0.34 (0.13 –0.85), p = 0.018]. Transfusion requirements were similar in Epo+ and Epo– groups (mean cumulative volume of red blood cells transfused at hospital day 30: 1,200 ± 1,300 mL vs. 1,600 ± 2,200 mL, respectively; p = 0.13).
Conclusion: Recombinant human erythropoietin demonstrated a significant survival advantage in patients with severe TBI. Administration of Epo did not have an impact on transfusion requirements. Further studies are warranted to validate this observed survival benefit.

117 Cerebral Gunshot Wounds: a Score Based on 3 Clinical Parameters to Predict The Risk of Early Mortality

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Background: To provide a score to predict the risk of early mortality after single craniocerebral gunshot wound (GSW) based on three clinical parameters.
Methods: All patients admitted to Baragwanath Hospital, Johannesburg, South Africa, between October 2000 and May 2005 for an isolated single craniocerebral GSW were retrospectively evaluated for the documentation of (a) blood pressure on admission, (b) inspection of the bullet entry and exit site, and (c) initial consciousness (n = 214).
Results: Conscious GSW victims had an early mortality risk of 8.3%, unconscious patients a more than fourfold higher risk (39.2%). Patients with a systolic blood pressure between 100 and 199 mmHg had a 18.2% risk of mortality. Hypotension (< 100 mmHg) doubled this risk (37.7%) and severe hypertension (^{3}200 mmHg) was associated with an even higher mortality rate of 57.1%. Patients without brain spilling out of the wound (''non-oozer'') exhibited a mortality of 19.7%, whereas it was twice as high (43.3%) in patients with brain spill (''oozer''). By logistic regression a prognostic index (PI) for each variant of the evaluated parameters could be established: non-oozer: 0, oozer: 1, conscious: 0, unconscious: 2, 100£RRsys < 200 mmHg: 0, RRsys < 100 mmHg: 1, RRsys ^{3}200 mmHg: 2. This resulted in a score (0–5), by which the individual risk of early mortality after GSW can be anticipated.
Conclusions: Three immediately obtainable clinical parameters were evaluated and a score for predicting the risk of early mortality after a single craniocerebral GSW was established.

118 Gunshot Wounds to the Head in Civilian Practice

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Gunshot wounds to the head are associated with poor outcome. We reviewed data to identify prognostic factors. We performed a retrospective study of all patients admitted to a Level 1 trauma center with isolated gunshot injury to the head during six and half years. Data collected included demographics, mechanism of injury, prehospital and resuscitation room data, and initial CT scan characteristics. The primary outcome measure was the Glasgow Outcome Scale (GOS). Seventy-two patients with isolated gunshot wounds to the head were admitted. Overall mortality was 58%. The mortality for patients with an initial GCS of < 8 was 81 versus 14% for those with initial GCS > 8 (p < 0.0001). Fifty percent had pupillary abnormalities on arrival at the Emergency Department. Mortality in this group was 78 versus 53% in those with normal pupillary reflexes (p = 0.06). Elevated plasma lactate was associated with nonsurvival. Thirteen percent of survivors were assessed as able to live independently after their injury. Civilian gunshot injury to the head is related to high mortality. Indicators of outcome are the admission GCS score, pupillary abnormality, metabolic acidosis, and CT pattern of severe injury. The majority of deaths occur at an early stage. Among survivors the functional outcome can be acceptable.
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Editor to self:: seçilmiş bildiri olabilir

119 Secondary Intracranial Hemorrhage after Mild Head Injury in Patients with Low-dose Aspirin Prophylaxis

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Background: Low-dose aspirin (LDA) therapy is accepted as a major risk factor for intracranial hemorrhages (ICH) in head injuries. In the literature, there is no evidence concerning the incidence of secondary intracranial hemorrhagic events (SIHE) in patients with LDA prophylaxis that had negative primary CT-scan of the head.
Methods: Prospective study. We enrolled 100 consecutive trauma patients older than 65 years presenting in a Level I urban trauma center following a mild head injury (GCS score of 15) who had LDA prophylaxis. Patients included had a negative primary head CT-scan concerning ICH. For analysis of the incidence of SIHEs patients had routine repeat head CT (RRHCT) after 12 to 24 h.
Results: 61 patients were female and 39 male. Mean age was 81 ± 10 years. Injury mechanism was a level fall in 84 cases and others in 16. In four patients (4%) a SIHE was detected in the RRHCT ($p < 0.00001$). In 2 patients (2%) major secondary ICH had occurred without neurological deterioration at the time of RRHCT with fatal outcome in one patient and neurosurgical intervention in another. The remaining two patients (2%) had minor SIHE with uneventful clinical course.
Conclusions: The incidence of SIHE has been neglected until now. The current study revealed that patients with LDA prophylaxis after mild head injury with negative primary head CT should be subjected to RRHCT within 12–24 h to accurately identify SIHE. In alternative to RRHCT prolonged in hospital observation for at least 48 h is recommended.

120 The Effects of Mannitol and Melatonin on the Blood and Brain Malondialdehyde (MDA) Levels in Head Trauma

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Introduction and objectives: The aim of this study is to compare the effects of the mannitol and melatonin on the levels of blood and brain malondialdehyde (MDA).
Methods: In the study, 24 New Zealand type rabbits were used. The test subjects were divided into four groups; Sham (n = 6), control (n = 6), mannitol (n = 6) and melatonin (n = 6) groups. Blood cerebrum tissue samples were taken to research for MDA in the control group. Head trauma was applied with Feeney method to the rabbits in the other groups. Venose blood samples were taken before and after trauma to observe MDA. 100 mg/kg melatonin was given to the melatonin group, and 2 g/kg mannitol was given to mannitol group intravenously. Blood samples were taken at 12th and 36th hours post-treatment. The test subjects were sacrificed 36 h after the treatment when their cerebral tissue samples were taken. MDA was searched with Drapper-Hadley and Uchiama–Mihara method. Kruskal Wallis Variance Analysis and Bon Ferroni corrected Mann Whitney U tests were used to compare the data.
Results: The mean MDA level of cerebral tissue in the melatonin group (0.68 ± 0.27) was significantly lower than sham group (1.82 ± 0.32) and mannitol group (1.49 ± 0.19) ($p = 0.006, 0.012$ respectively).
Conclusions: Melatonin has more therapeutic effect on the MDA levels of cerebral tissue in the experimental head trauma when compared with mannitole. Melatonin which can be included in the therapy of the cases with head trauma at the clinic can accelerate recovery reducing the cerebral damage.

121 Head Injury in Al-Ain City, United Arab Emirates

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Objectives: To analyze epidemiological and clinical features of head injury in an Al-Ain city, UAE.
Methods: A Trauma Registry was established in Al-Ain Hospital in 2003. Patients who were admitted to the hospital for more than 24 h, those who died in the Emergency Department or after admission were included in the registry. All patients who were treated for head injury in the period of 2003–2006 were studied. Demographic and clinical variables were analyzed. Statistical analysis was performed using SPSS 15.0.
Results: 590 patients were studied. 521 were males (88.3%). Majority of trauma occurred in the street and highway (n = 383, 65.1%), followed by work (n = 83, 14.1%). The Mechanism of injury included road traffic collision (n = 371, 63%), fall from height (n = 70, 11.7%), fall down (n = 43, 7.3%). 123 patients (20.9%) were admitted to the ICU. Glasgow coma scale (GCS) was ≤ 8 in 70 patients (12%), between 9 and 12 in 33 (5.6%), and between 13 and 15 in 474 patients (81.3%). Mortality rate was 6% (n = 35). Patients who died had significantly higher ISS ($p < 0.0001$), lower GCS, ($p < 0.0001$), and higher head AIS ($p < 0.0001$).
Conclusions: Road traffic collision is the leading cause of head injury in our setting. In this study population, head injury was severe, more than one fifth of the cases were admitted to the ICU, and GCS was below 8 in 12%. Patients who died had significantly higher ISS, lower GCS, and higher head AIS.

122 Emergency Burr-hole Craniotomy May be Hazardous for Patients with Critical Head Trauma

Mitsuaki Kojima[1]*, Atsushi Shiraishi*[1]*, Ayako Yoshiuki*[2]*, Keita Nakatsutsumi*[2]*, Eiji Isotani*[1]*, Yasuhiro Otmo*[1]
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Backgrounds and objectives: Benefits of emergency burr-hole craniotomy (or evacuation) for patients with critical head trauma remained unclear. Our study objective is to compare the effectiveness of burr-hole craniotomy to decompressive craniotomy using data from a large-scaled, multicenter and nationwide registry of hospitalized trauma patients in Japan.
Materials and methods: Among a total of 20257 records registered in Japan Trauma Data Bank, we selected patients with critical head trauma which were scored as AIS 5 (critical injury on the abbreviated injury scale) on head and underwent either of burr-hole craniotomy or decompressive craniotomy. Parameters of the trauma injury severity score (TRISS) were used to adjust the baseline trauma severity. Univariate analysis and multivariate logistic regression analysis estimated the relative risk of inhospital death.
Results: A total of 472 records matched the selection. 33 of 472 patients (7.9%) primarily underwent burr-hole craniotomy and 439 of 472 patients (92.1%) directly underwent decompressive craniotomy. Inhospital mortality was 2.5–fold higher in patients with burr-hole craniotomy (75 vs. 30%, $p < 0.0001$). After adjustments of baseline trauma severity with parameters of TRISS, burr-hole craniotomy remained significant to predict inhospital trauma death (odds ratio: 4.7, 95% confident interval: 1.9–11.2, $p < 0.0001$).
Conclusions: In patients with critical head trauma, our retrospective observation suggested that emergency burr-hole craniotomy may be highly hazardous and should not be routinely undergone until the prospective verification study would be obtained.

POLYTRAUMA

123 Mass Transfusion in Severe Trauma Patients: Incidence, Outcomes and Predicting Scores

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Background and objectives: Mass transfusion (MT) is associated with a poor prognosis in trauma patients and is an independent risk factor for mortality. In 2006 the German Trauma Society introduced the TASH-Score, which estimates the probability of MT following a multiple trauma. Our aims are to determine MT incidence and outcomes in our environment, and to analyze the value of the TASH-score in our series.
Methods: Retrospective analysis of the patients registered in our Severe Trauma Data Base between 2000 and 2007. We considered MT as the transfusion of 10 or more units in the first 24 h.
Results: We admitted 887 severe trauma patients during the studied period, and 81 (9.1%) needed a MT. The majority of these patients suffered a blunt trauma [67 (83%)] and the main cause was a motor-vehicle accident [48 (59%)]. The mean RTS was 9.6 (SD 2.3), ISS 30.3 (SD 10.5) and NISS 34.6 (SD 12.3). We registered 39 deaths in this group. TASH-score had an area under the curve of 0.89 (CI = 0.85–0.94) in the ROC curve analysis. Although all the TASH-score variables had a significant association with MT in the univariate analysis, pelvic fracture had not a strong relation, improving the area under the curve (0.91; CI = 0.87–0.95) of the score if we reduced its weight in the model.
Conclusions: MT is associated to a high mortality, 48.1% in our study. TASH-score had a good predictive value in our series but over-estimated the relationship between unstable pelvic fracture and MT.

124 Epidemiology and Trauma Patterns in 188 Consecutive Patients Fallen from Grat Height

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Introduction: Vertical trauma injuries represent different trauma combinations that need specific treatment. Our aim in this study was to define the epidemiological pattern and evolution of a group of patients with severe trauma following high fall.
Methods: Prospective analysis of the Trauma Registry '' Traumasur''(Madrid, Spain). We analyzed demographic characteristics. RTS, ISS and NISS scores, PS, injury type, AO-OTA classification and evolution were studied.
Results: 188 patients were admitted following high fall between 2003 and 2008. Labor accident (40%), unintentional (24,7%) and intentional (22%) were the most frequent etiologies. Mean age was 39 years. 100% of the patients in the labor related trauma were men, and 63% in the intencional fall. Mean ISS score was 27.3 and NISS was 34.1. Trauma severity according to ISS and NISS scores was higher in the high falls group than in other etiologies of severe trauma. Spine and tibia were the most frequent damaged bones. The most frequent injury combination was pelvis and long bone. Mortality was 14.3%. Mortality rates among the suicidal attempts and labor related group were 21.3 and 17%, respectively. Exanguination and BTI were the most frequent causes of mortality among the intentional and accidental groups respectively.
Discussion: Vertical deceleration injuries after high fall are a frequent cause of severe blunt trauma. Patients in the intentional group present different injury patterns, have higher severity scores and higher mortality. The etiology of the mortality varies between the jumpers and fallers group.
Keywords: high falls, suicidal attempt, pattern of injury.

125 Surgical Management of Penetrating Neck Injuries

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Introduction: Management of penetrating neck injuries is complicated by the anatomic high density relationship between vascular, upper respiratory, digestive, and neurological structures. Up to 30% of the injuries involve multiple structures.
Methods: Expeditious systematic assessment, decision making and appropriate treatment is required to minimize catastrophic complications. We reviewed our experience with penetrating neck injuries. Between July 2008 and October 2008, eight patients with this below injuries were surgically managed, this are summarized as two tracheal lesions, four vascular complex cases, one brachial plexus and one esophago – vertebral lesion. Operative urgent management is advocated in unstable patients.

Conclusion: During war scenarios, with poor diagnostic challenge, the surgeon must demonstrate a perfect knowledge of anatomy, and surgical technique. Penetrating neck injuries are uncommon in children and when they do occur they can be a challenge to manage. One patient died, seven patients were discharged from hospital. We conclude that for zone II, mandatory surgical exploration by an expertise surgeon is a safe procedure and that conservative management must be undertaken with extreme caution.

Keywords: Neck penetrating injuries, vascular packing,massive neck bleeding.

126 The Influence of Routine Computed Tomography on the Average Injury Severity Score

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Background: Trauma remains a major cause of death and disability in our world. Many scoring systems have been proposed to predict mortality and survival. This study was performed to evaluate the influence of routine thoracoabdominal CT on the predicted survival analysis according to the TRISS method.

Methods: A prospective cohort study was conducted. In a 3-year period (2005–2008) we included 1,047 patients who were admitted to our emergency department after having sustained a blunt high energy trauma. M, Z and W statistics were calculated. In all patients we calculated ISS and Predicted survival (according MTOS) using two different algorithms: ''routine CT'' and ''CT on indication''.

Results: Based on the injuries detected by CT scan on indication, mean ISS was 14.6, resulting in a predicted survival of 87.45% using the TRISS methodology. Routine thoracoabdominal CT scan resulted in a mean ISS of 16.9, resulting in a predicted survival of 86.27%. There was a significant difference in predicted survival between these two groups ($p = 0.016$). Observed mortality was 5.44%. The M-score was 0.866; the Z-statistic was –11.7 and a W-value of 8.28 was calculated.

Conclusion: Routine thoracoabdominal CT-scan in blunt high energy trauma patients reveals more diagnosis, resulting in higher ISS. Comparing the outcome of our hospital with the MTOS, we have eight survivors more than expected in each 100 patients treated for injuries due to blunt high energy trauma. Improved injury detection facilitates a better and more dedicated care.

127 Functional Outcome and Quality of Life in Victims of Terrorist Explosions as Compared to Conventional Trauma

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Introduction and objectives: The POLO chart for trauma quantitates overall quality of life (SF-36) with a specific component for trauma (TOP). We have measured that in victims of the Madrid terrorist bombings of 2004, comparing them to victims of conventional severe blunt trauma.

Materials and methods: Descriptive case–control study, with a match by age and ISS. All patients were assessed by personal interview, where they completed the POLO chart forms.

Results: 58 patients were included, 32 study-cases, and 26 controls. Both groups were comparable in age (mean: 37 years), ISS, and date of injury. In the SF-36, the overall ''physical'' and the values of ''physical functioning'', ''role physical'' and ''body pain'' didn't show differences between groups, whereas ''general health'', ''vitality'', ''social functioning'', ''role emotional'' and ''well being'' showed considerably lower values in the study-cases group, also reflected in an lower value in the overall ''psychological'' and ''total'' items. The TOP showed more depression (31 vs. 23%; $p = 0.49$), anxiety (38 vs. 19%; $p = 0.128$) and postraumatic stress syndrome (50 vs. 23%; $p = 0.036$) in the study-cases group. Social interaction alterations were more frequent (19 vs. 3%; $p = 0.080$) in the control group. ''Mental Functioning'' alterations were very prevalent in both groups (66% of study-cases and 50% of controls) in spite of the elapsed time.

Conclusion: Victims of terrorist bombings show a greater deterioration of their emotional and psychological universe than casualties of more conventional trauma and are more prone to depression, anxiety, and posttraumatic stress syndrome, but with less social interaction alterations.

Author to editor: Trauma outcome is still mainly measured by risk-adjusted mortality and preventable deaths, but there are few data on functional outcome and quality of life. On other hand, victims of terrorist explosions represent a unique group of trauma patients where those data might be different from the more conventional trauma group

128 Primary Management of the Posterior Urethra by Traction Over the Foley Catheter in Patients with Pelvic Fractures

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Background: Pelvic fractures with injury to the posterior urethra are quite rare. There is no uniform policy regarding treatment. Operative realignment of the disrupted urethra over the Foley catheter is an old method giving the best results with regard to the serious squeals of the injury, such as incontinence, impotence and stricture of the urethra. However, it is usually performed after initial operative procedure of stabilization of fractured pelvis.

Patients and methods: We performed a retrospective analysis of 17 polytraumatized patients with type C pelvic fractures and complete disruption of the posterior urethra treated by traction over the Foley catheter in one single surgical procedure in teamwork of traumatologist and urologist.

Results: Nine patients did not have any complications 1 year after the procedure. In eight cases we found short partial stenoses of the

posterior urethra, which were successfully resolved by intraureteral dilatation with bougienage intrauretral resection or in one case by transperitoneal resection. There was no impotence and no incontinence found.
Conclusions: The method used was successful and offered good results with few complications and avoiding additional interventions.

129 Role for Soluble Fibrinogen to Inhibit Neutrophil Adhesion and Sequestration after Trauma

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Introduction: Soluble fibrinogen (sFg) is an acute phase protein. In inflammation e.g. following trauma it increases up to 10 mg/ml. Complications after trauma such as ARDS and MOF are mediated by neutrophils through adhesion to endothelial cells (EC) or sequestration in the vasculature: Adhesion-molecule dependent processes occur in post-capillary venules whereas adhesion-molecule independent retention occurs in micro-capillaries. The latter requires process F-actin polymerization of the neutrophil cytoskeleton. We show that sFg can reduce both types of neutrophil-EC interactions.
Methods: Neutrophil adhesion to EC was studied in an in vitro flow-chamber. Cells, pre-incubated with various concentrations sFg or albumin, were perfused over TNF activated or chemokine presenting human umbilical vein endothelial cells (HUVEC) (1.5 dyn/cm^2) and percentages of adhered cells were analyzed. F-actin polymerization was assessed by flow-cytometry.
Results: Acute phase concentrations of sFg resulted in 20–30% adhered neutrophils on activated EC compared to albumin (60–70%). sFg did not decrease adherence in the presence of chemokines (IL-8/C5a). Neutrophils incubated with sFg appeared round, a feature of unactivated cells. sFg decreased the length of chemo-attractant-induced actin polymerization. sFg did not activate neutrophils, measured by intracellular [Ca2+], p-Erk or Nfκb phosphorylation.
Conclusion: Acute phase concentrations of sFg reduce neutrophil adherence and sequestration. Achievement of high plasma concentration of sFg directly after shock has the potential to reduce neutrophil adherence. Resuscitation using sFg or Fg-derived peptides might prevent ARDS and MOF.

130 The Effects on Clinical Outcome of High FFP: PRBC Transfusion Ratios in Multitrauma Patients

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Introduction: Recent studies of both civilian and combat traumatic injury suggest that high fresh frozen plasma (FFP): packed red blood cells (PRBC) transfusion ratios are associated with lower mortality. The purpose of this study was to evaluate the effect of different transfusion ratios on the survival of multitrauma patients in our Level-1 Trauma center.
Methods: Retrospective analysis of a database of all multitrauma patients with an ISS ≥ 16 who were presented in the trauma room (TR) between November 2005 and November 2007. Patients who suffered from blunt or penetrating injury and received ≥ 8 units of PRBC in the first 24 h were included. High transfusion ratio was defined as $\geq$ 1:1.5 (FFP:PRBC). The patients' outcome was classified as 30-day survivors and nonsurvivors.
Results: From the 320 multitrauma patients a total of 42 patients with a median ISS of 29.5 met the study criteria. They received a median of 13 PRBCs and 6 FFPs. Six patients had a high FFP:PRBC ratio and 36 a low FFP:PRBC ratio. Of the 6 patients who received a high transfusion ratio 1 (17%) died within 6 h compared with 10 out of the 13 (77%) patients who received a low transfusion ratio ($p < 0.024$).
Of the 42 patients 19 died within 30 days; there was no improved survival for high FFP:PRBC transfusion ratios ($p = 0.695$).
Conclusion: Our multitrauma population receiving ≥1:1.5 FFP:PRBC transfusion ratios when requiring massive transfusion show a prolonged survival but show no decrease in 30-day mortality than a low transfusion rate.
Editor to self: seçilmiş bildiri

131 Is There A Correlation Between Injury Severity Score and Blood Urea Nitrogen, Myoglobin, Creatin Phosphokinase

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Objective: Crush injury or traumatic rhabdomyolysis is caused by crushing of large muscle mass, usually of the femoral and gluteal compartment. Crush syndrome is general manifestation of crush injury with acute renal failure (ARF). ARF is caused by deposition of myoglobin in distal tubules. The concentration of serum creatin phosphokinase and myoglobin is an indicator of the extent of injured muscle. We investigated the association between Injury Severity Score (ISS) and BUN, Myoglobin and CPK.
Materials and methods: In a prospective study the concentration of myoglobin, BUN and CPK was measured in 45 patients admitted to the Ankara University, Faculty of Medicine, Emergency Department with injuries of lower extremities and pelvis as a part of severe trauma. Degree of association between variables was evaluated by Spearman's Correlation Coefficient test.
Results: According to 45 multiple trauma patients' (30 male and 15 female) data. The median age was 41.68 (range 16–87). In this study there is a correlation between ISS and CPK ($r = 0.499$, $p = 0.004$), ISS and myoglobin ($r = 0.495$, $p = 0.004$). Also CPK and myoglobin's correlation was very high. The increase of myoglobin and CPK is not correlated with BUN.
Conclusion: The rhabdomyolysis actually remain a severe disease with high mortality caused principally by visceral lesions related to trauma. The indicator of injury considered with ISS. There is a parallelism between ISS, myoglobin and CPK, but according to the level of the damage myoglobin increase is not related with BUN as a indicator of ARF.

132 Improved Survival after Establishing a Dedicated Trauma Unit in a Major Scandinavian Trauma Centre

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Background: In addition to the availability of all surgical specialties and necessary support functions, a trauma center thus requires a dedicated multidisciplinary trauma service. A formal Trauma Unit was established in our institution in 2005. This has resulted in systematic training of trauma teams, specific surgical training of the surgeons, a robust quality improvement program, daily follow-up routines for admitted trauma patients, and updated treatment protocols. We hypothesized that this increased multidisciplinary focus on trauma care would be accompanied by increased survival.
Methods: Trauma Registry data compare the period before the Trauma Unit was established (2001–2004) with the period after (2005–2007). The primary endpoint was 30 day mortality (without adjusting for other variables) in the total population and in the subgroups of severely (ISS > 15) and critically (ISS > 24) injured. The results were compared with internationally available logistic regression models for survival (adjusted for age, injury grade, physiology and mechanism of injury), using W-statistics. The TRISS-model with coefficients from the National Trauma Data Bank (2005) (W_NTDB 05) and the UK TARN (W_TARN) were chosen.
Results: Crude mortality rate for severely and critically injured decreased from 21 to 14% and 33 to 21%, respectively. W-statistics indicate increased survival for the period after strengthening the institutional trauma care organization with a formal Trauma Unit. The improvement increases with increasing severity of injury, reaching significance for the critically injured.
Conclusion: Organizing trauma care in a formal Trauma Unit was followed by improved survival of the severely and critically injured patients.

133 Suicide in Trauma Patients: is There a Need for a Protocol for Intervention?

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Patients and methods: From January 2002 to May 2007, 523 patients were identified as self inflicted injury in a Trauma Level One center retrospectively. 209 patients were excluded due to accidental injury or assault, 57 charts were not available. 42 inmate patients were excluded. All patients who survived had psychiatric evaluation. Records analyzed included age, gender, motive, past psychiatric history, medication, method, location of injury, and disposition. Drug overdoses were not included because they did not trigger trauma alert.
Results: 215 patients attempted suicide. 149 patients (101 men, 48 women) survived and 66 patients died. Knife was used in majority of cases 93 (43%). Firearm 79 (37%) was second choice. The fatality of gun was 65% whereas stab wound led to death on 3% of the cases. Mortality of hanging (3rd) was 50%. History of psychiatric disorder was identified in 52% of patients. 12% were repeat offenders. Drug was involved in 13% of the cases. 39 of 73 identified motives were related to interpersonal relationships. 61% required inpatient hospitalization, 12% treated as an outpatient and 19% went home. No follow up was available after discharge.
Conclusion: Very few trauma centers have psychiatric units and patients are transferred for inpatient treatment and lost for follow up. Considering the facts that 33% are new patients, 12% repeat offenders, and 10% of trauma mortality is due to suicide, there is a need for a suicide prevention and intervention protocol within the trauma system.
Author to editor: Although it is under emergency medicine, this is clearly a trauma issue, but there was no other choice listed to sumbit the abstract. Thank you.

134 Ectropion and Entropion Incidence after Facial Fracture Repair: a Retrospective Study Comparing Subtarsal, Subciliary, and Transconjunctival Incisions

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Introduction: Many incisional techniques are described for access to the craniofacial skeleton for fracture repair. Common incisions for exposure include the subciliary, subtarsal and transconjunctival approaches, however, each has a distinct set of complications. The goal of our study was to examine lower lid malposition associated with these incisions.
Methods: We identified all operative facial fractures at Beth Israel Deaconess Medical Center from 1998 to 2008. Facial fractures requiring lower eyelid incisions were examined. A retrospective chart review was performed identifying post-operative complications including ectropion, entropion, lid edema, and hypertrophic scarring.
Results: A total of 180 zygomatic and/or orbital fractures were identified with 74 subtarsal (41%), 56 subciliary (31%), 45 transconjunctival (25%) incisions, and 5 laceration (3%). The risk of ectropion was highest in subciliary incisions (13.2%, $p = 0.018$), however, only one case required operative management. Entropion was found in two cases after transconjunctival incisions ($p = 0.108$); both required operative management. Lid edema was present in 1.4% of subtarsal and 8.9% of subciliary incisions ($p = 0.016$). One hypertrophic scar was seen with the subtarsal and two cases with the subciliary approach ($p = 0.545$).
Conclusions: Lower eyelid malposition occurs after any lower eyelid incisions for facial fracture repair. Ectropion is most commonly seen in subciliary incisions, while entropion is rare. A subtarsal incision has a low risk of malposition, however is associated with hypertrophic scars. Although choice of incision can be based on surgeon preference, a thorough patient discussion must include potential complications with each approach.

135 Medical Errors in Traumatology

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Until recently medical error was prohibited subject. Nowadays lawmakers and the people demand open investigations and public assertion of the case.
In traumatology things happen quickly, data are often incomplete and therefore misleading and there is also pressure for quick decision.

In dealing with the matter we distinct among wrong decisions based on insufficient data and errors due to systemic faults or individual incompetence or negligence. Possible systemic faults are at every level of treatment: taking history, clinical examination, diagnostics, decision making, treatment procedures and even rehabilitation. Most analysed errors occured when patient was handed over to another team or another level of treatment. Haste and insufficient or inadequate report leads to wrong assumptions and – if that is not discovered in time – to wrong treatment.
On personal level usual mistake was being satisfied when one injury was found and others were missed to insufficient exam or diagnostics. Dealing with unfamiliar drugs lead to overdosage and sometimes death of the patient.
To avoid such disasters extra training was added to medical school and medical students systematically approach the subject. At the emergency department adherence to protocols is encouraged, especially in cases of unresponsive patients. On hospital level enough time should be provided for attending physicians to make thorough rounds. This should provide much needed redundancy in the age of maximum efficiency. Unfortunately we feel it is still not possible to implement measures of self-reporting as known by the airline industry due to inadequate law regulation!
Author to editor: Measures for preventing medical errors in trauma department is showed.

136 Missing Injuries and Trauma Fatalities: a Review of 35 Cases

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Background and Aim: Missed injuries adversely affect patient outcome and damage physician, as well as institutional, credibility. Autopsies are useful in uncovering missed injuries or undiagnosed conditions that contribute to death after injury. The aim of this paper is to analyze and compare medical documentation and autopsies findings in searching for missing injuries in trauma fatalities treated in our hospital.
Patients and Methods: We analyzed data for patients died after trauma in 4 years period (January 1st, 2004–December 31st, 2007) in General Hospital Karlovac, Croatia (Level II Trauma Center). Dead on arrival were excluded.
Results: We analyzed data for 35 patients, 27 (77.1%) male and 8 (22.9%) female with a median age 48.2 years (range 20–83 years). Eighteen patients (51.4%) died in the first 24 h after admission. Twenty three (65.7%) patients had difference between clinical and autopsy diagnosis. We found 35 missing injuries. The most frequent missing injuries were rib fractures in 12 patients (34.3%), spine fractures in 5 (14.3%) patients, sternum fracture in 4 (11.4%) patients, clavicle fracture and pelvic fracture in 3 (8.6%) patients and fracture of the larynx in one (2.9%) patient. Analyze of missing organ injuries shows: 3 (8.6%) undiagnosed brain and pulmonary contusions, and one (2.9%) patient with rupture of the spleen and liver.
Conclusions: Analyze of errors in a treatment of trauma patients and searching for preventable trauma deaths are very useful methods for recognition the weaknesses in system of trauma care.

137 The Value of Postmortem CT Scanning as a Substitute for Autopsy in Trauma Victims: a Systematic Review

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Objective: To assess the role of postmortem computed tomography (PMCT) as an alternative for autopsy in determining the cause of death and diagnosing specific injuries in trauma patients.
Methods: A systematic review was performed by searching the EMBASE and MEDLINE databases. No language, publication year or age restriction was used. Articles were eligible if they reported both PMCT as well as autopsy findings and included more than one trauma patient. Two reviewers independently assessed the eligibility and quality of the articles and discrepancies were resolved by an arbiter. The data extraction and analysis was performed by the two reviewers.
Results: Fifteen studies were included which described 244 patients. The median sample size was 13 (range 5–52). The proportion agreement in the cause of death between PMCT and autopsy varied between 46 and 100%. This variation was larger than could be expected by chance alone (I2 = 76.4%). The injuries detected with PMCT ranged from 53 to 100%.
Conclusions: This systematic review provides inconsistent evidence whether PMCT is a reliable substitute for autopsy in trauma victims. PMCT has several promising features in postmortem examination; PMCT can be a good additive for autopsy because it detects extra injuries overseen during autopsies. Secondly, PMCT is a good alternative for a refused autopsy.
Editor to self: Seçilmiş bildiri olabilir

138 Time Course of Coagulopathy in Isolated Severe Traumatic Brain Injury: a Prospective Study

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Background: Coagulopathy commonly complicates severe traumatic brain injury (TBI) and is associated with detrimental outcomes. The time course of coagulopathy, however, has not been documented in any large prospective study.
Methods: Prospective study of all patients admitted to a level I trauma center from June 2005 to December 2007 with isolated severe TBI. Isolated severe TBI (isTBI) was defined as severe TBI (AIS head ≥3) with a chest, abdomen, and extremity AIS ≤ 3. Criteria for TBI-coagulopathy included isTBI in conjunction with thrombocytopenia and/or elevated INR and/or prolonged aPTT. The onset and duration of coagulopathy were documented for study purposes. All data are expressed as mean ± standard error of the mean.
Results: A total of 408 patients met study criteria. Thirty four percent (n = 139) of patients developed coagulopathy with a significantly

higher incidence after penetrating TBI (blunt 32% vs. penetrating 54%; p = 0.005). On average, coagulopathy was diagnosed at 23 ± 2.5 h post admission with a mean duration of 83 ± 6.3 h. Coagulopathy lasted significantly longer in patients sustaining blunt trauma compared to penetrating trauma (90 ± 7.3 h vs. 49 ± 7 h; p = 0.014).
Conclusion: The incidence of coagulopathy in isTBI is high, especially in patients sustaining penetrating severe head injury. A more protracted course of TBI-coagulopathy is associated with blunt injury mechanisms. Based on our results, frequent monitoring of coagulation markers for screening purposes is warranted for a minimum duration of 7 days from admission.
Editor to self: Seçilmiş bildiri

139 Neutrophil Induced Immune Suppression in Human Acute Systemic Inflammation

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Introduction: Immune suppression is a compensatory mechanism in acute inflammation e.g. following trauma. Multiple mechanisms underlying this phenomenon include decreased cytokine production, shifts in cytokine balance and unresponsive adaptive immunity. We show in a model of acute inflammation that neutrophils, apart from their established pro-inflammatory characteristics, possess multiple mechanisms mediating immune suppression.
Methods: Healthy male volunteers were given 2 ng/kg *E. coli* lipopolysaccharides intravenously. Blood was taken at various time points. Neutrophils were stained with antibodies and isolated by FACS. Neutrophil receptor-expression, phagocytosis and oxidase were measured. Lymphocytes were cultured in the presence of neutrophil subsets and CD3/CD28 or PHA. Proliferation was measured by incorporation of 3H.
Results: Distinct neutrophil subsets were identified. 3–6 h after administration of LPS 40% of neutrophils displayed a two to three-fold decreased expression in innate immune receptors, decreased phagocytosis and oxidase production. Another neutrophil subset (25%) inhibited lymphocyte proliferation by 50% (in the presence of CD3/CD28 or PHA) in a 1:1 ratio independent of IL-10, TGFβ, arginase or indoleamine 2–3. Instead direct delivery of H_2O_2 appeared to be the mechanism of immune suppression.
Conclusion: In acute inflammation neutrophils utilize multiple mechanisms mediating immune suppression. Firstly refractory neutrophils appear in the circulation. Secondly another population of circulating neutrophils effectively suppresses adaptive immunity. These observations dictate an important role for neutrophil-mediated immune suppression following conditions such as trauma, contributing to the susceptibility to infections seen in these patients.

140 Increased Nutritional Risk on Admission is Associated with Complication in Trauma Critical Care Patients

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Introduction and Objectives: ISS is an anatomical severity score and TRISS combines both physiological and anatomical severity to predict trauma outcome. APACHE II is a physiological prognostic model used in critical care patients. Nutritional risk screening (NRS-2002) is used for screening of nutritional risk in hospitalized patients. This study aimed to compare the reliability of NRS-2002 with prognostic scores in trauma ICU patients.
Methods: Records of 100 trauma patients admitted to the ICU were evaluated. The association of scoring systems with outcome was compared. Discrimination characteristics were evaluated using ROC curves.
Results: Forty-one penetrating, 59 blunt trauma patients were included. Overall mortality was 14%, and complication rate was 22%. Nutritional risk on admission was found to be increased in 58% of the patients. Increased ISS, TRISS, and APACHE II scores were significantly associated with both mortality and complication. NRS-2002 score was significantly increased in patients with complication, however, no association was found between NRS-2002 and mortality. ISS, TRISS, and APACHE II on admission had reliable power of discrimination (AUC > 0.8) for mortality and complication prediction. NRS-2002 score was insufficient for mortality prediction (AUC = 0.504), and had moderate discrimination power for complication prediction (AUC = 0.708).
Conclusions: Anatomical, physiological, and combined scoring systems are useful in predicting the outcome in trauma ICU patients. Although trauma is a disease of young and healthy population, a significant percent of trauma patients are under nutritional risk in our region. NRS-2002 score can be useful in predicting the complication risk in trauma patients.
Editor to self: Seçilmiş bildiri olabilir

141 Free Iron in Rat Liver is not Affected by Changes of Heme Oxygenase (HO) Activity Late after Hemorrhagic Traumatic Shock (HTS) and Reperfusion

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HO-1 is induced by HTS. Degradation of heme by HO leads to production of carbon monoxide, biliverdin, and ferrous iron. Free ferrous iron is an inducer of oxidative stress and cell damage. We investigated whether changes of HO activity prior to HTS affect free iron in liver late (16 h) after reperfusion. Rats (n = 6–7/HTS and

sham-group) received a single intraperitoneal injection of either Zinc protoporphyrin (ZnPP), an HO inhibitor, hemin, an HO-1 inducer, or vehicle. 6 h later, rats were anesthetized and subjected to HTS, including bleeding, laparatomy, and reperfusion (inadequate and adequate phase) and were sacrificed 16 h later. HO-1 mRNA was determined by real-time PCR and HO activity was determined in liver homogenate. Free iron was measured by electron paramagnetic resonance spectroscopy in nonhomogenized liver tissue. HO-1 mRNA was elevated only in the HTS-group pretreated with ZnPP versus the sham-group. HO activity was increased in all HTS groups compared to sham groups, with the most distinctive increase seen in the hemin pretreated groups. Plasma bilirubin values showed a similar increase in the groups pretreated with hemin. No significant difference was found in free iron concentration among all groups. Our data show that changes of HO activity prior to HTS are not associated with elevated free iron, late after reperfusion, suggesting that free iron released from HO is efficiently deactivated.

142 Early Prediction of Late Onset Sepsis in Multi Trauma Patients by Analysis of Neutrophil Activation

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Introduction: Cells of the innate immune system are essential in the development of inflammatory complications. The activation status of this system can be determined by analyzing expression activation markers on neutrophils in peripheral blood. Our research group previously showed that a combination of these receptors, the 'priming score', reflected the inflammatory status of individual patients.
Hypothesis: Systemic activation of the innate immune system attracts functional neutrophils into damaged tissues. Dysfunctional neutrophils stay behind in the circulation, causing a paralyzed innate immune system and increased susceptibility to late onset sepsis (>5 days).
Methods: Blood of adult patients with multiple injuries (ISS > 16) was sampled within 12 h after trauma, unless known with immunodeficiency or immunosuppressive drug use. Neutrophil activation was determined by expression of activation markers with flowcytometry. Follow-up continued until discharge.
Results: Of the 73 included patients, 24 developed a sepsis and 11 died. The median Injury Severity Score of septic patients was 30, compared to ISS 25 in other patients. In patients who developed a sepsis, neutrophils showed a lower active FcγRII (745.0 vs. 133.5, p 0.012) and fMLP induced active FcγRII (3,546.7 vs. 1,249.6, p 0.003) activity. Considering we measured circulating cells, this reflects paralysis of the innate immune system. In addition, neutrophils showed decreased FcγRIIIB expression (381.7 vs. 119.2, p 0.000), indicative for recruitment of immature cells.
Conclusion: Multiple injuries lead to a dysfunctional innate immune system within 12 h. Determination of active FcγRII and fMLP induced active FcγRII can predict the development of late onset sepsis.

Author to editor: Source of financial funding: Hospital Board Scholarship Potential conflict of interest: none
Editor to self: Seçilmiş bildiri

143 Risk Differences in the Second and Third Peak of Trauma Death – an Analysis of 20257 Hospitalized Trauma Victims in Japan

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Objectives: Our study objective is to stratify risk factors of the second (within hours) and third peak (within days) of trauma death independently.
Materials and methods: 20,257 records from Japan Trauma Data Bank were retrospectively analyzed. As outcomes for the analysis, we defined the early and delayed death as deaths within 2 days and those after 3 days, respectively. Based on the framework of trauma injury severity score (TRISS), coded Glasgow coma scale (cGCS), coded systolic blood pressure (cSBP), coded respiratory rate (cRR), injury severity score (ISS) and coded age (cAge) were used as independent variables to determine the outcomes using proportional hazard analysis.
Results: A total of 10,258 records matched the requirement to fulfill. Predictors of the early death were: an increase in cGCS [hazard ratio (HR): 0.48/point, 95% confident interval (95%CI): 0.45–0.51], cSBP (HR: 0.61/point, 95%CI: 0.56–0.66), cRR (HR: 1.04/point, 95%CI: 0.96–1.13), ISS (HR: 1.16/10points, 95%CI: 1.12–1.19) and an elder in cAge (HR: 1.34, 95%CI: 1.18–1.51). Similarly, predictors of the delayed death were: cGCS (HR: 0.56/point, 95%CI: 0.52–0.60), cSBP (HR: 1.17/point, 95%CI: 1.01–1.34), cRR (HR: 0.74/point, 95%CI: 0.65–0.84), ISS (HR: 1.33/10point, 95%CI: 1.24–1.43) and cAge (HR: 2.85, 95%CI: 2.27–3.57).
Conclusions: In our observation, statistically-significant risk factors of early and delayed trauma death differed. Physiological severity largely affected the second peak. In contrast, the third peak mainly correlated to anatomical severity and elderly in age compared to risk for the second peak. Especially, an initial hypotension might no longer affect the third peak of trauma death independently.

144 Increased Mortality in Trauma Patients with Systolic Hypertension

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Objectives: To assess characteristics and mortality of trauma patients with systolic hypertension.
Materials and methods: From a total of 20,257 hospitalized trauma patients' records from the Japan Trauma Data Bank, we included patients with complete revised trauma score (RTS) codes and the numeric data of systolic blood pressure (SBP) on arrival at the emergency departments. In modifying RTS, we divided score-4 SBP subcategory of RTS into score-4a (90–179 mmHg) and score-4b (≥ 180 mmHg) and regarded as categorical variable. Logistic

regression analysis including all the parameters of RTS as explanatory variables showed the odds ratios of categorical SBP variables predicting the inhospital death.
Results: A total of 12,077 records matched the inclusion criteria. Score-0, 1, 2, 3, 4a and 4b in SBP subcategory consisted of 1,043, 161, 298, 382, 9,233 and 960 patients, respectively. Inhospital mortality of score-0, 1, 2, 3, 4a and 4b were 98, 66, 38, 21, 6 and 16%, respectively. After adjustment for RTS, the odds ratios for the inhospital death of score-0, 1, 2, 3, 4a and 4b were 26.7, 10.0, 4.9, 2.5, 1.0 (reference) and 2.2, respectively. Isolated head trauma were more frequent in score-4b compared to score-4a (46 vs. 29%, $p < 0.0001$).
Conclusion: A trauma patient with systolic hypertension ≥ 180 mmHg is scored 4 points in SBP category under RTS rule, however, exposed to higher mortality rate similar to patients with 3 points in SBP subcategory and maybe related to isolated head trauma.
Author to editor: To whom it may concern: We have received a e-mail replied from AbstractAgent.com which alert the exceed in limitations of abstract submission. The e-mail noticed us, the presenting author of this abstract (Akira Endo) posted 3 or more abstract as a presenting author, however, the authors of ''Increased mortality in trauma patients with systolic hypertension'' believed that Akira Endo in Department of ACCDM, TMDU, Japan surely posted this abstract only. The name ''Akira Endo'' is common in Japan. We suppose that ''Akira Endo'' of the other institutes were double-counted.
Editor to self: Seçilmiş bildiri

PREHOSPITAL CARE

145 Hospitalisations for Occupational Injury in a High-income Developing Country

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Background: The United Arab Emirates (UAE) is developing rapidly, with many foreign construction, farm, and industrial workers at risk of injury.
Aims: To assess external causes, risk factors, severity, and anatomical region of work-related injuries using a trauma registry.
Methods: Surgical admissions 03/2003 to 04/2005 were recorded in the registry at the main trauma hospital in Al-Ain region, population 348,000. Prevention-related variables were analyzed using SPSS and severity quantified by injury severity scores (ISS).
Results: There were 614 work-related injury hospitalisations, equating to an incidence of about 136/100,000 workers/year. Males accounted for 98%, ages 25–44 years 69%, and nonnationals 96%, with 70% of workers from the Indian sub-continent. External causes included falls 51%, falling objects 15%, powered machines 11%, animals 7%, burns 6%, and other 10%. At least 39% of falls were from relatively high levels. Median ISS was 4 for all six main external causes. Extremities were most frequently injured. Mean hospitalisation was 9.4 days. 4% (n = 22) were admitted to the intensive care unit and 1% (n = 5) died after admission.
Conclusions: Main external causes were proportionately much more frequent than in industrialised countries, and admissions prolonged. Priorities include effective countermeasures for falls from height and falling objects, and for machinery injuries. Improved work injury data, access to occupational health services, specific regulations and frequent inspections at all construction sites, workshops, and farms, together with appropriate penalties for safety violations, are essential to reduce incidence and severity of occupational injury among vulnerable migrant workers in the UAE.

146 Reduced Tissue-interface Pressure and Increased Comfort on a Newly Developed Soft-layered Long Spineboard

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Introduction and objectives: Immobilization of the spine in trauma patients at risk of spinal damage is performed using a rigid long spineboard or vacuum mattress both during pre-hospital and in-hospital care. However, disadvantages of these immobilization devices in terms of discomfort and tissue-interface pressures have guided the development of a new soft-layered long spineboard. We compared tissue-interface pressure and degree of comfort during immobilization on a rigid spineboard, a vacuum mattress and a newly developed soft-layered long spineboard.
Methods: In this randomized cross-over trial, 30 volunteers were immobilized sequentially on all three devices for 15 min per device. Tissue-interface pressures were measured using an Xsensor pressure mapping device, including the peak pressure and the Peak Pressure Index (PPI). Comfort was rated on a visual analogue scale (VAS) after 1 min and after 15 min of immobilization.
Results: Tissue-interface pressures were significantly higher on the standard long spineboard and the vacuum mattress than on the soft-layered long spineboard. PPI for the sacrum on the soft-layered long spineboard was significantly lower than on both other devices, with an average PPI close to normal diastolic blood pressures. The participants reported significantly more comfort on the soft-layered long spineboard compared to the rigid long spineboard, both after 1 and 15 min ($p < 0.0001$).
Conclusion: Using the soft-layered long spineboard, which imposes less pressure on the tissue and provides better comfort than the standard long spineboard and the vacuum mattress, means buying time to optimize the patient's treatment while minimizing tissue damage.

147 The Impact of Emergency Surgical Workload in the General Surgical Practice

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Background: Trauma and emergency surgery models differ all across Europe. No definitive model was accepted and work and surgical emergency load are different in each region. We performed a cohort study to analyze the impact of emergency (including trauma) surgery in the general surgical practice at a Portuguese University Hospital.
Methods: Data on emergency surgical cases and admissions to the surgical service over a 3-month period were collected and analyzed; this included patient demographics, referral sources, diagnosis, operation, and length of stay (LOS).
Results: There were 190 (median age 53 years, M/F = 101/89) emergency surgical cases, representing 24.9% of the all 776 general surgical cases. The commonest procedure was appendectomy (37%). There were five trauma surgical cases. 16.9% of the patients requiring operative intervention were inpatients. During the study period there were 277 (median age 59 years, M/F = 129/148) emergency surgical admissions representing 22.1% of all the 1,253 surgical admissions. The commonest diagnoses were colonic (19.9%) and biliary pathology (18.8%). There were 13 trauma admissions. Mean LOS for emergency surgical cases was 16.1 days, for emergency admissions was 12.5 days, and for overall general surgery admissions was 7.85. Mortality rates were 8.4% (emergency surgical cases), 8.3% (emergency admissions), and 4.5% (overall general surgery admissions).
Conclusion: Emergency workload represents a significant part of the work for the general surgeons. The emergency surgical cases and admissions had a significant impact in the mortality rates of the general surgery admissions. Resource planning and training should be based on more comprehensive, prospective data such as these.

148 Physician Staffed Helicopter Emergency Medical Services in the Netherlands: a Cost-effectiveness Analysis

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Background: The long-term health outcomes and costs of helicopter emergency medical services (HEMS) assistance remain uncertain. The aim of this study was to investigate the cost-effectiveness of HEMS assistance versus emergency medical services (EMS).
Methods: A prospective cohort study was performed at a level I trauma centre. Quality of life measurements were obtained at 2 year after trauma, using the EuroQol-5D as generic measure. Health outcomes and costs were combined into costs per quality-adjusted life year (QALY).
Results: The study population receiving HEMS assistance was more severely injured than that receiving EMS assistance only. The incremental costs for intramural care were €4,700 for HEMS treated patients compared with patients treated by EMS only, which was mainly determined by the costs of the intensive care stay and the used diagnostics. Finally, the costs for HEMS assistance instead of EMS assistance were €28,537 per QALY. The sensitivity analysis showed a cost-effectiveness ratio between €16,000 and €62,000.
Conclusion: The costs per QALY for Helicopter Emergency Medical Services in the Netherlands remain below the acceptance threshold. Therefore, HEMS should be considered as cost-effective.
Author to editor: This study describes the long-term health outcomes and costs of helicopter emergency medical services (HEMS) assistance. It investigates the cost-effectiveness of HEMS assistance versus emergency medical services (EMS), and may serve as a reference for future quality of life and cost-effectiveness studies on the subject of HEMS and severely injured patients

149 Evaluation of a Supported Fast-track Multi-trauma Rehabilitation Service: a Feasibility Study

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Introduction: In usual multi-trauma care (UTC) each partner has its own ''autonomous'' treatment perspective. Clinical evidence, however, suggests that an integrated multi-trauma rehabilitation approach ('supported Fast-track multi-Trauma Rehabilitation Service': SFTRS), featuring earlier transfer to a specialised trauma rehabilitation unit; earlier start of 'non-weight-bearing' training and multidisciplinary treatment; early individual goal-setting; co-ordination of treatment between trauma-surgeon and physiatrist, may be more (cost-)effective. The feasibility of a multi-centre trial examining the (cost-)effectiveness of SFTRS was assessed.
Methods: Data from 1892 multi-trauma patients (ISS $\geq$ 16, complex multiple extremity injuries or complex pelvic fractures) were inventoried. Patient characteristics, trauma severity, quality of life, health status, anxiety and depression, and cognitive functioning were assessed in two Dutch trauma centres providing UTC or SFTRS.
Results: No differences in patient characteristics', trauma severity or discharge destination were found between SFTRS and UTC. Discharge destination was 'home' (49.4%), 'rehabilitation clinic' (20.3%), 'nursing home' (5.2%), 'other hospital' (5.8%), 'unknown' (6.4%). 12.8% of patients died. However, hospital length-of-stay differed: 10.4(SD: 10.4) days (SFTRS) and 13.9(SD: 13.5) days (UTC).
Conclusion: Adequate patient numbers may be recruited, baseline patient characteristics did not differ between collaborating centres, hospital length-of-stay was reduced in SFTRS and adequate patient follow-up is possible. Based hereupon, a nonrandomised multi-centre clinical trial started. (ISRCTN68246661).

150 Cancellations of (Helicopter Transported) – Mobile Medical Team Dispatches in the Netherlands

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Introduction and Objectives: The trauma-region of North-West Netherlands has consensus criteria for mobile medical team (MMT) scene dispatch. The MMT can be dispatched by the EMS-dispatch centre or by the on-scene ambulance crew and is transported by helicopter or ground transport. Although much attention has been paid to improve the dispatch criteria, the MMT is often cancelled after being dispatched. The aim of this study was to assess the cancellation rate and the noncompliant dispatches of our MMT, and to identify factors associated with this form of primary overtriage.
Methods: We conducted a retrospective case review of 605 consecutive MMT-dispatches during a 6 months period. By means of chart review, data pertinent to prehospital triage, patient's condition on-scene and hospital course were collected and analyzed. All dispatches were evaluated by using the MMT-dispatch and mission appropriateness criteria
Results: Median age was 35.9 years and 65.3% of the patients was male. Of these, 430 patients were trauma victims (86.7% blunt trauma). After being dispatched, the MMT was cancelled 203 times (43.5%). Statistically significant differences between assists and cancellations were found for overall mortality, mean RTS, GCS, and ISS, mean hospitalization and amount of ICU admissions ($p < 0.001$). Almost 26% of all dispatches were neither appropriate, nor met the dispatch criteria. Fourteen (3%) missions were appropriate, but did not meet the dispatch criteria.
Conclusions: Nearly a half of MMT-dispatches were cancelled and almost 29% did not meet the dispatch criteria. Dispatch criteria for the mobile medical team in our trauma-region need further refinement and compliance.

151 The Illness and Injuries of the Cyclone Nargis Victims in Myanmar by Thai Medical Team

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Introduction and Objectives: On May 2, 2008, the cyclone Nargis hit Myanmar and made landfall causing massive destruction which led to more than 146,000. Under the permission of Myanmar government, Thailand sent two medical teams for helping the cyclone victims. The aim of this study was to describe the illness and injuries of the victims during the operation of the first Thai medical team in Myanmar.
Methods: The first Thai medical team was the first humanitarian medical unit allowed by Myanmar government to help the cyclone victims during 15th–31st May 2008. Thirty medical personnel and thirteen tons of medical supplies were transported to Myaungmya. The second team was permitted to continue working after. The patients' data and details of illness/injuries were recorded.
Results: During the 14 days of mission as mobile medical unit in Myaungmya and Labutta township (the most severe destroyed area) in the Ayeyarwady division, there were 3,768 patients treated which male: female was 53%:47% and adults:children was 75%:25%. The common illness/injuries were 1,445 (38.3%) respiratory tract infections (upper tract 95%, lower tract 5%), 582 (15.4%) musculoskeletal disorders, 391 (10.3%) upper GI disorders, 236 (6.3%) diarrhea and 153 (4.0%) infected/open wounds. Only 3 of all 168 surgical operations required general anesthesia. Six extremity fractures were managed by casting.
Conclusion: Two weeks after the major attack of disaster, there was no injury needed major operation. The main problems were infections, musculoskeletal and GI disorders which may be reduced by providing proper hygiene in the victim shelters.
Author to editor: I am not sure that the abstract topic will be fit-in this category or not. Please correct if it has to be changed. Thank you in advance. Best regards, Rattaplee Pak-art,MD, FACS

152 The Evaluation of 112 Ambulance Record Forms in Emergency Department of Bakirkoy Training and Research Hospital

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Objectives: To evaluate 112 Ambulance record forms in Emergency Department.
Materials and methods: Ambulance record forms collected between October 2008 and January 2009 were analyzed retrospectively.
Results: Forms of 349 patients (52.1% men) were found and evaluated. Mean age of the patients were 59.92 years (min: 14, max: 95). 97.7% of the patients were transported by 112 ambulance system. The average of ambulance-arrival time was 33.22 min (min: 2, max: 68). Most of the ambulances arrived between 21:00 and 21:59 to the hospital and the least number of arrivals was between 05:00 and 05:59 am. 51% of the patients were taken from their houses. 79.1% of them had medical problems, 2.6% of them had traffic accidents. Blood pressure and pulse examination were done for all of the patients. GCS was evaluated in 68.5% of the patients and triage code was determined in 8.8% of them. The most frequent diagnose was made as MI (11.5%), whereas 33.5% of the patients did not take any diagnose. 44.7% of the patients did not get any interventions. About 4.4% of the patients were given medication (Captopril SL, Isosorbide dinitrate SL, ASA 300 mg PO). 49.3% had an open IV line. ECG was taken in 36.7% of the patients, 41.3% of the patients were given oxygen. Intubation was performed in two patients and CPR in six, whereas defibrillation was not performed in any patient.
Conclusion: According to our evaluation, some of the procedures were not performed or not written in ambulance during transportation by staff.

153 RTS Outline? "Air-transportation Need" (Preliminary Data)

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Introduction and objectives: Greece is a small country, full of islands, every year more than 2,500 ''calls for requests for aeromedical evacuation'' are received by EKAB National Center for Emergency Care , Division of Aero medical Evacuations that manages, prioritizes and executes these that are necessary. The applicability of RTS coded variables for the Glasgow Coma Score (GCSc), Systolic Blood Pressure (SBPc), and Respiratory Rate (RRc) for evaluating ''air-transportation need'' was evaluated in logistic regression models. To validate the efficacy of the Revised Trauma Score (RTS) and its components for qualifying the workload in aero medical evacuations in Greece.
Methods: We retrograde analysed all data that the coordinator doctor received at EKAB National Center for Emergency Care, Division of Aero medical evauations (3 consecutive years: 2005, 2006, 2007) and we calculated RTS according to the data collected.
Results: 1,080 pts were recorded (2005: 343, 2006: 213, 2007: 524)

	Range	Minimum	Maximum	Mean	Std. Deviation
MEANBP	90.00	40.00	130.00	81.73	16.54
GCS	11.00	4.00	15.00	13.78	2.65
RR	91.00	8.00	99.00	16.69	7.98
RTS	50,082.00	28,326.00	78,408.00	67,443.06	9,059.86

GCS		
Frequency	Percent (%)	
4	12	1.1
5	14	1.3
6	23	2.1
7	20	1.9
8	31	2.9
9	16	1.5
10	15	1.4
11	14	1.3
12	33	3.1
13	37	3.4
14	65	6.0
15	800	74.1
RTS		
Frequency	Percent(%)	
2.83	3	0.28
3.57	1	0.09
3.77	8	0.74
4.30	10	0.93
4.50	15	1.39
4.94	2	0.19
5.03	12	1.11
5.15	2	0.19
5.23	28	2.59
5.35	4	0.37
5.44	18	1.67
5.64	78	7.22
5.97	21	1.94
6.08	16	1.48
6.17	47	4.35
6.32	1	0.09
6.38	152	14.07
6.53	1	0.09
6.61	5	0.46
6.82	19	1.76
6.90	42	3.89
7.11	361	33.43
7.26	1	0.09
7.55	10	0.93
7.84	223	20.65

Conclusions: The RTS and coded variables (GCS, SBP, and RR) does not accurately reflect the decision for to ''air-transportation need''. Adero medical evacuation need is determined mostly by the luck of diagnosis than the severity of the patient.
AIR-AMBULANCE, RTS
Author to editor: It is a try in the beginning to estimate the efficacy of air-transportation in Greece Maby more data will be present

SKELETAL TRAUMA

154 A New Modular Dynamic Hip Screw for Fractures of the Upper Part of the Femur

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The ''Traumax®'' hip screw plate is a new device that allows the treatment the fractures both of the neck and the trochanteric area of the femur, expected subtrochanteric area. This plate conserves the characteristics of a dynamic hip screw (compression of the fracture site, good positioning of the pieces of bone, integrity of gluteus muscles) more specific characteristics: this device is modular, allows to choose the length of the barrel adapted to the length of the head screw, the diaphysal screws are locked by a tech nut according to the patented ''Surfix'' system. The locked screw gives a good stability even if the bone has a poor density and allows to use a short plate that preserves the piercing lateral vessels of the femur. This short modular screw plate can be implanted by a 3 cm minimal invasive approach using a particular instrumental pipe. During the presentation we will report the results of a prospective study colligating 250 cases of ten French hospitals. A preliminary study of 60 consecutives cases gives prominence to a few blooding with an average of 180 ml, a operative time of an average of 32 mn, a xr exposing time of an average of 16 s. Healing bone has been obtained in all cases. The head screw has been placed at the center or just below in 97%. No complication dues to the plate has been reported; in all cases only one approach has been used.
Author to editor: Best regards

155 The T2 Intramedullary Compression Tibia Nail: A Prospective Multicenter Clinical Study

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Objective: Testing the handling qualities of the T2 nail and to review the clinical and radiological results. Setting: three European level 1 trauma-centres.
Material: January 2003 and December 2004, 102 patients with tibial fractures were treated with a reamed T2 nail. The follow-up periods 4–6 weeks, 4 and 12 months.
Results: Good handling, reliable instruments, no problems in 93%. Negative comments in measuring nail/screw length and with the insertion of the compression screw 7%. Mean fluoroscopy time was 369 s (±214 s). mean operative time was 104 min (± 43 min). High energy trauma had a significantly longer operation time compared to the group with low energy trauma ($p = 0.007$). Significantly ($p < 0.001$) less blood loss when using a tourniquet. After 12 months bone healing was 92%, V.A.S for pain was 2.3, 75% did their fulltime job and 80% had their normal social activity. Complications, compartment syndrome six, peroneal nerve paralysis two, and DVT in two cases.
Conclusion: The T2 nail represents a reliable, innovative nailing technique of the third generation. No nonunion or pseudo-arthrosis. After 1 year 20–25% of the patient did not perform their fulltime job or has a normal social activity.
Keywords: T2 tibial nail, Handling quality, Clinical/radiological results.

156 Role of the Intermediate Fragment in Operative Treatment of Olecranon Fractures

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Objectives: In order to improve initial operative treatment of comminuted olecranon fractures we searched for new determining details. Olecranon fractures require anatomic surface reduction and trochlear notch contour for predictable outcomes. We assumed that the intermediate fragment plays a decisive role for precise restoration of the trochlear notch and consecutive outcome of operative treatment.
Methods: 58 patients (26 female, 32 male; mean age 55 years) operated with diagnosis of comminuted olecranon fracture were identified in a 7-year period from trauma unit files at two Level 1 trauma centers. Retrospective review of all operative reports and radiographs/computer-tomography scans identified patients with concomitance of an intermediate fragment.
Results: 28 patients were treated with stable internal fixation with figure-of-eight tension-band wire fixation and 30 patients with posterior plate with/without intramedullary screw. An intermediate fragment was seen in 36 patients (62%). In 17 of these 36 patients (47%), the intermediate fragment was described in operative report. Twelve of these patients (71%) were treated with single posterior plate with/without an intramedullary screw, and five patients (29%) with figure-of-eight tension-band wire fixation. Because of secondary dislocation, in three cases initial fixation with figure-of-eight tension band wire failed and was revised to posterior plate with intramedullary screw fixation.
Conclusion: An extraordinary amount of all evaluated patients showed an intermediate fragment. Presence of an intermediate fragment should be mentioned in operative reports. We conclude that consideration, desimpaction, anatomic reposition of the intermediate fragment is a necessary precondition for anatomic restoration of the trochlear notch.

157 To Audit the Moderate-term Outcomes of Silastic Joint Replacements of the First Metatarsophalangeal Joint in a Hospital In United Kingdom With Minimum of Two Year Follow Up

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Aim: To assess moderate-term outcomes of silastic joint replacements of the first metatarsophalangeal joint.
Methods: The 32 patients (37 feet) that had silastic implants inserted were reviewed at an average of 2 years and 4 months (ranging 7 months to 5 years and 4 months). The mean patient age was 63 years. These patients answered a subjective questionnaire, had their feet examined clinically and radiographically and a pre-operative and post-operative AOFAS score was calculated for each.
Results: The questionnaire revealed that every patient described that their pain had decreased after surgery and 17 feet (46%) were completely pain free. There was a significant improvement in patients' subjective pain scores after surgery (t value ≤ 0.0001). Preoperatively, the mean pain score for all 37 feet was 8.14, whereas post-operative the mean pain score was 1.32. The mean AOFAS score before surgery was 39.97. This increased to a mean score of 87.40 after surgery ($p \leq 0.0001$). This again is a significant improvement. No patient was dissatisfied with the outcome with their surgery.
Conclusion: These moderate term results are encouraging, with good subjective and objective results. However, long-term follow-up will be required to assess the longevity of this implant

158 Does Open Reduction Increase the Chance of Infection During Intramedullary Nailing of Tibial Fracture; a Multicenter Prospective Clinical Study

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Aim of the study: When open reduction performed carefully it will not increase the rate of wound infection.
Setting: 3 European level 1 trauma centers.
Material: January 2003–December 2004,102 patients with tibial fractures(diaphyseal 87, proximal 5, distal 10) were seen. Open in 12 and closed reduction 90 cases. Fracture classification according to OTA.
Results: 12 patients with open reduction. 8 male and 4 female. Age (16–59 years). 9 high and 3 low energy trauma. A standard T2 nail was used with proximal and distal locking There was a significant difference in operation ($p = 0.029$) and radiation ($p = 0.031$) time between open and closed reduction. After operation four had full and eight patients partial weight bearing. Five open reduction with wound infection. Three with high and two with low energy trauma. Location of wound infection four distal and one proximal. Additional problems two patients had alcohol problems with liver disease one had cardiac disease and was demented, one with neurologic and respiratory. Just one patient did not had any additional problems. After 3 months bone healing was 89%, wound infection was treated with antibiotics.
Conclusion: We have an increased rate of wound infection after open reduction. Secondary diseases probably contributes to the infection. The infection is located in the proximal and distal tibia fracture.
Keywords: Wound infection, Open reduction, Tibia fracture

159 Sterile Procedures in Operating Theatres: re Audit of Stepping Hill Hospital Theatres Adherence to British Orthopaedic Association Guidelines

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Aim: Low incidence of infection depends on rigid aseptic discipline within the operating suite. Our aim was to reaudit to establish upto what extent British Orthopaedic Association Good Orthopaedic Operating Practice Guidelines are being adhered to and to compare results with those of previous audits of 2003, 2005 and 2007.
Study design: Complete audit cycle
Methods: A designated investigator completed an infection proforma intraoperatively for cases between December 2007 and July 2008 to assess the adherence to guidelines.
Results: We looked into 91 operation cases – 57 elective and 34 trauma. We found out that there is increased incidence of main theatre doors being opened intraoperatively (38% of trauma cases, never opened in arthroplasty cases). Image intensifier incorrectly transported in 20% of cases which has become much better than previous audit where the rate was 50%. Incorrect theatre entry and exit during trauma cases was observed. The surgical masks were worn in 23% cases, improved slightly from 18% compliance in 2007, but still worse than 55% in 2005. In arthroplasty cases red line breached by foot in 62% cases compared with 73% in 2007 and 22% in 2005. Double preparation was done correctly in all arthroplasty cases.
Discussion: We made strong recommendations that mask wearing need guidelines to be reviewed. Theatre induction and education to enforce theatre suite guidelines and clothing. Our reaudits have made a marked difference with consistent improvement over the years as revealed by our audit cycle.

160 Audit Cycle of Point Prevalence Use of Antibiotics in Orthopaedic Inpatients from 2003 to 2008 in a District Hospital in United Kingdom

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Aims: The aim of this reaudit in 2008 was to complete the loop of the initial audit done in 2003, 2005 and 2006. We do this audit regularly to assess adherence to the hospital antibiotic prescribing and general medical council guidelines.
Study design: Complete audit cycle
Methods: We look into all orthopaedic inpatient's drug charts as well as clinical notes to find out the point prevalence of treatment and prophylactic antibiotic use to compare it with the hospital guidelines
Results: With regards to treatment antibiotics, out of 73 inpatients at that time in July 2008, 13 patients were on antibiotics for treatment (24 in 2006). 77% had cultures (or appropriate sample ie MSU/Sputum) taken prior to commencing antibiotics (58% in 2006 and 70% in 2005). 100% compliant with guidelines (90% 2005). Appropriate dose/timing/route/frequency was present in more than 96% patients. 61% had duration specified (28% in 2006 and 36% in 2005). Only 4% of patients receiving treatment had one or more missed doses with no substantial reason (38% in 2006). With regards to prophylactic antibiotics, out of 73 orthopaedic inpatients in July 2008, 11 patient were on and 26 patients had received prophylactic antibiotics. There was appropriate antibiotic/dose/route//frequency in > 98% cases throughout and appropriate timing in 96% of cases (55% in 2005).
Discussion: We have highlighted prescribing guidelines to junior staff on induction and reinforce the importance of accurate prescribing. Our reaudits have made a marked difference with consistent improvement over the years as revealed by our audit cycle.

161 A Study Of Microbial Colonisation of Orthopaedic Rhys-Davies Exsanguinators in a District Hospital in UK

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Introduction: Our aim was to look at the contamination of the Rhys-Davies exsanguinators in our hospital and comparing the results after cleaning it with a disinfectant wipe.
Materials and methods: We used two standard methods to measure the contamination levels of the Rhys-Davies exsanguinators. In first method, we used rapid microbial ATP bioluminescence assay and in second method we took culture samples. We repeated them after decontamination with sani cloth wipes.
Results: All exsanguinators were heavily contaminated as revealed by both the methods. We had a pre decontamination median value of 85 (range 0–6828) RLU and post decontamination median value of 14 (range 0–377) RLU from 24 sites. There was a median drop of 70 (range 0–6803) RLU after decontaminating the exsanguinators with p value < 0.001. Similarly all exsanguinators were colonised with bacterial count varying from 5 to > 300. Coag neg staphylococcus (CNS) was the most commonly grown organism from the exsangu-

inators. No microbial growth was yielded from any site after decontamination (p value < 0s.001).
Conclusion: The presence of any number of such organisms around a surgical site can be worrying and can lead to surgical site infection. We made the following Recommendations:

- Theatre staff should be trained for proper application and cleaning of the exsanguinators
- Alcohol wipes are good alternative to current practice and should be used for decontamination
- We must wash our hands before and after its use
- We should use plastic bag over the limb first before using the exsanguinators

162 Selfdynamisable Extramedullary Internal Fixator and MIS in Treatment of Femoral Fractures

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It is presented one new minimally invasive method for closed fracture reduction and one extramedullary selfdynamisable internal fixator developed by the author. There is no contact between bone and internal fixator in fracture area. It has been widely investigated biomechanically. In clinical use it has been applied to 1,050 patients in treatment of femoral fractures. The age of patients was from 14 to 87 years. This internal fixator is applied by two small incisions. Reduction is achieved using standard traction table or using special reduction device. This reduction device provides possibility of reduction with minimal using of fluoroscopy or even, after more experience without using of any imaging technique as fluoroscopy, ultrasound or computer navigation. Received clinical results are promising, as it has been shown early callus formation and radiological union within the 3–4 months. It has been allowed to patients early full weight bearing. During the treatment it has been confirmed working of self-dynamisation concept, which probably all together with 3D configuration resulted in unexpectedly quick fracture healing. Follow up was 19 months (6–60). According to results obtained, it can bee concluded that new biological internal fixator is suitable for minimally invasive technique, without opening of fracture site. It can be used as primary method or soon after external fixation if damaging control concept used.

163 Outcome of AO Cannulated Screws for the Fracture Neck of Femur – A Review of 412 Patients with Minimum of Two Years Follow up

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Introduction: The aim of the study was to analyze the outcome of AO cannulated screws for fractures neck of femur in our hospital.
Methods of study: 412 patients (101 males and 311 females) who underwent AO screws for fracture neck of femur over 5 years (2000–2004) and followed-up for a minimum of 2 years formed the study population. A retrospective review of data from electronic patient record (EPR), clinical coding, clinic and GP letters was made. Age, residential placement, Garden's classification of fracture, mode of injury, associated comorbidities, pre-admission mobilisation status, allergies, addictions and anticoagulation status details were collected. An indepth study was conducted to look into delays for surgery, length of stay in hospital, complications and treatment of these complications. Reasons for re-admissions, re-operations and comorbidities developing as a result of these interventions was critically analysed.
Results: The mean age of patients was 68 years (range 18–96 years). The incidence of non-union was 8% and avascular necrosis at 1 year was 19%. Revision surgery was performed in 87 (27%) cases. Complications were more principally in patients who had end-stage renal failure (76%), diabetes mellitus (60%), osteoporosis (43%), and steroid use (67%).
Conclusion: The complications and revision surgery rate was high in patients with particular co-morbidities despite being undisplaced. Comorbidities and patient's age were also strong predictors of healing in addition to fracture configuration. Outcome of hip fractures is influenced by complex interplay of multiple factors and not only by radiographic appearance.

164 Evaluation of Severly Displaced Radial Neck Fractures in Children Treated by Elastic Stable Intramedullary Nailing

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In a retrospective study we evaluated the results of 28 severly displaced radial neck fractures in children treated by elastic stable intramedullary nailing according to the technique of Metaizeau. Patients were followed up by clinical and radiographic examinations. An evaluation of clinical results was performed using the Mayo Elbow Performance Score. According to Judet's classification there were 13 type III and 15 type IV fractures. Using the Mayo Elbow Performance Score, excellent results were achieved in 23 cases (82%) and good results in 5 cases (18%). Five patients complained about mild pain. Three malunions were seen. No nonunion, avascular necrosis, periarticular ossification, infection, nerve injury or premature physeal closure were found. Elastic stable intramedullary nailing is a minimally invasive technique, allows a stable fixation and provides excellent to good results with a low complication rate.
Author to editor: None of the authors received financial support for this study. We disclose any conflict of interest for this research.

165 Surgical Outcome of Capitellum Fracture Fixation

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Introduction and objectives: To asses the post-operative outcome and to compare with published data of this rare injury.

Methods: This is a 6-year of retrospective study. We had included 14 patients to our study (12 females and 2 males) with the average age of 56.6. We used Bryan and Morrey classification system and included type I and type III fractures.
Results: There were 11 type I and three type III fractures. Associated injuries were two dislocations with one MCL injury and two radial nerve symptoms. All the patients had ORIF with screw and two patients had supplementation of fixation with wires. Most patients were mobilized early in 2 weeks time. Nine of them treated with Miniacutrak screw fixation, four with Herbert screws and one lag screw (AO miniscrew). The approach was mainly postero-lateral but for five patients, it was antero-lateral. All patients were clinically and radiologically assessed. Average time for radiological union was 7 weeks. On the other hand, one patient had revision fixation because of failure of metalwork. Additionally, one patient had capsular release for contraction and another one had removal of screw for prominence of metalwork. Average follow-up was 33.7 months (8–72 months). Mayo elbow score was excellent for seven patients, good for three patients, and fair for three patients. One patient could not be fully scored due to learning difficulties.
Conclusions: We recommend open reduction and internal fixation for all type 1 and type 3 fractures so that function can be regained early.

166 Treatment of Traumatic Hip Dislocations Associated with Acetabular Fractures

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369 pz with surgical acetabular fracture have been selected in 70 months period, 67.4% were male. Average age is 38.2 years old. 126 pz (34.14%) with hip dislocation associated with acetabular fracture were included. 71 pz (56.34%) were posterior wall fxt, 2 (1.59%) posterior column fxt, 3 (2.38%) posterior wall + posterior column, 1 (0.79%) pure transverse fxt, 24 (19.05%) transverse + pw fxt. 101 pz (32.6%) have a posterior fracture-dislocation, 21 (6.7%) central and 4 (1.2%) anterior. Average follow-up was 62 months (min 18–max 114). Every pz received an early closed reduction (> 6 h from trauma) when directly admitted. 10 pz (3.2%) that reported a irreducible fracture-dislocation had required an early open reduction and internal fixation. In 79 pz (62.69%) we obtain a stable and concentric closed reduction. In 2 cases of uncommon pattern of postero-superior wall fracture (1.59%) occur a secondary dislocation, in 17 pz (13.49%) the hip remains unstable, 1 pz (0.79%) have an associated femoral neck fracture, 13 pz of posterior column or transverse plus posterior wall (10.31%). 21 pz (16.6%) received closed reduction > 6 h. 6 pz (28.5%) on the whole 21 pz that received a delayed reduction have developed AVN. 105 pz (83.4.%) received closed reduction < 6 h. 2 pz (1.9%) on the whole 105 pz developed AVN. AVN rate was 6.3% with 8/126 acetabular fracture-dislocation.
Conclusion: (a) There are two different mechanism of intra-articular incarceration: (1) primary incarceration (2) secondary incarceration; (b) Early reduction < 6 h constitute the best treatment reducing the AVN rate of approximately 15 times.

167 Outcomes of Conservative and Surgical Treatment of Calcaneum Fractures in a Large Case Series

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Objectives: To report the outcome and comparison of calcaneum fracture managements for intra-articular fractures.
Methods: A prospective study of the patients with intra-articular calcaneum fractures in the foot&ankle unit of a busy trauma hospital. All the patients were followed up with the calcaneal fracture score. We compared the outcome of surgical management Sanders type 2 (Group A) and type 3 (group B) fractures with conservative treatment (group C) at 2 years and assessed the medium term outcomes of groups A and B. Group C were a consecutive series of patients recruited to the study later than A and B, hence the smaller number in that group.
Results: 126 patients were included in our study. There were 70 in group A, 38 in group B, and 18 in group C. Mean follow-ups for the groups were A = 6 years, B = 5.5 years, and C = 2.34 years. Mean 2-year scores for the groups were A = 68.13, B = 63.78, and C = 51.36, with statistically significant differences between groups A and C ($p = 0.0006$), and between groups B and C ($p = 0.04$), but no significant difference between groups A and B. At medium-term follow-up (> 5 years), the scores for group A and B were 77.06 and 63.66, respectively. There were 7 deep, 5 superficial infections and 32 metalwork removals in total.
Conclusion: On comparing the medium term outcome to the 2-year one, group A showed some improvement and group B stayed the same. In this series, contrary to published articles, there was a better outcome at 2 years with surgical treatment than conservative treatment.
Author to editor: All the authors have agreed with content of the abstract. There was not any conflict of interest for this study.

168 Biomechanical Comparison of Plate Fixation with Oblique Screws

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Aim: The aim of this study is to evaluate; plate fixation with screws perpendicular in two plane as in conventional technique, oblique in one plane and angled in two planes, does change the strength of the fixation to bending forces. And is there any correlation between elevated strength and deformity resistance.
Method: Sheep rear leg tibias are fixed with the help of a custom made guide to a six hole DCP. Fixation in Group 1: With screws perpendicular in two planes. In Group 2: 20° to the shaft axis and perpendicular in the transverse plane. In Group 3: 20° to the shaft

axis and 7° in the transverse plane. Groups fixation strength tested with gap-close bending (A) and side bending (B) forces in tree point bending fashion. We analyzed the maximum moment force and deformation at the time of the failure.
Results: Mean maximum moment force was A1: 51.90 Nm, A2: 67.47 Nm, A3: 82.05 Nm; B1: 34.64 Nm, B2: 49.91 Nm, B3: 49.29 Nm. In A tests p value was < 0.05 between Group 1 and the other groups. Between Group 2 and 3 p = 0.053. In B tests, p value was < 0.05 between Group 1 and the others, but not significant between 2 and 3. When two of the bending tests evaluated together p value was significant in only between Group 1 and 3 (p = 0.006).The deformity was not significantly different between any Groups.
Conclusion: Oblique screw placement in two plane, increases the strength of the plate-screw fixation under bending forces.

169 Direct Introduction of Mobile Angiography Into the Emergency Room for Trauma Patients with Pelvic Injury by Trained Trauma Surgeons

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Objective: To assess the effectiveness of mobile angiography with a digital subtraction angiography (DSA) technology directly into the emergency room (ER) for blunt trauma patients with pelvic injury.
Materials–methods: This is a retrospective review of a cohort of blunt trauma patients with pelvic injury treated after the direct availability of mobile angiography by trained trauma surgeons into the ER for resuscitation. Data was collected including demographics, hemodynamic variables, resuscitation intervals form admission through completion of hemostasis, metabolic factors (pH and body core temperature), mortality and transcatheter arterial embolization (TAE) related complications.
Results: Twenty-nine patients underwent TAE in the ER. Mean age, shock index, and injury severity score were 40 ± 17 years old, 1.1 ± 0.6, and 30 ± 14, respectively. The interval from the decision to perform TAE through initiation of TAE and the interval from the decision to perform TAE through completion of TAE were 31 ± 12 min and 110 ± 32 min, respectively. The mean Δbody core temperature (BT) from admission through completion of TAE was –0.2 ± 1.5°C. And the mean ΔpH from admission through completion of TAE was 0.02 ± 0.13. There were clinically significant correlations between ΔBT and resuscitation interval, and between ΔpH and resuscitation interval. TAE was successfully performed in all cases and mortality was 17%. No TAE-related complications were observed.
Conclusion: Immediate availability of mobile angiography into the ER by trained trauma surgeons was effective to shorten the time required to restore normal physiology of trauma patients with pelvic injury without leaving the ER for resuscitation.

170 Is Transforming Growth Factor-beta 1 (TGF-β 1) a Reliable Marker of Delayed Fracture Healing

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Introduction: TGF- β1 is a regulatory protein, involved in fracture healing. The purpose of this study was to investigate the role of TGF-β1 in human fracture healing, and to verify whether TGF-β1 is a reliable marker of nonunion.
Methods: Serum samples of 114 patients with long bone fractures were collected over a period of 6 months. Patients were assigned to 2 groups: first group contained 103 patients with physiological fracture healing. Eleven patients with nonunions formed the second group. 33 healthy volunteers served as controls.
Results: In patients with physiological healing serum concentrations were initially high. Serum concentrations then decreased rapidly after 2 weeks and reached a plateau between weeks 6 and 8. Thereafter, another continuous slight increase of the concentrations was observed between weeks 12 and 24. In patients with impaired fracture healing TGF-β1 serum concentrations were initially similar to those with normal healing. A significant increase of the concentration was observed between weeks 4 and 6, followed by a continuous decline of the serum levels for the remainder of the observation period. Significant differences between the concentrations in both groups were observed at weeks 6 and 8. TGF-β1 as marker would have detected patients with nonunions at 6 weeks after fracture with a sensitivity of 100% and a specificity of 49%.
Conclusion: Significantly elevated levels of TGF-β1 after bone fracture demonstrated the importance of this molecule for fracture healing. Due to a low specifity, TGF-β1 could not be regarded as a reliable marker of impaired fracture healing.

171 Opinions on the Management of Acute Displaced Midshaft Clavicle Fractures: Results of a Questionnaire in the Netherlands and South-Africa

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Introduction: We performed a web-based questionnaire to examine whether recent increased interest in literature concerning the management of acute displaced midshaft clavicle fractures has caused a changing attitude towards the management of these fractures. The current and previous (10 years ago) opinions of (orthopaedic) traumasurgeons were asked.
Methods: South-African and Dutch (orthopaedic) traumasurgeons were asked for their opinions in three imaginary cases. In addition opinions on shortening and dislocation ad latum as operation indication and minimal warranted amount were assessed.
Results: A total number of 264 (NL), respectively, 100 (SA) (orthopaedic) traumasurgeons responded. > 80% manages more than five patients with clavicle fractures per year. Current opinions favour operative management more often with plate fixation as most preferred method. An uncomplicated case of an acute displaced midshaft fracture is preferably treated operatively by 35.6%, respectively, 49% of the respondents, compared to 7.6% resp. 12% previously. A case with skin compromise added rises this figure to 95.1% resp. 95% nowadays compared to 87.1% resp. 85%. Floating shoulders with displaced midshaft clavicle fractures would be

operated by 95.5% resp. 78% nowadays compared to 90.5% resp. 61% (all results: $p < 0{,}005$). Shortening and dislocation ad latum indicated as operation indication gained popularity with the minimal amount considered necessary showing a decrease (weighted kappa ± 0.4).
Conclusions: Our results show that opinions concerning management of acute displaced midshaft clavicle fractures have changed. In all cases operative management gained popularity. However, current opinions in uncomplicated cases are far from uniform.

172 Posterior Shoulder Dislocation and Fracture-dislocation – Diagnostic Trap

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Objectives: Posterior dislocation and fracture-dislocation of the shoulder is the most commonly missed major joint dislocation in the body. Despite advances in imaging it is very often overlooked and misdiagnosed. This injuries are sufficiently uncommon that their occurence creates a diagnostic trap.
Methods: The retrospective study included 28 patients (19 male, 9 female; mean age 57 years, range 30–84) with 32 posterior shoulder dislocations and fracture-dislocations which were treated in our hospital between 1998 and 2008. Diagnostic and operative procedures were evaluated. Functional results were assessed according to Constant–Murley score.
Results: The cause of the injury was epileptic seizure in 14 (44,2%) cases, motor vehicle accident in 7 (21,9%) cases, fall in 8 (25%) cases, skiing accident in 2 (6,3%) cases. The diagnosis had been missed by initial physician in 15 out of 32 injuries (46,9%). All patients were treated operatively except one who died after admission because of massive pulmonary thrombemboly. According to different severity and injury pattern variety of operative techniques were used, ranging from hemiarthroplasty, open reduction and internal fixation to soft-tissue and bone block stabilisation procedures.
Conclusions: Because of the rarity of these injuries, treatment protocols are difficult to devise. We emphasize diagnostic protocol, especially in patients with seizures in order to avoid a missed or delayed diagnosis. We also discuss about treatment options and clinical results.
Author to editor: Topic: Missed injuries: Take home messages

173 The Outcome of Proximal Tibial Fractures Managed with Less Invasive Stabilization System

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Objective: To evaluate our results of proximal tibial fractures that were stabilized with less invasive stabilization system (LISS).
Methods: Twenty-six proximal tibial fractures treated with LISS between March 2004 and February 2007 were evaluated retrospectively, Lysholm score was used for functional assessment. Union of the fractures were evaluated clinically and radiologically. The mean follow up time was 17.7 months (6–37 months).
Results: The functional evaluation was excellent in 12 cases, good in 8 cases, poor in 4 patients, and insufficient in 2 patients. All patients treated by LISS were healed, with 1 patient had acute infection and 1 patient had coronal plane malreduction of 14°.
Conclusion: High energy injuries cause complex fractures with high rate of complications especially in proximal tibial fractures. Fractures of the proximal tibia require an adequate reduction and stable fixation to achieve a successful outcome. The surgical procedure should be minimal invasive if possible. The LISS system seems to provide these requirements. The LISS is a useful technique for stabilization of the proximal tibial fractures.

174 A Comparison of Clinical and Radiological Results with and Without Percutaneous Kirschner Wire Fixation after Closed Reduction of Distal Radial Metaphyseal Fractures in Children

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Distal metaphyseal radial fractures are extremely common fractures in children (%20,2). High rates of displacement occurs during conservative treatment. The aim of this study was to determine the effect of Kirschner wire application after closed reduction of radial metaphyseal fractures with high risk of redisplacement.
In this retrospective study 40 cases were studied in two groups. In group 1 ($n = 20$), K-wire applied after closed reduction. In group 2 ($n = 20$), only cast was applied following closed reduction. The mean follow-up was 20 months. The compared clinical and radiological parameters were; pain, limb deformity, range of motion of the wrist, angulation of the fracture site, radial distal epiphyseal angle and severity of translation.
Redisplacement rate was 10% in group 1 and 50% in group 2. This shows, Kirschner wire fixation had a positive effect in continuity of the initial reduction ($p = 0.014$). Age ($p = 0.289$), gender ($p = 0.264$), reduction quality ($p = 0.970$) had no effect on redisplacement. Concerning the severity of translation, the risk of redisplacement increases in stage 3 (50–100%) and stage 4 (> 100%) fractures ($p = 0.003$). Concomitant complete ulnar fracture had also redisplacement risk ($p = 0.016$). Redisplacement risk increases when the distance of fracture line to epiphyseal line was between 11 and 20 mm ($p = 0.073$). There was no significant difference between two groups after last evaluation based on radiological parameters and clinical results ($p > 0.05$).
As a conclusion; this study shows that Kirschner wire fixation prevents redisplacement in early follow-up of first 3 weeks but there is no superiority after 20 months follow-up in distal metaphyseal fractures of children.

175 Paradoxical Rebound Phenomenon of INR Level in Proximal Femoral Fracture Patients

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Introduction and objectives: Elderly patients with neck of femur (NOF) fracture often have multiple co-morbidities. Some of them are on anticoagulation therapy. Warfarin is the most commonly used anticoagulation agent. High INR levels can cause a delay in surgery which increases the mortality and post operative complications. We looked at the patients with NOF fractures admitted on warfarin. We assessed INR changes from the period of admission to surgery and delay due to high INR. We also looked at various guidelines at local and national level and assessed our practice accordingly.
Method: This is a retrospective study with structured questionnaire in a busy trauma hospital between January 2006 and June 2008 using case notes, haematology results, drug charts.
Results: 665 patients with NOF fracture were reviewed and 41(6.2%) were on warfarin. 34 of them were included in the study. 14 of them had vitamin K pre-operatively, but only two on first day. Average delay was 4.3 days due to high INR. 17 patients had a paradoxical increase of 0.39 of their INR level after stopping warfarin, 14 had a gradual decrease.
Conclusions: The study highlights the importance of practising the guidelines. Vitamin K is an effective agent for reversal of warfarin and normalising the INR rapidly is important to optimize those patients prior to surgery. This study also suggests that there is often a paradoxical rebound phenomenon of INR level after stopping warfarin following fracture NOF. This has not been described before and needs further evaluation with a large sample size.
Author to editor: All the authors agree with content of the abstract. There was not any conflict of interest for this study.

176 Hip Fracture Antibiotic Prophylaxis: the Benefits of Single Dose Gentamicin and Amoxicillin Over a Standard Three Dose Cefuroxime Regime

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We describe the results of single dose intraoperative Gentamicin and Amoxicillin regime compared to 3 doses of Cefuroxime. We retrospectively reviewed 220 patients following hip hemiarthroplasty, creating 2 demographically matched cohorts; Group 1: 3 doses of Cefuroxime (n = 113) and Group 2: single dose Gentamicin and Amoxicillin (n = 107). End points were evidence of infection, length of stay and Clostridium difficile (CD) rates.
Results showed a significant reduction in group 2 for average length of stay (17 vs. 13 days p = 0.0432) and CD rates (7/113 vs. 0/107 p = 0.0158). Considering antibiotic therapies administered; significant reductions in group 2 for the number of patients that required post-operative antibiotics (99/113 vs. 73/107 p = 0.0005), the median antibiotic DDDs (Defined Daily Doses) in first 2 post-operative days (0.25 vs. 0 p = 0.0000) and those that received ciprofloxacin or cefuroxime post-operatively (82/113 vs. 24/107 p = 0.0000). No significant difference was found for median antibiotic DDDs, median antibiotic DDDs from second post-operative day, patients that received Flucloxacillin post-operatively. Measured microbiological outcomes showed a significant reduction in the number of patients with confirmed growth requiring treatment with antibiotics in group 2 (21/23 vs. 12/22 p = 0.0053). No difference was found between number patients with operation site swabbed and those with confirmed microbial growth.
We demonstrate single dose gentamicin and amoxicillin significantly reduces length of stay, CD rates and the number of patients requiring post-operative antibiotics for wound infection, inferring a reduction in the rate of wound infection. We would recommend this as an effective alternative to the three dose Cefuroxime regime.

177 Motorcycle-related Injuries in Al-Ain City: Experience from United Arab Emirates

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Objectives: To study the anatomical distribution, severity, and outcome of motorcycle-related injuries of hospitalized trauma patients in Al-Ain Hospital, United Arab Emirates.
Methods: All motorcycle riders who were involved in a road traffic collision and were admitted to Al-Ain Hospital for more than 24 h or who died in the hospital after arrival were studied. The data of the patients were retrieved from Al-Ain Hospital Trauma Registry. Data were prospectively collected over a period of four and half years (March 2003–October 2007). Demography of patients, Glasgow Coma Score (GCS), Injury Severity Score (ISS), hospital stay, and mortality were analyzed.
Results: There were 105 patients (101 males). Mean (SD) age was 29.1 (11.5) years. 36.2% were United Arab Emirates (UAE) nationals. 61.1% of patients arrived to the hospital by ambulance while 37.1% of patients by civil cars. Head and face was the most frequently involved body region (35.3%) followed by the upper limbs (25.3%) and lower limbs (22%). The median (range) ISS was 5 (1–38). On arrival to the hospital, the median (range) GCS was 15 (3–15). The mean (SD) hospital stay was 8.27 (12.2) days. The overall mortality was 4.8%. Two patients died in the emergency room and the other three died in the operation theater.
Conclusions: Head injury is common motorcycle collisions. The mortality of motorcycle-related injuries was high and all occurred in the first 24 h.

178 New Approach to the Conservative Treatment of Femoral Fractures at Children

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Introduction and objectives: The basic method of treatment of fractures at children is conservative. Indications to interventional treatment at child age fractures are limited and consist about 5% in comparison to all hospitalized patients with fractures (Hodjaev R.R., 2007). The study based on the analysis of 37 children with femur fracture treated during 2007–2008 year in the Republican Research Center of Emergency Medicine (hereafter RRCEM). At the age from 3 till 7 years old were – 20 patients, from 7 to 14 years – 17.
Methods: For the installation of skeletal extension system a Kirschner's wire through a distal metaphysis of the femur was implemented., Damaged extremity was put on the adjustable clinic's frame. The radiological control was carried out on admission on 3rd and for 21st day accordingly. Traction term and weight, correct po-

sition of the damaged extremity on the frame, necessary for an adequate reposition of bone fragments, was calculated with generated by us program ''ROPK''.
Results: In general preliminary results showed positive outcome of hip fractures treatment by proposed method of treatment. In 1 year function of the damaged extremity was restored completely at 35 patients, an axis of the damaged extremity was correct. At 2 children deformation of an extremity axis was detected due to refusal of doctor's prescribed treatment regimen.
Conclusion: It was established that time for conservative treatment would be reduced if appropriate correct posture and traction weight would be selected for damaged extremity which on the system of skeletal extension.

179 Primary Surgical Repair of Acute Achilles Tendon Rupture: comparative Results of Three Surgical Techniques

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Despite a large amount of research on the topic, there is still no definitive concensus regarding the most appropriate primary surgery technique for acute ruptured Achilles tendons as well as for its timing, and the most appropriate postoperative rehabilitation.
In the retrospective analysis of results of three primary surgical techniques, 262 (100%) patients operated on at the University Clinical Center Maribor were included. Group A (open technique with fascial augmentation) included 42 (16.03%) patients, group B (original modification of percutaneous suturing) included 159 (60.69%) patients and group C (original percutaneous fixation with two embracing and crossed loops) included 61 (23.28%) patients. The evaluation of functional results was based on variables and outcomes present in patients' medical documentation, which covered the period of the first 6 months after surgery.
Patients in group C showed the best functional results, the greatest ankle range of motion, the fastest full bearing, the fastest walking on toes and heels, and the shortest duration of physical limitations (walking on uneven ground and sports activities) ($p < 0.001$ for all). In group B, there were two reruptures, in group C one, and in group A there were no reruptures. Good functional results and a relatively small number of postsurgical complications advocate the usage of surgical techniques. The best and fastest functional recovery was attained in the group treated with the original technique of percutaneous fixation with two embracing and crossed loops. Open surgical reconstruction is indicated only in the case of rerupture after percutaneous suturing.

180 Results of Ankle Joint Arthrodesis by Triangular External Fixation for Posttraumatic Arthrosis

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Introduction: There are different techniques for arthrodesis of end-stage arthrosis of the ankle-joint. Internal fixation is the favoured method in many institutions. We retrospectively examined the technique and clinical results of external fixation in a triangular frame.
Patients/methods: From 1994 to 2001 a consecutive series of 95 patients with end-stage arthritis of the ankle joint was treated. Mean age at the index-procedure was 45.4 years, 67 patients were male (70.5%). Via a bilateral approach the malleoli and the joint-surfaces were resected. An AO-fixator was applied with Steinmann-nails. Follow-up examination at mean 4.4 years included a standardised questionnaire and a clinical examination including the criteria of the AOFAS-Score and radiographs.
Results: In two cases, due to contracture a pes equinus position had to be accepted. In two cases a further bone transplant was performed at 6 and 9 weeks for unsatisfactory bony union. After mean 12.3 weeks, radiographs confirmed satisfactory union and the fixator was removed. In four patients a nonunion of the ankle-arthrodesis developed (4.5%). The mean AOFAS score improved from 20.8 to 69.3 points. Statistical analysis of the insurance status showed that patients insured under a workers injury compensation scheme had a mean score of 63.6 compared to 75.1 for the remaining ($p = 0.027$).
Discussion: Nonunion rates and clinical results of arthrodesis by triangular external fixation of the ankle joint do not differ to internal fixation methods in literature comparison. The complication rate and the reduced patient comfort reserve this method mainly for infected arthritis and complicated soft tissue situations.

181 Polyaxial Locked Implants in the Treatment of Periprosthetic Fractures of the Femur

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Implants with multidirectional locked screws have theoretical advantages in the treatment of periprosthetic fractures. In osteoporotic bone they provide a high stability. We concluded a retrospective study of a consecutive series of the outcome of Vancouver B1 and C femoral injuries using two specific locked-implants.
From 1996 to 2004 we treated 58 patients with a periprosthetic fracture of the femur with a locked plate. The mean age at the index procedure was 72.4 years, 40 patients were female (69%). In 32 cases (55.2%) we saw a hip endoprosthesis, in 21 cases (36.2%) a knee endoprosthesis and in 5 cases both (8.6%). Outcome measures were intra- and postoperative complications, bony union, degree of mobility and social status, Barthel-mobility-index and ''stand-up&go'' test.
Union occurred in 56 cases (96.5%) after the index procedure. Twice the implant failed, we saw four general complications. The mean duration until full weight bearing status in these patients was 8.6 weeks. At follow-up 46 patients (78%) had maintained the same social status as before the fracture. Regarding the mobility status 52 patients (89%) had regained their previous level, 4 patients walking without aid before now required a cane and 2 patients a walking frame. The mean Barthel-Index was 85 points of 100. The mean stand-up&go time was measured as 22 seconds.
Conclusion: Overall failure rates of osteosynthesis after periprosthetic fractures of up to 35% are reported (20). With 3.5% implant related failures and 7% general complications, the presented methods achieve bony union and mobility in a high percentage of cases.

182 Renal Function and 1.25 OH Vitamin D in Patients with Prevalent Proximal Femoral Fracture

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Cohort study of 38 patients with proximal femoral fracture, aged 58–94 years, 10 men, 28 women, Charlston co-morbidity index 3.4.
Mean serum calcium level 2.07 mmol/l, phosphate 1.06 mmol/l, OH vitamin D 39.61 nmol/l, PTH 86.11 ng/ml, glomerular filtration 69.36 ml/min/1.73 m^2, 1.25 OH vitamin D 47.08 pmol/l, 33% of patients were osteopenic, 66% had osteoporosis densitometrically.
Serum calcium level was normal in 18% women and 29% men. No one had optimal 25 OH vitamin D level, 86% had hipovitaminosis D below 50 nmol/l. We found positive correlation between 1.25 OH vitamin D and GF and negative correlation between 1.25 OH vitamin D and PTH and 1.25 OH vitamin D and age of the patients.
By dividing patients into two groups accordingly to GF above and below 60 ml/min/1.73 m^2 we found significant difference in serum PTH levels ($p = 0.005$) and 1.25 OH vitamin D levels ($p = 0.001$) but not differences in 25 OH vitamin D and serum calcium level.

183 Pelvic Ring Injuries in Traffic Accidents Death Victims

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Background: To evaluate the effect of pelvic fractures on mortality in traffic accident victims
Methods: In a prospective study of all traffic accident death victims in Ljubljana region in 1 year time period we made pelvis X-ray and separately evaluated X-ray image and autopsy findings of death victims.
Results: Of 154 patients that had died in a motor-vehicle accidents 31 (20.1%) patients had pelvic fractures. 19 (61.3) patients had type C pelvic fracture, 8 (25.8%) patients had type B pelvic fracture and 4 (12.9%) had type A pelvic fracture. 26 (83.9%) patients were already dead on arrival of emergency team at the scene of the accident, with 4 (12.9%) patients resuscitation procedures began at the accident site but death was determined before they came to the emergency department, 2 (6.5%) patients died during resuscitation procedures in emergency room, none have left the emergency department alive. In type A fractures average ISS was 72 in type B fractures average ISS was 71.3 in type C fractures average ISS was 85.3. 25 (80.6%) patients had at least one injury that was not compatible with survival.
Conclusions: Traffic accidents produce high energy trauma and pelvic ring injury is an indicator of accompanying injuries to other organs and body regions. The approach to pelvic ring injury in traffic accident should be precise and fast to exclude other life threatening injures.

184 Arthroscopic-assisted Percutaneous Figure-of-eight Tension Band Wiring of Patellar Fractures

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Introduction: We describe a new arthroscopic-assisted reduction and percutaneous tension band wiring technique for patella fractures that combines the advantages of minimally invasive surgery and stable internal fixation.
Surgical technique: We reduce the fracture percutaneously by towel clips with the patient in the supine position. We insert two 3.0 mm Kirschner (K) wires in a caudocranial direction under arthroscopic control. We do four stab incisions to assign the inferolateral (IL) and inferomedial (IM), superolateral (SL) and superomedial (SM) portals besides the K wire tips. We insert a trocar with its cannula from SL portal to SM portal under the K wires. We take the trocar out and leave the cannula inside. We run 18-gauge cerclage wire through the cannula in SL to SM direction. We take out the cannula. We perform exactly the same steps directed from SM portal to IL portal, from IL portal to IM portal, and from IM portal to SL portal, respectively. Finally near the SL portal, wires are secured with a single knot. We check the fixation by C scope.
Results: Radiographic consolidation was achieved in all five patients at an average of 2 months. All patients returned to the activity level previous to fracture.
Conclusion: This technique presents advantages over open techniques. It is minimally invasive and cosmetically pleasing, permits visualization of reduction and stability, allows concomitant intraarticular pathology to be exposed, and facilitates early rehabilitation. Although we did not attempted yet, we believe that even comminuted fractures can be fixed with this technique.

185 Treatment of Complex Fractures of the Tibial Plateau with Locking Plates

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Introduction: The treatment of complex fractures of the tibial plateau (FTP) is difficult and the results often unsatisfactory. Keys for a better outcome are (1) timing of the procedure, (2) accurate technique, (3) stable implants for early mobilisation. In this study we present our experience in the treatment of FTP with locking plates trying to define the role of a medial plate.
Materials and methods: From 2005 to 2008 we treated 20 patients with a AO C3 FTP by ORIF with locking plates. Indications for a medial plate were: involvement of the medial joint surface, coronal fracture of the medial plateau and irreducible dislocated medial condyle. All the patients have been followed up clinically with the Lysholm and Rasmussen scores and radiographically until consolidation.
Results: All fractures united. One patient underwent knee amputation for septic complication. The mean Lysholm score was ''fair'' while the Rasmussen score was ''good'', that means that the subjective result was worse than the objective one. Patients treated by double plating had a worse clinical result that was not dependent on the quality of reduction. We had three cases of malalignment, one RSD, two superficial infections, two transient nerve palsy.
Conclusion: Complications in our series were frequent and the clinical results not particularly good. The right timing and an accurate surgical technique are essential for a good reduction, newer implants control effectively the fragments but the high energy of the trauma remains the major determinant of the bad outcome of these fractures.

186 Locking Compression Plate System in Periprosthetic Hip Fractures

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Introduction: The high percentage of failure of fixation systems in periprosthetic fractures depends on the technical difficulty of the procedure, the presence of the cement mantle and the poor quality of the remaining bone. The LCP system offers an enhanced stability that reduce the implant mobilization, and preserves the bone vascularity, fastening the healing time. We present our results in the treatment of periprosthetic fractures with LCP.
Materials and methods: 27 consecutive patients with Vancouver B1 fractures were operated on using 4.5 LCP. A standard open reduction of the fracture through a lateral approach was used. Patients were evaluated clinically and radiologically for a mean follow up time of 17.8 months.
Results: All the fractures united except two where a narrow 4.5 plate and too many cerclage wires around the fracture were used. All the patients showed at FU an HHS over 90 points. The anatomical reduction of the fracture led to a faster healing.
Conclusions: The effect of the position of screws and cerclages in relation to the plate and fracture are discussed. The Authors conclude that LCP system, has to be considered the golden standard in the osteosynthesis of Vancouver type B1 periprosthetic hip fractures, permitting early weight bearing and healing in physiological time. It is better to avoid narrow 4.5 plates and cerclages at the fracture site. Suggestions on the plate length and screw and cerclages position are given depending on the fracture type and length.

187 The Role of the Anatomical Prosthesis in the Treatment of Proximal Humeral Fractures

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Introduction and objectives: We would like to present the results of the treatment of proximal humeral fractures with endoprosthesis.
Methods: Between 1997 and 2007 we operated 74 patients with endoprosthesis for proximal humeral fractures. 11 were delta prosthesis, the results of these operations are the subject of an other presentation. 63 patients were treated with anatomical shoulder prosthesis. The results of these were controlled by personal examination (constant score, X-ray) and by the base of the clinical documentation. 61 was hemi-and 2 total endoprosthesis. In 50 cases the operation was acute and in 13 cases for chronic cases. The average follow up time was 76.9 month. We categorized our patients in different groups, based on the fracture type and the time of the surgery.
Results: We compared the CS of the operated shoulder with the contralateral one in each patient group. We have to accentuate the importance of patient cathegorization, because the results can be analyzed properly only on base of these. On the X-rays the prosthesis were in good place, we found no evidence of losening.
Conclusions: When the indication is good, the prosthetic procedure is the choice for acute or chronic fractures of the proximal hunerus, and the results are good. We confirmed the statistically significancy of the efficacy of the treatment methods between the same analyzed groups.

188 Type C Distal Radius Fractures Treated with Simple Ao Plates; an Easy and Cheap Solution in an Locking Plate Era

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Introduction: C type distal radius fractures remain challenging fractures. Currently the locking plates are gaining popularity because of their height stability. A considerable drawback are the high costs. Since 2003 we have been using mini AO plates (2.7 mm) for type C fractures of the distal radius. We present our long-term functional and radiologic results with a cost analysis. Between 2003 and 2008 we treated 34 patients. Retrospective the demographic data was retrieved from our electronic database. We used a dorsal approach, opening the second extensor compartment to expose the ulnar and radial column. Mini AO plates 2.7 mm plates were applied in a buttress fashion. Reduction was achieved with the plates and ligamentotaxis. Rehabilitation consisted of immediate active range of motion.
Results: 34 patients were treated with an average age of 49 years and a male–female distribution of 11–23. The mechanism of trauma was sports related in 14 patients, 11 had a simple fall and 6 a fall from height. Three patients were polytraumatized. On average radial shortening improved 2 mm, dorsal and radial angulation improved 23° and 4°, respectively. At consolidation (8 weeks) the average radial shortening was 0.75 mm, a volar angulation of 3°, and 21° of radial angulation. Functional results were good in 12 and excellent in

21 patients. Compared to locking plates, there was an overall reduction in material costs of 15,300 euro.
Conclusion: Our technique has excellent biomechanical stability, enabling immediate functional rehabilitation, good anatomical and functional outcome with significant lower costs.

189 The Myth of Acute Definitive Internal Fixation of Pelvic Ring Fractures

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Background: In high energy pelvic ring fractures after acute temporary skeletal stabilization, definitive internal fixation is done in delayed fashion.
Aim: To evaluate the safety and efficacy of acute pelvic ORIF.
Methods: 45-month retrospective review of the prospective pelvic fracture database of a Level-1 trauma centre was performed. High energy trauma patients requiring internal fixation of the pelvic ring were included. Patients were categorised as acute ORIF (< 24 h) or late ORIF (> 24 h). Demographics, ISS, pelvic AIS, 24 h transfusions, physiological parameters, time to OR, angiography requirement, LOS and mortality were recorded. *$p < 0.05$ based on univariate analysis.
Results: From the 46 eligible patients 17 had acute definitive ORIF (5.5 h to OR) and 29 late definitive ORIF (5 days to OT). Acute and late ORIF patients had comparable demographics (age:48 ± 22 years vs. 40 ± 14, gender: 82 vs. 79% males), injury severity (ISS:30 ± 18 vs. 24.5 ± 13, pelvic AIS:3.7 ± 1 vs. 3.4 ± 1.1) and transfusion (4.7 ± 5 U vs. 6.6 ± 4 U). Shock parameters were worse in the acute ORIF group (*SBP:69.7 ± 17 vs. 108 ± 21, *BD:–7.35 ± 4 vs. –4.9 ± 1.5, *Lactate: 6.67 ± 7 vs. 2.51 ± 1.3). Angiography was used 18% (3/17) vs. 21% (6/29) of the cases. All early ORIF patients survived and one (3%) of the late ORIF patients died. Hospital LOS (25 ± 24 vs. 37 ± 32 days) and ICU LOS was similar (2.9 ± 2.5 days vs. 3.7 ± 3.6 days).
Conclusion: Acute ORIF of unstable pelvic ring fractures within 6 h could be performed even in polytrauma patients. The procedure did not lead to increased ICU LOS and potentially could decrease the hospital LOS.

190 Treatment of Infected Fractures and Non-unions of Long Bones with Autologous Mesenchymal Stem Cells Enriched Bone Grafting

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Objective: To investigate the outcomes of infected fractures and nonunions of long bones treated with the bone grafts enriched by bone-marrow derived ex-vivo expanded autologous mesenchymal stem cells (aMSC). Design: Prospective. Patients: Thirty one consecutive cases of long bone infected fractures or nonunions were treated with the radical surgical debridement and composite aMSC enriched bone grafts. There were 3 female patients and 28 male patients. Six patients had delayed union of fractures complicated by infection and 25, infected nonunions. Mean age of the patients was 45.0 years (range 20–75). The average number of previous surgeries was 9.5 (range 2–23). Intervention: All patients underwent surgical repair of the infected ununited fractures and application of the aMSC-graft. aMSC cultures were obtained by bone-marrow aspirates and ex-vivo expansion by growing in autologous serum supplemented αMEM growth medium. All patients were treated with 6 weeks of culture-specific antibiotics.
Results: Mean follow-up period was 42 months (range 7–80). Twenty six of thirty one fracture sites (84%) united with mean bone healing time 8.5 months (range 4–13). Three cases were complicated by recurrent infection, including two who continued to have a nonunion. No amputation was performed. The donor site morbidity was observed in no case.
Conclusion: On the basis of this review, we suggest that aMSC enriched bone grafting used for the treatment of long bone infected fractures and nonunions can be considered as an effective treatment option comparable to grafting with autologous cancelous bone and it has minimal donor site comorbidity.

191 MIPO Technique for Humeral Shaft Fractures – Prospective Case Serie

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Design: Prospective case serie
Aim: Clinical and functional results of humeral shaft fractures treating by minimal invasive plate osteosynthesis (MIPO) technique
Material: Within March 2007–August 2008 MIPO was used in 20 patients – 20 fractures, AO type (A – 9×, B – 5×, C – 6×), 8 women, mean age 42 years. (16–78 years), monotrauma 9×, multiple trauma 11×.
Method: Closed reduction (with or without external fixator – EF) using 2–3 approaches. Average follow up was 10 months. Early and late complications, period till the final reduction and functional results were recorded.
Results: Duration of operation time was 80–180 min (avg 125 min). Mean stay in hospital was 14 days. There were four complications (20%): 1× deep infection (necessity of reoperation – drainage, metal extraction after healing), 2× transient palsy of radial nerve (conservative treatment) and 1 loss of stability (imobilization in Gilchrist sling till healing). Healing rate was 100%. Mean time to healing was 19 weeks. Mean period till the final function was 18 weeks. Constant Murley score/Liverpool elbow scoring system (CM/LESS) was 86/8.9. Excellent and good results – 70%.
Conclusion: Up to now results of this method show to be promising. The proper fracture reduction before insertion of the plate and careful approach are essential. This work was supported by the research project MOOFVZ 0000503

192 The Lateral Hip View in the Diagnosis and Management of Fractured Neck of Femur

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Background: Lateral hip X-rays performed for fractured neck of femurs are often difficult to achieve, painful for the patients and inadequate in quality.
Aim: To discover if how often lateral X-ray change the management of fracture neck of femur fractures as an adjunct to the standard AP film.
Method: 6 Orthopaedic consultants and 6 Registrar grade Orthopaedic surgeons were asked to decide the management of 30 neck of femur fracture solely from an AP film. At a second sitting the same films were shown in a different order in conjunction with the associated lateral hip X-ray. The surgeons were asked to comment on the adequacy of the lateral X-ray and their choice of management using the both films to make a decision.
Results: Less than half of the lateral hip X-ray were adequate when reviewed on the monitors and very few operative decisions were changed with the addition of the lateral X-ray.
Conclusion: A standard AP film is usually sufficient to plan management in a fractured neck of femur fracture and the additional time, money, and discomfort of obtaining lateral films does not seem justified in these circumstances.

193 The Use of Long PHILOS (Proximal Humeral Internal Locking System)-plates for the Treatment of Combined Shaft and Humeral Head Fractures

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Introduction: Humeral head fractures extending into the shaft often are a challenge to the surgeon. Although they are a rather rare entity, they often occur in osteoporotic bone and are difficult to stabilize. However, because of their intra-articular extension, a perfect reduction and stable osteosynthesis is needed.
Methods: Between August 2005 and August 2008, 16 patients with a combined shaft and humeral head fracture were operated in our department. A long PHILOS plate was used in all cases through an extended deltopectoral approach. Postoperatively, immediate mobilization was allowed. Mean follow-up time was 11 months.
Results: There were three preoperatively existing radial nerve palsies of which two completely and one partially recuperated postoperatively. There occurred no radial nerve palsies which did not exist preoperatively. Revision surgery was necessary in two patients because of hardware failure and secondary fracture displacement within the first week after surgery. In both cases, again a long PHILOS plate was used. All fractures were radiographically healed within 6 months; there were no cases of avascular necrosis of the humeral head. Most of the patients were subjectively satisfied with the functional result although mobilization of the shoulder was only moderate in nearly half of the cases.
Conclusion: In conclusion we can say the use of long PHILOS-plates for the treatment of combined shaft and humeral head fractures gives good results when carried out by experienced hands.

194 The Use of Antibiotic Cement-coated Interlocking Nail to Treat Severe Open Long Bone Fractures and Infected Nonunions

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Osteosynthesis with the use of locked nails is an efficacious method for the treatment of long bone fractures and nonunions of extremities. However, it is contraindicated in case of infection. One way to obviate this problem is to coat implants with antibiotic-loaded bone cement. The objective of this work was to evaluate the efficiency of antibiotic cement-coated interlocking nails for osteosynthesis of long bones in case of infection (infected nonunions) or at high risk of its development (severe open fractures).
In 2007–2008, nails with antibacterial cement coating were used to treat 29 patients including 15 ones with severe open long bone fractures (Gustilo–Anderson type IIIa–IIIb). These fixators were employed both at admittance of the patients (with an isolated injury) and within 5–6 days after it (in case of polytrauma). 7 patients of this group underwent one-step surgery combining osteosynthesis and the closure of soft-tissue defects with local muscular flaps. In 14 patients with infected nonunions of long bones, osteosynthesis was performed after seeding fistula discharge for microflora.
None of the patients in the group with severe bone fractures suffered deep suppuration and all achieved consolidation of fractures. One case of recurrent infection associated with extensive necrosis of bone was documented in the group of patients with infected nonunions. The remaining patients had resolution of signs of infectious process, and their nonunions consolidated. The use of antibiotic cement-coated interlocking nails is a promising method for osteosynthesis of long bones in case of infection and at high risk of its development.
Author to editor: Severe open fractures and infected nonunions are one of the most difficult problems in trauma orthopedic surgery. We had only one treatment option for this pathology down to resent times. It was an external fixator, but it has many disadvantages. In 2007 we start using antibiotic cement-coated interlocking nail, and we have promising first results. This results we would like to present in Eurotrauma 2009.

195 The Maserati Approach – a New Posterior Approach to the Distal Humerus

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Introduction: We describe our clinical experience with a new posterior approach for reconstruction of distal intercondylar fractures of humerus. The Maserati approach comprises of a midline proximal triceps split in conjunction with elevation of medial and lateral edges of triceps from the condylar ridges. This approach gives adequate

access for accurate reduction and internal fixation of distal and intra-articular humeral fractures.
Methods: A single consultant series of 13 patients with distal humerus fractures (AO grade 13-A to 13-C) were treated using the Maserati approach and distal humeral locking plates over 4-year period at level 2 trauma centre. All cases were reviewed. There were 7 female and 6 male patients with age range from 17 to 79 year. Average follow-up was 12 months. These patients were assessed for:

1. Accuracy of reduction of fracture fragments.
2. Complications i.e. infection, triceps weakness, triceps lag and fracture union.
3. Elbow function as per the Mayo Elbow Performance Score (MEPS).

Results: Nine patients had anatomical reduction. No cases of Infection or nonunion. One case of delayed union. None of the patients exhibited triceps lag or weakness. The MEPS was 70–100 (mean 91).
Discussion: The Maserati approach is a safe approach that provides good access to the articular surface of elbow without compromising the triceps muscle. Triceps continuity is preserved, allowing early rehabilitation without the possible co-morbidities associated with other posterior elbow approaches (non-union of olecranon, triceps weakness or triceps lag).
Author to editor: Dear Sir/Madam, I will be very grateful if you could offer me the opportunity to give a podium presentation about this innovative approach. Patients with distal humeral fractures are difficult to manage and with oral presentation, I will be able to demonstrate clearly, with media presentation, the full advantage of this new approach. Thank you Yours, Hawar Akrawi, MBChB, MRCS, Dip (Trauma)

196 Video Assisted Anterior Fracture Stabilization of the Thoracolumbar Spine

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Introduction: Reconstruction of the anterior column in the thoracolumbar spine has become a standard procedure to prevent post-traumatic spinal deformity. The treatment strategy depends on the fracture pattern and general condition of the patients. New development on the instrument and implant sector has allowed anterior stabilization of the fractures in the thoracolumbar spine to be performed with the endoscopic technique.
Material–Method: Between 2001 and 2003, 50 patients were treated for fractures of the thoracolumbar spine. The age of the patients was ranged from 14 to 62 years. 29 patients were polytraumatised or had additional chest and pulmonary injury. The fracture classification was according the AO. 18 Patients had a neurological deficit at admission. The neurological status was classified according to Frankel Scale (A–D).
Due to fracture instability and compression of the spinal cord 43 patients underwent primary fracture stabilization through a posterior approach and secondary reconstruction of the anterior column by the endoscopic technique.
Results: Improvement of the neurological deficit was observed in 13 cases. CT control at least of 3 years follow up shows good bone integration of the iliac crest bone in majority of the cases. Two patients experienced temporary neurological symptoms, which showed complete remission.
Conclusion: The endoscopic procedure for reconstruction of the anterior load-bearing spinal column developed to a standard concept in trauma management. The minimal morbidity of the operative approach, good visualisation of the operative field and angle stable implant make it possible to restore the anterior column on a safe technique.

197 Reamed Versus Unreamed Intramedullary Nail (Expert Tibial Nail) in Treatment of Tibia Shaft Fractures. Inicial Results of Prospective Randomized Study

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Aim: Presentation of results and experience with ETN in treatment of tibia shaft fractures.
Material–method: Prospective randomized study. December 2005–December 2008 71 patients with 72 tibia shaft fractures (TSF) were included in study.
Results: 40 patients(40 TSF) are healed and followed up (100%). Unreamed nail (UN) group n = 22; 8 female; 14 male; avg. age 41 years; Injury severity score(ISS) ranged 4–9 (ø4.71). Reamed nail (RN) group n = 18; 6 female; 12 male; avg. age 37 years; ISS ranged 4–18(ø7.22). There were 18 close (0.-7; I.-9; II.-2) and 4 open(I.-0; II.-3; III.A-1) TSF in UN group and 11 close (0.-5; I.-4; II.-2) and 7 open (I.-1; II.-4; III.A-2) TSF in RN group. Time to surgery avg. 11 h 39' UN); 11 h 21' (RN). Duration of operation avg. 81'(UN); 106' (RN). Full weight bearing (painless) ranged (UN)14–32(ø20) and (RN) 10–36(ø20) weeks. X-ray healing ranged (UN) 10–32 (ø16) and (RN) 8–24 (ø14) weeks. There was one patient with delay union(32 weeks) in UN group. There were any infection; loss of reduction; re-operation and nonunion in both groups.
Discussion: We started this study because many studies before preferred reamed nailing but we have long term experience with undreamed nail with the comparable results (retrospective analyze). Our hypothesis is that the biological advantages of undreamed nail should display if the perfect technical performance is done.
Conclusion: There are no significant differences between UN and RN groups in our study in this time. We expect recruiting more than 100 patients by the year end and during next 2 years we will be able evidence the data completely.
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198 Septic Arthritis Following ACL Reconstruction

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Infection after arthroscopic anterior cruciate ligament reconstruction is an uncommon complication, which could be a danger not only for joint function, but also for the joint integrity. We have to differentiate by the clinical recognition of this complication from swelling caused by other conditions (for example suffusion). There is no standardized opinion and method in the field of arthroscopic or open

procedure, or necessity of aggressive graft removing. From a consecutive case series of 1,663 patients, who underwent anterior cruciate ligament reconstruction between 2004 and 2006. We report on 16 patients with postoperative septic complication. 4 of these were extra-articular, and 12 intraarticular manifestation. Our protocol is based on infection severity classification modified by Gächter. Reliability and significance level of diagnostic criteria (clinical evaluation, laboratory tests, synovial fluid analysis, and bacterial culture) were analyzed. The outcome was determined by early recognition and consequent treatment. There is only one patient, whose ACL tendon graft has to be removed. The IKDC score shows the following result: A: 4, B: 5, C: 2, D: 1, it proved to be similar to the multicenter studies. In the last 2 years we have no more postoperative infection following ACL reconstruction by the application our protocol. We will review this protocol.

199 Damage Control Orthopaedics and Early Total Care

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Introduction: Early fixation of long bone fractures in the multiple injured patient has been recognized as beneficial in minimizing secondary lung and remote organ failure. Although early fracture fixation is expedient in px with multiple injury ETC may be associated with post-traumatic systemic complication.
Materials and methods: In this study all pz from a consecutive series of 690 trauma patients with truama team activation admitted between 01/04 and 01/06 to department of emergency of Niguarda Hospital in Milan were included when they fulfilled all of the following criteria: directly admitted, ISS of more than 15, and survival of more than 24 h. Patients with fracture of long bones and/or pelvis with a clear indication for operative treatment and the necessity of immediate fracture stabilization where treat according with DCO. All other patients fulfilling the inclusion criteria with minor fracture or thus not requiring immediate fixation formed the control group. ISS, RTS and Ps was calculated at the admission and reevaluated later by the Trauma Leader. All injury was classified with AO and Gustilo classification
Conclusion: The goals of DCO include stopping ongoing injury including local soft-tissue injury and remote organ injury secondary to local release of inflammatory mediators further thought to prevent pulmonary complications by allowing patients to avoid the enforced supine position. This study was conducted retrospectively to evacuate the effectiveness of the Trauma Team organization and to evaluate the concept of DCO by immediate external fracture fixation and consecutive conversion osteosynthesis with regards to time saving, effectiveness and safety.

200 Increased Risk of Death with Cervical Spine Immobilization in Penetrating Cervical Trauma

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Introduction: Prior evidence has suggested that cervical spine immobilization (CSI) with penetrating cervical injury may negatively impact patient survival. The working hypothesis for this study was pre-hospital CSI negatively affects patient survival after penetrating cervical trauma.
Methods: Retrospective chart analysis performed from the trauma registry of an American College of Surgeons, Level I Trauma center. Patients were grouped according to outcomes and the presence or absence of CSI. Mortalities were then grouped according to pre-hospital death (dead on arrival), early hospital death (death in emergency department), or late hospital death (died in hospital). Groups were compared statistically. Significance was accepted for $p < 0.05$.
Results: 188 patients formed the study cohort. CSI was associated with an overall increased risk of death ($p = 0.026$, odds ratio 2.77, 95% CI 1.11–7.12). CSI patients with isolated penetrating cervical trauma also demonstrated an increased risk of death ($p = 0.029$, odds ratio 9.04, 95% CI 1.16–194.43). CSI was not associated with an increased risk of death in patients with multiple penetrating injuries ($p = 0.385$). Two patients had unstable fractures and were completely neurologically devastated at the time of injury.

Patient condition	Pts CSI	Pts NOT CSI
Total patients	111	77
Total dead	27	8
w/multiple injuries	16	7
w/ isolated penetrating cervical trauma	11	1
Dead on arrival (prehospital deaths)	6	1
Emergency department deaths (early deaths)	13	5
Died in hospital (late deaths)	8	2

Conclusions: CSI for penetrating cervical trauma is associated with increased patient mortality.

201 Regulation of Human Joint Capsule Myofibroblasts by the Cytokine Interferon-c

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Introduction: Injury of the soft tissue results in a release of numerous cytokines, which activate fibroblasts of the surrounding tissue to proliferate and to undergo a phenotypic transdifferentiation into contractile myofibroblasts (MFs). In this study we analyzed the hypothesis, that human joint capsule MFs are specifically regulated by the cytokine IFN-γ via the modulation of alpha-smooth muscle actin (α-SMA) which is responsible for the contractile phenotype.
Methods: Joint capsules were obtained from patients undergoing orthopaedic surgeries. To investigate the functional effect of IFN-γ, we cultured MFs in a three-dimensional (3D)-collagen gel contraction model. An alamarBlue assay in combination with the collagen gels was established to analyze the viability and the proliferative capacity of MFs upon IFN-γ treatment. The effect of IFN-γ stimulation on the gene expression levels of the specific MF markers α-SMA and collagen I is going to be determined by real-time PCR (RT-PCR). This part of the study is in progress.

Results: MFs cultured in the presence of IFN-γ show a reduced proliferative capacity. Moreover, the addition of IFN-γ reveals a dose-dependent decrease of collagen gel contraction. These effects were specifically blocked by a neutralizing IFN-γ antibody. First results of RT-PCR analysis show an inhibition of α-SMA and collagen I gene expression by IFN-γ.
Conclusions: IFN-γ reduces MF viability and contractility in a dose-dependent way, presumably by down-regulating MF specific genes. This study suggests that IFN-γ might be effective in attenuating the contraction of soft tissue in fibrocontractive disorders.

202 Long-term Functional Outcome Following Antegrade Versus Retrograde Nailing of Femoral Shaft Fractures

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Introduction and objectives: The management of femoral shaft fractures using antegrade or retrograde intramedullary nailing is a popular method. The purpose of this study is to assess the long-term functional outcome after antegrade versus retrograde nailing of traumatic femoral shaft fractures.
Methods: In a retrospective study, patients with a femoral shaft fracture but no other injuries to the lower limbs or pelvis were included. 43 Patients were treated using antegrade and 17 patients retrograde nailing. Functional outcome scores (Short Musculoskeletal Functional Assessment (SMFA), Western Ontario and McMaster University Osteoarthritis (WOMAC) index, Harris Hip Score (HHS) and the Lysholm knee function scoring scale) were measured at a mean of 7.8 years postoperatively. The visual analog score (VAS) was used to determine pain complaints. The range of motion (ROM) was assessed according to the neutral-0 method.
Results: The mean injury severity score (ISS) was equal in both groups. The ROM of the hip and knee joints did not differ. Although the mean VAS was greater in the antegrade group (2.5) compared to the retrograde group (1.9), this difference was not significant. The mean SMFA in the antegrade group was 16 and in the retrograde group 15. The joint-related outcome scores (WOMAC, HHS and Lysholm scoring scale) did not differ between the two groups either.
Conclusion: This study shows that on the long term the hip and knee ROM, pain, and the functional outcome scores are equal after antegrade compared to retrograde nailing of femoral shaft fractures.

203 Disclocated Midshaft Fractures of the Clavicula Treated with Elastic Stable Intramedullary Nailing; Learning Curve, Radiological and Functional Outcome in 26 Patients

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Introduction: According to recent publications, Elastic Stable Intramedullary Nailing (ESIN) is a promising minimally invasive alternative to both plating and conservative treatment of dislocated midclavicular fractures. We have performed a retrospective analysis of the results of ESIN in our population.
Methods: From January 2006 to April 2008, 26 patients (18 male, 8 female) with an average age of 31.2 years old were included and a retrospective database study was performed. The outcome parameters we analysed were the radiological outcome, the functional outcome and the prevalence of complications.
Results: The fracture healed in an accurate anatomical position in all patients treated with ESIN (100%). Seven patients (26,9%) suffered from irritation around the entrance opening and in four patients (15.4%) the pen migrated medially. In eight cases (30,8%), this resulted in a reoperation, consisting of remodelling, reposition or removal of the pen. In two cases we saw a refracture after removing the pen. The overall complication rate was 38.5%. DASH scores showed an average functional outcome of 6.9 points (range: 0–100) at 14.5 months follow-up.
Conclusion: Operative treatment with ESIN in dislocated midclavicular fractures offers good mid-term radiological results and a good DASH score. The overall prevalence of complications was 38.5% and in 34.6% a re-operation was required. The results found in the available literature showed a re-intervention rate of 50%. Prospective randomised research is required in order to determine the right surgical indications and to find out what the long-term results of this relatively new method of fixation are.

204 Outcome of Distal Complex Humeral Fractures Treated with Two Different Surgical Approaches

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Introduction: Distal complex humeral fractures are a difficult challenge even for experienced orthopaedic surgeons. The elbow consists of tree different articulations in the same articular capsule and has close anatomical relationship with nervous and vascular structures. So as for all articular fractures, they are necessary an exact diagnosis, a careful pre-operative planning and a correct surgical technique. Anatomical reduction, stable fixation, and early mobilisation are key elements for a good clinical outcome.
Methods: In the last 3 years we have treated in our Department 24 distal complex humeral fractures (AO type 13C) with a posterior (transolecranic or trans-tricipital) surgical approach. At the follow-up we have evaluated the clinical outcome with ROM, axys and stability measurement, and with the Mayo Elbow Performance Score. Patient's satisfaction was assessed with the DASH score.
Results: We have noted neither important varus/valgus deformities nor significant loss of tricipital strength or elbow instability. Mean ROM was 112°, and patient's satisfaction and clinical measurements were good to excellent in almost 90% of the patients. No significant functional differences were noted between trans-tricipital and trans-olechranic approaches, but in the second case many patients have needed to remove the olechranic wires because of local pain or tenderness.
Conclusions: Our results are satisfactory and lined up to the best results of the literature. Correct surgical technique and anatomical reconstruction of the articular structures are mandatory, but it is equally fundamental a constant and everyday patient's diligence in the physiotherapy for the best recovery of the pre-trauma function

205 Comparison of MIPO Technique and Intramedullary Nailing in the Treatment of Diaphyseal Femoral Fractures

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Aims: Comparison of two methods in the treatment of diaphyseal femoral fractures, unreamed intramedullary nailing and plate osteosynthesis with LCP using MIPO technique.
Design: Prospective randomised study
Material: 40 patients with 40 femoral fractures treated in traumacenter Level I.
Methods: Including criteria: fracture of femoral diaphysis, age18 – 65 years. Excluding criteria: ISS > 40, head injury with AIS > 2, chest injury with AIS > 2, persistent growth split. Patients are divided into two groups. Group A: LCP MIPO, group B: unreamed intramedullary nailing. Follow up: time of bony healing, local and systemic complications, anatomical results, functional results (Knee society score - KSS, Lysholm′s score - LS).
Outcomes: Into group A were registered 20 patients, into group B 20 patients, was not found statistically significant differences at gender, age, ISS, AO classification, and soft tissue injury between both groups (Tables 1, 2). In group A were 5 complications, 2x failure of osteosynthesis, 1x deep infection, 2x compartment syndrome. Was not found malposition, average score was 86 points for KSS and 83 points for LS. In group B was one complication, 1x nonunion, 1x compartment syndrome. Was not found malposition, average score was 85 points for KSS and 86 points for LS.
Conclusion: Was not found statistically significant differences between both group, intramedullary nailing and MIPO are equivalent methods in treatment of femoral diaphyseal fractures.

206 An Indepth Analysis of Why Decision of Conservative Management of Hip Fractures Was Made in 50 Patients: a Pilot Audit Done in Northwest of England

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Introduction: Different studies of hip fractures suggest that still 11% of hip fractures are treated conservatively (varies 3–37%).
Aim: Our main aim was to find out whether there is a place for nonoperative treatment as a definitive primary option in patients with significant medical co-morbidity.
Methods: We did this audit in 2007 collating information on 1,010 hip fracture patients across 14 NHS hospitals in England. 50 out of 1,010 (4.95%) patients were treated conservatively.
Results: There were 17 males and 33 females patients managed conservatively in our study. During hospitalisation, 4 became bedridden and 30 died. Among these 50 patients, 8 were deemed physically unfit for surgery by anaesthetists and 2 by medical consultants. The decision was made by orthopaedic consultants in ten cases and by multidisciplinary team in four cases. Five patients refused surgery and five patients were palliative due to terminal illnesses. Patients who did not proceed to surgery had significantly higher mortality rates (overall mortality rate 60%) suggesting that they were physiologically much worse group of patients.
Conclusion: As the average life span of our population increases, some hip fractures are now treated nonoperatively because of the possibility of severe or fatal complications due to surgery. Often, refusal of surgery by the patient or the patients' family obligates the need for nonoperative treatment. It might be acceptable not to opt for the surgery if the patients are medically very high risk because of these reasons (e.g. acute cardiac event, severe aortic stenosis, multiorgan failure etc).

207 Isolated Pubic Ramus Fractures: ten-year Follow Up Indicates Significantly Increased Mortality

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The burden of patients with pubic rami fractures seems to be increasing. More patients with pubic rami fractures are admitted to hospital due to the absolute increase in the number of elderly people. Although pubic ramus fractures are generally considered a benign fracture for its inherent stability experience indicated that this fracture is accompanied with a high morbidity and mortality. In a case-control study patients aged over 60 years old with an isolated single fracture of the pubic rami admitted to the hospital were compared for morbidity and mortality to age- and gender matched hospitalized patients without fractures. Data was acquired by the patient files. During 14 years 99 patients, with a median age of 80.1 (range: 60–98) years, were admitted with a median length of stay of 10 days (range: 2–57).
The mortality rates of patients with isolated pubic rami fractures at 1, 5, and 10 years were significantly higher in the patient group compared to our control group, being: 24.7, 64.4 and 93.8%, respectively ($p < 0.05$). One third of the mortality is explained by cardiovascular events. During hospital admission a complication rate of 20.2% was found, which was mainly caused by infectious diseases, including urinary tract infection and pneumonia. Thirty-three percent of the patients (temporarily) went to a nursing home, because of the incapability to mobilise independently.
In conclusion, patients admitted to the hospital for an isolated pubic ramus fracture have significant morbidity and mortality both during hospital admission and during 10-year follow-up.

208 Damage Control Orthopedics in Lower Extremity Open Fractures

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Introduction: Despite the developments in orthopedic surgery, open fractures remain as a challenging problem with high rates of complications. The aim of this study is to evaluate the results of open fractures of the long bones in lower extremity.
Materials and methods: Between 2003 and 2008, 563 patients with 582 open fractures were consulted at our trauma department. There

were 271 fractured bones of the lower extremity. 49 of them were femoral and 75 tibial fractures, respectively. The aetiologies were motor vehicle accident for 65, gun shot injury for 31, fall from height for 22, and industrial accident for 6 cases. According to Gustilo–Anderson classification, there were 5 femoral and 8 tibial Type IIIc open fractures. 12 tibial and 2 femoral open fractures were subject to nonoperative management. In operative 53 cases we used external fixation for final treatment. 13 cases had immediate vascular reconstruction by vascular surgeons. Temporary external fixation was used due to damage control orthopaedic surgery for these cases and Type IIIb cases. In 4 cases open reduction and internal fixation were used as immediate surgery.

Results: 108 fractures healed within 3 to 6 (mean 5.5) months without infection. Two patients died due to additional trauma, while four amputations were performed because of the irreparable vascular injury and one amputation because of osteomyelitis. 10 pseudoarthrosis occured during this period (all Type II and higher) and required 39 additional surgical interventions.

Conclusions: A multidisciplinary approach and emergency management good results can be achived in open fractures

209 Comminuted Radial Head Fractures Treated with a Mopyc Pyrocarbon Prosthetic Replacement

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Purpose: Comminute fractures of the radial head are challenging to treat with open reduction and internal fixation. Radial head arthroplasty is an alternative treatment. The purpose of this study was evaluating our results of a closely followed cohort of patients in whom an unreconstructible radial head fracture had been treated with modular pyrocarbon/metallic prosthesis.

Methods: From May 2003 to September 2007, 24 patients were operated for traumatic injuries in elbow. There were 12 female and 12 male with mean age 49 (34–70 years). The follow-up was a mean of 31 months (12–54 months). Fractures of the radial head have been classified by Mason with a subsequent modification by Johnston. The indication for a radial head replacement are comminuted type III fractures in 16 cases, type IV in 5 cases, and Monteggia variant with olecranon and radial head fractures in 3 cases.

Results: By using the Mayo elbow Score, 18 patients had good/excellent results, with 5 fair and 1 poor outcomes. Patients showed an average arc of motion from –10º to 135º. Complications were three implant dislocations, needed to remove the implant. Asymptomatic radiographic heterotopic ossification in elbow was showed in one case and bone lucencies were found in seven cases. We had not seen persistent instability, infection, synostosis, loosening, severe degenerative changes or impingement.

Conclusion: The treatment of unreconstructible comminute radial head fracture with noncemented pyrocarbon radial head implant usually gives an optimal result depending on the severity of the initial injury and the presence of associated injuries.

210 The Treatment of Fractures of the Intercondyloid Eminence in Adolescents and Adults: techniques and Results

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Methods: This retrospective clinical study is a follow-up examination of bony avulsion fractures of the intercondyloid eminence in adults and adolescents treated in our hospital in the last 7 years. After the medical history was recorded, the course of the accident and type of injury was documented (classification according to Meyers and McKeever). Also the type of treatment (conservative, arthroscopic surgery or open surgery) and accompanying injuries were analysed. The clinical follow-up examination took place after more than 12 months after the trauma. During the face-to-face interview, physical and radiological examination, the knee function, and especially the stability of the knee-joint were assessed. Furthermore the clinical outcome was determined using the Lachmann-test and the Lysholm-knee-score.

Results: The patient group consisted of 19 male and 9 female patients aged 11–74 years. The patients showed subjective and functionally predominant good to very good results. Despite subjective stability and absence of pain, in some patients remained a mild hyperlaxity of the anterior cruciate ligament.

Conclusion: Fractures of the intercondyloid eminence are a rare but serious injury of the knee. The correct diagnosis, classification, and curative treatment of the fracture is indispensable for the flawless function and stability. An individual approach is necessary in every patient.

211 Angle Stable Plate or Angle Stable Locked Nail Fixation in Distal Radius Fractures. An Experimental Examination and Phase I Clinical Study

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Distal radius fractures are typical and frequent fracture of elderly woman with reduced bone density. The angle stable plate, often also multidirectional is today the most common stabilisation device. Because of the introduction of bulky and bended implants as the Micronail or Targon DR we decided to test the XS radius nail witch is a 4,5 mm or 3,5 mm straight nail and witch is introduced after guide wire placement and over drilling with a cannulated drill of the same diameter. It is locked parallel to the joint in 3 different directions with angular stability with threaded wires. Methods: 16 radius sawbones were osteotomised corresponding to a A3 Fracture and stabilised with a angle stable plate (8) and XS nail (8). 1,000 alternating load cycles from 20–200 N were performed and the deformation was registered. Also a FE analysis with the MSC Patran/Marc software were performed. Both types of osteosynthesis showed good stability.

The deformation of the XS group however was 20% lower. Also the calculated deformation in the FE study was 20% lower. Also deformation amplitude was lower with 0.31 mm compared to 0.42 mm in the plate group. The differences however were not significant. Both devices show good biomechanical results. The XS nail has the advantage of mainly intraosseus position, simple operation technique with introduction over a guide wire from the proc. Styloideus radii and over drilling with a cannulated drill of the same size. The exposure of the N rad.superf. must be performed. First clinical evaluation is presented.

212 Angioembolization in Severe Pelvic Fractures: Experience of a Tertiary Centre in United Arab Emirates

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Objectives: To study the outcome of angioembolization of severe pelvic fractures in a tertiary teaching hospital.
Methods: All patients who had angioembolization for severe pelvic fractures during the period of August 2006–December 2008 were retrospectively studied.
Results: Twelve patients (all males) having a median (range) age of 25 (16–37) years were studied. Five were vehicle drivers, four passengers, two pedestrians, and one fall from height. Seven had abdominal tenderness while four had abdominal guarding. Median (range) systolic blood pressure before angioembolization was 87 (60–132) mmHg and 106 (0–123) mmHg after embolization. Nine patients had unilateral internal iliac artery embolization, one had embolization of the pubic bone artery, one had pudendal artery embolization, and one had bilateral iliac embolization and liver embolization. Six patients had external fixation of the pelvis after the angioembolization. Three patients had a laparotomy, the first had intraperitoneal urinary bladder rupture which was repaired, the second had pelvic packing and diverting colostomy for a severe perineal wound, the third had a liver injury and died on the table. One patient had a thoracotomy with interposition aortic thoracic graft. Eleven were admitted to the ICU having a median (range) ICU stay of 10 (1–18) days. The overall median (range) hospital stay was 33 (14–117) days. Only one patient died (8.3%).
Conclusions: Angioembolization of severe pelvic fractures with haemorrhage was successful in 93% of cases and played an important role in the initial management of severe pelvic fractures with haemorrhage.

213 Athroscopic Assisted Medial Plication for Reccurent Patellar Dislocation

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Aims: Patellar instability and painful patellar mal-tracking are common challenging conditions faced by a knee surgeon. The purpose was to describe our results of arthroscopy assisted technique of Patellar stabilisation by Plication of Medial patellar retinaculum.
Materials and method: Between January 2003 and November 2006, 17 consecutive patients who underwent arthroscopic plication of the Medial patellar retinaculum at that hospital were included in study. There were nine female and eight male patients passed with a mean age of 27.7 years. The knees were assessed at regular intervals and the mean follow-up period was 11.2 months (range 6–16). After initial assessment to confirm absence of trochlear dysplasia, the technique involves plication of the medial retinaculum with a nonabsorbable suture passed percutaneously using a long curved needle under arthroscopic vision and a small incision to bury the knot from the plication. Post operative rehabilitation was done with flexion restricted to 30° for the first 2 weeks followed by a gradual return to normal range of movements with Vastus Medialis Obliquus strengthening exercises.
Results: 16 patients reported good outcomes with no further episodes of dislocations. One patient who had persistent patellar instability requiring further distal bony-realignment procedure to achieve stability. None of the patients had major complications.
Conclusion: We report good results with this relatively simple technique of medial retinacular plication and would advocate it as an effectiveless invasive surgical option for patients with recurrent patellar instability in the absence of major trochlear abnormality or significant mal alignment.
Author to editor: I am happy to do a poster presentation of the same if required.

214 The Kocher–Langenbeck-approach: Differences in Outcome of Transverse Acetabular Fractures Depending on the Patients' Position

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Introduction: The Kocher–Langenbeck-approach is most frequently used for open reduction and internal fixation of acetabular fractures the positioning of the patient still falling to the preference of the surgeon. The impact of ''prone'' and ''lateral'' on radiographic outcome and postoperative complication rates was evaluated by this retrospective study.
Methods: Between 2002 and 2007, 27 consecutive cases of transverse acetabular fractures were treated by four attending surgeons, 18 done in a lateral (group A) and 9 in a prone position (group B) with no significant difference in age (39.9/42.1 years) as well as pre- and in-surgery parameters; no patients were excluded. The complication rate was analyzed by medical records, the radiographic outcome by plain X-rays and CT scans after an average of 9 months postoperatively. Comparison of the two patient groups utilized t-tests or chi-square testing of Pearson as determined by number of data points for each variable assessed.
Results: The adequacy of fracture reduction had significantly poorer findings according to Matta in A ($p = 0.032$), resulting in a significantly higher post-traumatic arthrosis rate ($p = 0.049$) defined as Helfet III or IV. No revision surgery was needed; no infection was detected in any group whereas 2 iatrogenic nerve damages (1 temporary, 1 persistent) were found only in A. There was no significant

difference concerning extensive blood loss, femoral head necrosis, Epstein grades, heterotopic ossification classified by Brooker and secondary surgery needed.
Conclusions: Due to gravity the femoral head in the lateral position may constrain reduction leading to an inferior radiographic outcome.

215 The Use of Intravenous Paracetamol in Reducing Opiate Usage in Acute Fracture Neck of Femur

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Purpose: The incidence of fracture Neck of Femur (NOF) has been increasing worldwide, due to an aging population. The commonest forms of analgesia are opioids and in some units regional blockade. But regional block is skill dependent and opiates are known to have many side effects. Paracetamol is an analgesia that is safe and has an excellent side-effect profile within standard doses. Intravenous paracetamol has a far higher predictable bio-availability than oral, within standard dosage. This study is to assess the suitability of using intravenous Paracetamol as an alternative.
Method: Prospective study: a change in protocol resulted in all NOF's admitted under the care of the senior author being prescribed regular intra-venous paracetamol within standard dosage. PRN opioids were available for breakthrough pain. NOF's admitted under the care of other consultants remained on the established protocol. Opioid usage and pain scores (0–10) were measured.
Results: Results of 72 patients were collected, 44 in intravenous paracetamol group and 28 in the original protocol group. There is a 65% reduction in opiate usage in the intravenous paracetamol group (p value = 0.015). There is only a 0.5 difference in average pain score between groups (p value = 0.173).
Conclusion: The use of regular intra-venous paracetamol results in a significant reduction in the need for opioid analgesia. The pain relief within this group was comparable to that in the control group. A simple change in analgesia protocol to a safer, more predictive agent can result in an improved pre/postoperative period.
Author to editor: Funding: the study received no funding from any source.

216 External Fixation in Skeletal Trauma in 21St Century

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External fixation has already became on the end of last century as routine temporarily method of fracture bone fixation, especially in the light of damage control. But out of damage control, external fixation has been accepted in many developed countries as routine temporarily method in treatment of complex articular fractures (knee, ankle, elbow). The main reason was absence (night time, weekend) of experienced surgeon who can treat these complex particular fractures, as during the night. Sometimes, the skin problem can prolong such fixation for three or more weeks. However, external fixation of tibia and distal radius can be method of choose for definitive treatment not only in open but in closed fractures as well. It becomes justified when high mobile and relatively simple external fixation devices have been developed allowing addition correction of reduction. In this paper, we want to present possibility of using already applied, external fixation device as temporarily method. About 1 week after external fixation done (on femur or tibia) we developed technique existing external fixator to be used as a reduction device. Once, desirable fracture reduction achieved, internal fixation is very easy and we do not need fluoroscopy control for reduction, just for internal device fixation by minimally invasive method. Using this method, we already treated 10 patients with femur fractures and 12 with tibia fractures. From results obtained it can be concluded that external fixator developed by Mitkovic is suitable to function as accurate fracture reduction device providing condition for simple minimally invasive internal fixation.

217 Retrograde Nailing in Humeral Shaft Fractures. A Retrospective Analysis

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Introduction: For humeral shaft fractures the intramedullary nailing technique is a commonly used method. The nailing at our department is mostly done from retrograde. We evaluated our patients comparing these two operating techniques.
Methods: Between 2000 and 2006 we operated 71 humeral fractures (m:f = 1:2). Mean age was 60 years. Antegrade to retrograde nailing was 1:3.18. In 2007, 67% of all operated patients were examined, mean follow up time was 38.5 months.
Results: With the antegrade nailing technique the mean postoperative Constant Score was 62.6 (Flexion 122.9° m Abduction 125.7°, Pain 14.6). The elbow extension was free in 77.8%. A correct axial alignment was found in 88%, in 12% we found a varus deviation of 10°–20°. In 17% the nail perforated. In complications there was one prolonged bone healing, one pseudarthrosis and one infection. Two thirds of the patients were very satisfied with the outcome. In the retrograde nailing technique the mean postoperative Constant Score was 75.4 (Flexion 152.2°, Abduction 148.8°, Pain 13.9). The elbow extension was free in 81.1%. Only 6% of the patients showed a mild discomfort at the operative approach at the elbow. A correct axial alignment was found in 88%, in 12% we found a varus deviation of 5°–15°. In 4% patients showed a postoperatively detected fracture in the supracondyle region. 71.4% of the patients were very satisfied with their outcome.
Conclusion: The retrograde nailing technique is a save and sufficient method for treating humeral shaft fractures, especially because the rotator cuff is not disturbed.

218 Results of Bony Bankart Lesions Treated with Open Reduction and Internal Fixation

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Introduction and objectives: The bony Bankart lesion is an avulsion fracture of the glenoid that usually occurs after anterior shoulder dislocation. This injury is frequently missed and often creates shoulder instability. Therefore, open reduction and internal fixation (ORIF) of the fragment is recommended. In this study we looked at shoulder function, instability and pain after this operation. Postoperative X-rays were reviewed on anatomical reduction.
Patients and methods: Between 2000 and 2008, 19 Bankart fractures were operated. They were classified according to Ideberg. Sixteen patients had an Ideberg type 1B fracture and three a type 2. These patients received questionnaires with a number of validated scoring systems. We used the ASES, Rowe shoulder score and the DASH questionnaire.
Results: The response was 73%. All respondents did get a stable shoulder after surgery. Two patients regularly experience mild pain. The average Rowe score was 90.8 (range 0–100). The average ASES score for ADL was 24 (maximum score 30, ADL unlimited). The median DASH score on the quality of life was 5.6 (where 0 means no loss of quality of life). There was a clear positive relationship between the radiological postoperative congruency of the joint, the shoulder function and quality of life.
Conclusions: A bony Bankart lesion should be considered in anterior shoulder dislocations. After ORIF 90% got a good to excellent result, if near to anatomical reduction was obtained. The reduction correlates with the final functional outcome and quality of life.

219 Traumatic Knee Dislocation

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Introduction: Traumatic dislocation is the most severe form of ligament injury of knee.The purpose of this study is to report our cases in past 10 years.
Methods: Between 1998 and 2008, 26 knees in 21 men and 4 women; 25 patients were treated for traumatic knee dislocation in our trauma center. The mean age was 32 (16–80) years at the time of injury. The mechanism of injury were motor vehicle accident in 19, fall from high in 4 and industrial accidents in 2 patients. 11 patients had additional extremity trauma. Vascular injury detected in 4 knees who required immediate reconstruction by vascular surgeons. The orthopaedic stabilization of the initial injury was bridging external fixation in 13 knees included all vascular injuries. 5 patients had fibular nerve palsy. In 14 knees Medial collateral ligament, in 13 knees lateral collateral ligament, in 26 knees anterior cruciate ligament, in 24 knees Posterior cruciate ligament and in 5 knees posterol ateral corner lesions were diagnosed. One had tuberositas tibia avulsion. Multiligament reconstruction was performed on a delayed basis in 13 patients for a minimum of 1 (1–12) month after the injury All patients had functional rehabilitation for a mean 18 (12–28) weeks.
Results: At an average follow-up of 6.3 (1–10) years they were examined for stability and range of motion. All knees having multiligament reconstruction and 8 of the 12 patients in whom nonsurgical treatment was undertaken were stable. Patients having multiligament reconstruction had slightly lower knee range of motion

220 Intramedullary Fixation of the Midshaft Clavicular Fractures

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Introduction: Nonoperative treatment of displaced midshaft clavicular fractures is related with high rate of unsatisfactory results. Intramedullary fixation is the effective method of treatment. Exact technical procedure minimizes the complication rate.
Material–method: We evaluated retrospectively 104 midshaft clavicular fractures, treated with intramedullary osteosynthesis within years 2004–2007. The open reduction of main fragments was followed by stabilization with one K-wire. The diameter of the wire was at least 2 mm. The full bending of the lateral end is crucial to prevent medial migration of the wire. Interfragments were fixed with a resorbable fibre.
Results: Ninety-seven fractures healed uneventfully. From complications we noticed deep infection in one case, one case of the lateral migration of the wire, one case of the failure of osteosynthesis and one case of the breakage of the wire. Nonunion occured in three cases. The absolute majority of complications occured due to the technical fault.
Conclusion: Intramedullary osteosynthesis is safe, less invasive and effective method of treatment of displaced midclavicular fractures, which does not compromise the biological healing potential of the bone. The gentle surgical technique and exact procedure are of high importance for achieving a good functional result.

221 Suspected Scaphoid Fracture? Bonescintigrafie!

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Hypothesis: Computed Tomography (CT) is more accurate than bone scintigraphy for diagnosis of a radiographically occult scaphoid fracture.
Methods: In a study period of 1 year, 70 consecutive patients with a suspected scaphoid fracture but no fracture on scaphoid radiographs were evaluated with CT within 24 h of injury and bone scintigraphy between 3 and 5 days after injury. The reference standard for a true (radiographic occult) scaphoid fracture was either (1) diagnosis of fracture on both CT and bone scintigraphy, or (2) in case of discrepancy, clinical and/or radiographic evidence of a fracture.
Results: CT showed 6 scaphoid and 13 other fractures. Bone scintigraphy showed 17 scaphoid and 21 other fractures. According to the reference standard there were nine scaphoid fractures. The prevalence of true scaphoid fractures among suspected fractures was therefore 13%. CT had a sensitivity of 67%, specificity of 100%, accuracy of 96%, a positive predictive value (PPV) of 100% and a negative predictive value (NPV) of 95%. The prevalence corrected PPV was 100% and the prevalence corrected NPV was 95%. Bone scintigraphy had a sensitivity of 100%, specificity of 90%, accuracy of

89%, a positive predictive value of 53% and a negative predictive value of 100%. The prevalence corrected PPV was 53% and the prevalence corrected NPV was 100%.
Summary: This study could not confirm that early CT imaging is superior to bone scintigraphy for suspected scaphoid fractures. Bone scintigraphy remains a highly sensitive and reasonably specific study for the diagnosis of an occult scaphoid fracture

222 Functional Outcome in Conservatively Treated Scaphoid Fractures

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Introduction: The therapeutic management of scaphoid fractures is still surrounded by controversy. Immobilisation for non- or minimal displaced scaphoid fractures results in a union rate of more than 90%. Functional outcome is often measured using clinical examination and radiological consolidation. However, the indication of how successful the treatment has been is the functional outcome of the patient. Functional outcome of upper-extremity fractures can be measured reliably using the DASH (Disabilities of the Arm Shoulder and Hand) Outcome Measure.
Materials-Methods: 39 consecutive patients with 40 non- or minimally displaced scaphoid fractures, treated conservatively, were included. The trauma mechanism, treatment modality, diagnostic modalities, duration of cast immobilization and complications were analysed for all patients. Functional outcome was measured using the DASH Outcome Measure.
Results: 30 patients showed good clinical and radiologic outcome after 6 weeks of cast immobilization with a mean DASH of 4.6. Six patients consolidated within 12 weeks with a mean DASH of 11.8. Three patients with four fractures took more than 12 weeks to achieve clinical and radiologic consolidation and had a mean DASH of 38.5. The DASH questionnaires showed statistically significant differences between patient age, fracture location and duration of cast immobilization.
Conclusion: Conservative treatment of non- or minimally displaced scaphoid fractures results in good functional outcome after 6 weeks of cast immobilization, particularly in young patients with distal or waist scaphoid fractures.

223 Risk Factors of Malpositioning Pedicle Screws in Posterior Spinal Instrumentations: a CT Analysis of 99 Patients

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Objective: Pedicle screw instrumentation is the most common procedure in stabilizing fractures of the throracolumbar spine, but yields an immanent potential for iatrogenic damage due to malpositioned pedicle screws.
Methods–materials: 99 patients undergoing posterior instrumentations were included. Preoparative CT scans were used to determine fracture level and classification. Postoperative CT scan were evaluated for screw positions of all pedicle screws. Cobb angles were compared to calculate the degree of reduction. The position of all pedicle screws was determined according to the classification proposed by Zdichavsky.
Results: 426 pedicle screws were assessed. 305 pedicle screws were classified as optimal (Ia, 72%), 39 Ib, 23 IIa, 48 IIb, 11 IIIa and 8 IIIb. Malpositions were more often the more cranial pedicle instrumentation was performed (11% increase per level, $p < 0.01$). Malpositions (Ib–IIIb) occurred more often on the right side of the patient ($p < 0.05$). The mean reduction was 10°.
Discussion: This study confirms the hitherto felt but unproven suspicion that malpositioning occurs more often in the upper thoracic spine. Even more remarkably is the side-dependency in malpositioning. We attribute the higher rate of malpositioned screws on the right side of the patient to the circumstance that the surgeon usually stands on the left side of the patient and visual control of the direction of the pedicle screw during insertion is probably more difficult on the opponent side. We recommend envisioning this fact and – if navigation is not used – changing the position during the procedure.

224 Minimally Plate Osteosynthesis of Humeral Shaft Fractures

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Introduction: Minimally Invasive Plate Osteosynthesis (MIPO) for humeral shaft fractures is still under debate but its popularity is rising. Most of the papers presented focus mainly on the safety of the technique and on the implant/radial nerve relationships. Less information is given about the indications and the results in relation to the type of fracture and patients and about the the pitfalls of this demanding technique.
Materials and methods: Between 2006 and 2008 we operated on 18 patients with humeral shaft fractures with MIPO. We mainly used 4.5 LCPs placed laterally on the humeral shaft through two incisions and after isolation of the radial and circumflex nerves. In some cases a third incision was made to reduce the fracture and insert a lag screw or to facilitate plate positioning. We retrospectively reviewed all the patients and registered the surgical time, complications, time to union and clinical results with the DASH and Constant scores.
Conclusion: We conclude that MIPO of humeral shaft fractures is a demanding technique that requires a deep understanding of the fracture fixation principles and a good acquaintance with mipo techniques to achieve good results. We recommend a namely Mipo technique for multifragmentary fractures but when dealing with a simple fracture we suggest to obtain a good fracture reduction, even through a minimal access to the fracture if needed. We do not recommend this procedure in obese patients and in not collaborative patients, but we believe that in selected cases the results can be good and easily predictable.

225 Quality of Life and Functional Results after Open Reduction and Internal Fixation of Calcaneal Fractures

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Background: Dislocated fractures are often treated by means of Open Reduction and Internal Fixation (ORIF). However, little evidence exists about the long-term results of this treatment.
Purpose: To assess the quality of life and functional result after ORIF of the calcaneus.
Methods: All consecutive patients with a dislocated calcaneal fracture, who underwent an ORIF in our hospital during an 8-year period, were selected. Fractures were classified according to Essex-Lopresti. The quality of life and functional result were assessed using the EuroQol-5D (EQ-5D) and the Foot and Ankle Outcome Score (FAOS).
Results: One hundred and ten patients, of which 73 men (66.4%) were selected. The median age was 41.3 years. Sixty-seven patients (60.9%) sustained an isolated fracture, and in 98 patients (89.1%) the fracture was unilateral. Forty-nine patients (44.5%) sustained an Essex-Lopresi 'Joint depression' fracture. Nine patients (8.2%) underwent an arthrodesis of the posterior talo-calcaneal (PTC) joint. The median EQ-5D score was 0.69 (general Dutch population = 0.88). The median FAOS sub-scores (100 = best) ranged between 50 and 83.8. There was no difference in EQ-5D or FAOS scores between 'Joint depression' and 'Tongue type' fractures. Patients with multitrauma or a PTC arthrodesis had significantly worse EQ-5D, FAOS Pain, -Daily living, and -Quality of life scores as compared with the other patients.
Conclusion: Quality of life in patients with ORIF of dislocated fractures is lower than the general Dutch population. Multitrauma and a PTC arthrodesis are associated with a worse quality of life and functional result.

226 Meniscus Transplantation in Biologically Young Patients with Chondromalacy

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Purpose of study: Authors present their experiences with deep frozen meniscus transplantation in young patients with weight bearing pain and chondromalacy in injured compartment after menisectomy.
Methods: Chondromalacy and pain begins usually in some years after subtotal menisectomy in injured compartment. Meniscus transplantation could improve forces transmission and could help to cartilage healing.
Material: From May 2004 to June 2007 operated authors 34 meniscus transplantation, with arthrotomy in 23 patients, arthroscopically in 11 patients, 15 women and 19 men, 24 medial and 10 lateral. Contemporary ACL reconstruction was in 11 patients. All menisci were fixed transosseous to the tibia in anterior and posterior horn and with PDS suture to the capsule. In 8 biologically young patients (31–39 years) with cartilage defects 2nd–3rd second. Outerbridge and good X-ray axis made contemporary microfracture of cartilage defects.
Results: All patients were healed without complications. All patients had no walking pain in 4 months after operation. Control arthroscopy was made in 11 patients from which 6 were after microfracture. All menisci were healed and defects were covered with good fibrocartilage tissue. Control MRI was in 13 patient and all menisci showed normal density.
Discussion: Meniscus transplantation is a new method by which is possible to improve conditions in weight bearing compartment after menisectomy. Deep frozen meniscus grafts healed without problems to the capsule and tibia, decrease weight bearing transmission and improve lubrication of the synovial fluid and by the way nutrition of cartilage too. Results are short time but look very promising.

227 U-shaped Sacral Fractures: Surgical Treatment and Quality of Life

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Background: U-shaped sacral fractures are rare and highly unstable pelvic ring injuries. Surgical stabilization may facilitate early mobilization and reduce mortality. However, limited evidence has prevented the development of a standard treatment algorithm. Furthermore, little is known about the quality of life in these patients.
Purpose: To assess the injury characteristics, choice of treatment and quality of life of patients with U-shaped sacral fractures.
Methods: Eight patients with U-shaped sacral fractures were identified over a 6-year period. Neurological outcome was classified by Gibbons' criteria. Quality of life was evaluated using the EuroQoL-6D questionnaire.
Results: There were five women and three men; the median age was 29 years. The Injury Severity Score ranged from 17 to 45. Definitive internal fixation was established after 2 to 22 days. Percutaneous iliosacral screws were used in two patients with relatively stable fractures. Transsacral plate osteosynthesis was used in one patient with minor displacement. Triangular osteosynthesis with transsacral plating was used in four patients with multilevel sacral fractures, highly unstable fractures or traumatic spondylolysis L5-S1. One patient with an associated L2 fracture received a triangular osteosynthesis without transsacral plating. Early partial weight bearing was encouraged whenever possible. Follow-up ranged from 5 to 65 months (median 36 months). Four patients kept severe bowel and/or bladder dysfunction. In the EuroQoL-6D, pain, mood disorders and mobility problems prevailed.
Conclusion: U-shaped sacral fractures are rare and complex injuries. Operative stabilization is tailor-made on the individual fracture characteristics. Outcome is dominated by neurological deficits, pain, mood disorders and mobility problems.

228 Acute and Post-traumatic Stress Disorder in Traumatic Amputated Patients

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Background: Traumatic amputations are important causes of acute stress disorder and post-traumatic stress disorder. In this study, we aimed to present traumatic amputated patients needed more psychiatric support than the other trauma patients during the hospitalization period in the orthopaedics and traumatology clinic and in the later periods more post-traumatic stress disorder could be observed in this patient group.
Patients and methods: Twenty-two traumatic amputated patients who have been treated in our clinic were evaluated retrospectively. During the early post-traumatic period, between the 2nd and 20th day, it was observed whether they needed any psychiatric support treatment. After the 6th month of the trauma, the patients were referred to the psychiatry department, and it was evaluated whether they needed any psychiatric support treatment by measuring the 'post-traumatic stress disorder scale' (TSSB-Ö).
Results: Twenty-one (%95.5) of twenty-two patients were male, one (%4.5) of them was female. Mean age of the patients was 40.8 (range 15–69). During the early post-traumatic period, 8 (36.3%) of these patients were consulted with the psychiatry clinic according to orthopaedists observations. Five (22.7%) of these patients needed psychiatric support treatment. After the sixth month (6 months–5 years), 17 (77.2%) had chronic and late period post-traumatic stress disorder and needed psychiatric support treatment.
Conclusion: It should not be forgotten that, traumatic amputated patients may need psychiatric support treatment in the early and even in the late period. As we treat them surgically, we should be aware of the psychiatric status of these patients.
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229 The Interaction of Maggot Excretions and Bacterial Biofilms on Biomaterials

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Biofilm formation (BF) in wounds and on biomaterials complicates the treatment of infected orthopaedic materials. We investigated BF by *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Enterococcus faecalis*, *Enterobacter cloacae* and *Klebsiella oxytoca* on polyethylene, titanium and stainless steel and we tested whether maggot excretions/secretions (ES) interfered with BF. Comb-models of the biomaterials were made to fit into 96-well microtiter plates. Aliquots of 100 µl of suspensions of 2.5 x 10E5 bacteria/ml and nutrient medium were added to each well. Combs were placed in the wells and incubated for 3, 5, 7, and 9 days at 37°C. Biofilms were stained with crystal-violet, eluted in ethanol and quantified by measuring the optical density at 595 nm. Maggots excretions/secretions (ES) were collected according to a standardized method, added in different concentrations to (non-stained) mature biofilms (7 days), incubated another 24 h, stained and measured. The results showed tight BF by *S. aureus* and *S. epidermidis*, which was strongest on polyethylene and weakest on stainless steel ($p = 0.0001$). BF by *K. oxytoca*, *E. faecalis*, and *E. cloacae* was very weak on all biomaterials. The effects of ES were tested on *S. aureus* and *S. epidermidis* only, because of the weak BF of the other bacterial species. On all materials, BF by *S. aureus* was inhibited ($p \leq 0.0063$) and even broken down by ES ($p \leq 0.0407$). *S. epidermidis* showed comparable results. Previously, we showed reduction of *Pseudomonas aeruginosa* biofilms. We conclude that maggot ES can reduce BF and may be used as adjuvant therapy to reduce BF on orthopaedic materials.

230 Intramedullary Nailing Of Proximal Tibia Fractures – an Anatomical Study Comparing Three Lateral Starting Points for Nail Insertion

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Introduction: Intramedullary nailing is challenging in proximal tibia fractures, associated with high rates of malalignment. To date, no studies report the potential of lateral tibia nail insertion to correct primary valgus malalignment, commonly seen in proximal quarter fractures.
Materials and methods: 18 fresh-frozen cadaver lower extremities were used to simulate an AO/OTA 41-A3 fracture. Six nails (Expert Tibial Nailing System, Synthes, Salzburg, Austria) were inserted at the lateral third, six nails at the middle third and six nails at the medial third of the lateral tibia plateau. After nail insertion, alignment in the coronal plane was recorded.
Results: Mean varus malalignment was dependent on the entry point at the lateral tibia plateau. Mean varus malalignment was 16° if nails were inserted at the lateral third, 10° at the middle third and 4° after nail insertion at the medial third. If nails were inserted from the medial third, valgus malalignment was recorded in two specimens.
Discussion: The effect of correction of coronal malalignment in proximal tibia fractures is dependent on the point of nail entry at the lateral plateau. Primary valgus deformation up to 20° can be corrected by inserting tibia nails at the lateral third of the lateral tibia plateau. Surgeons should be aware of possible varus deformity and valgus malalignment despite lateral nail insertion.

231 "MIPO" and Open Reduction

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Simple torsional and oblique shaft fractures may be treated in a simple way by anatomical reduction and plate fixation (except mid-shaft fractures, where nails are the goldstandard today, and in children with still open growth-plates). There was a time when open reduction by large incisions were performed in these patients. Today,

under the impression of the MIPO technique indirect, closed reduction and plate insertion without any big incisions are proposed. The disadvantage of this technique, which acts perfectly well in compound fractures, are malrotations, that may ask for further surgery. These types of fractures can also be treated by open reduction using a small incision and insertion of the plate by means of another two small incisions. Interfragmentary compression can be achieved by a lagscrew through a plate hole. The advantage of this technique is anatomic reduction (without any rotational deformity) and rigid fixation in combination with ''MIPO'' insertion of a plate. This technique can be used in distal tibia fractures (most common location), humerus shaft fractures (if no nail is at hand) and radius shaft fractures. Examples of the said locations and the operative technique are demonstrated.

232 Influence of Radiological Criteria for Operative Treatment on Functional Outcome in Patients with Distal Radial Fractures

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Introduction: Treatment of patients with distal radial fractures is primarily based on radiologic parameters. However, correlation between these parameters and functional outcome is questionable.
Objective: Determine the value of radiological parameters for the appropriate treatment of patients with distal radial fractures.
Methods: A retrospective analysis was performed for a consecutive series of patients with conservatively treated distal radial fractures. Axial radial shortening, radial displacement, radial angle, dorsal angle, and dorsal displacement were measured on the postero-anterior and lateral X-rays. Functional outcome was measured using the Quick DASH-score (QDS). Minimal follow up was 24 months. The radiological findings of patients who met the criteria for conservative treatment were compared to those of patients that met the current criteria for operative treatment (dorsal angulation $> 10°$, radial angle $> 10°$, radial displacement > 2 mm, radial shortening > 5 mm and step off > 2 mm) but who had been treated conservatively instead.
Results: In a 2-year period 396 patients were treated conservatively for a distal radial fracture. The QDS was performed in 256 (65%) patients. Male female ratio was 1:3, the average age was 60 years (range 18–94). The mean QDS was 12 (SD ± 18; range 11–84). Age and female sex associated negatively with the QDS. None of the radiologic findings was associated with the QDS. Half of the patients met the current criteria for operative treatment. The QDS of this group corresponded however with that of the correctly conservatively treated patients.
Conclusion: No correlation was found between the current criteria for operative treatment and the functional outcome as expressed by the QDS.

233 Minimally Invasive Intramedullary Stabilization of Clavicular Fractures with the Use of Titanium Elastic Nails (TEN)

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- Unsatisfactory results of nonsurgical treatment of displaced clavicular fractures have been described between 15 and 31% of cases due to pseudarthrosis, pain, shortening, thick callus with unacceptable cosmetic outlook. Rucksack bandages may cause severe discomfort and do not always prevent shortening. ORIF with plate is associated with complications: infections, pseudarthrosis, keloid formation, 2nd operation to remove hardware. Earlier trials with K-wire fixation led to occasionally disastrous complications.
- Between 2002 and 2007 366 clavicular fractures were treated with intramedullary TEN using minimally invasive technique at our institute, 318 adults and 48 adolescents. Mean age was 31 years. Associated injuries were in 21.6% of cases. TEN was introduced at the sternal end of clavicle. In 45% closed fracture reduction was successful, in 55% a 2–3 cm incision above the fracture was necessary. Intraoperative complications were: unsuccessful reduction and conversion to ORIF in two cases, bleeding in one case. Infection occured in three cases. In 5.4% TEN had to be removed after fracture union because of medial migration protruding under the skin. Mean hospital stay was 2.5 days. Shoulder exercises began on day 1. No external support was used. Lately the indication was extended to lateral clavicular end fractures with transacromial TEN fixation (18 cases). All fractures united. Mean follow-uptime was 12 months. Mean Constant and Murley score was 94%.
- Intramedullary use of TEN in clavicular fractures with minimally invasive technique provides sound fixation. We recommend it for routine use in clavicular shaft fractures.

234 A Comparison Between Interlocking Intramedullary Nailing and Expandable Intramedullary Nailing in the Treatment of Femoral Shaft Fractures

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The results of treatment with interlocking or expandable intramedullary nailing were evaluated for femoral shaft fractures. We hypothesized that the expandable nails have satisfied results as well as conventional locking intramedullary nails in treatment of selected fractures. The study included 68 patients had femoral midshaft fractures. The mean age was 32.6 (18–70). Forty-eight fractures were treated by interlocking intramedullary nailing and 20 fractures by inflatable intramedullary nailing. The patients were evaluated with regard to operation times, range of motion in postoperative period, fracture union times, weight bearing times, and fluoroscopy application times. The mean follow-up of 26.9 weeks. The results were evaluated according to the Thoresen criteria. Final evaluation included 62 fractures whose follow-ups were completed (missed cases from conventional nail group).
The mean time to union was interlocking for intramedullary nailing was 16.5 weeks and for inflatable intramedullary nailing was 15.2 weeks (12–24). average operation time was interlocking intramedullary nailing 93 min (55–120) and expandable intramedullary nailing 26.3 min (20–35). According to the Thoresen criteria, interlocking intramedullary nailing 86.6% and expandable intramedullary

nailing 95% of patients had excellent or good results. Exposure to ionizing radiation was minimized by expandable intramedullary nailing. Most difficult part of the intramedullary nailing is distal interlocking period. This period is time consuming and includes more radiation from fluroscopy. The expandable nails can straighten out that period. They present enough stability without locking nails in selected cases. The inflatable nails have a reliable alternative for treatment of selected femur fractures.

235 The Results of Conservatively Treated Simple Elbow Dislocations

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Introduction: Conservative treatment is generally preferred for simple elbow dislocations. In this study, the clinical and radiological results of conservative treatment are retrospectively evaluated. The patients were treated with closed reduction, plaster splint and brace.
Methods: Dislocations of all 21 patients were towards posterior and the average length of immobilization was 20.2 days (7–30 days) after closed reduction. The patients were assessed clinically for range of motion, instability, and atrophy after 33.9 months of mean follow up. Mayo Elbow Performance Score (MEPS) was used to evaluate functional outcome. Standard elbow X-rays were evaluated for degeneration, heterotopic ossification, and concentric reduction.
Results: The average age of the patients was 35.4 (12–81) years. None of the patients had muscular atrophy. Four patients (19.1%) reported mild pain with heavy activity. Six patients (28.6%) had neurological complaints related with ulnar nerve. The average flexion arc and average rotational arc were 131° and 172°, respectively. The differences between the contralateral elbow motions were 10.9° for flexion arc and 3.1° for rotational arc. Four patients (19%) had minimal residual instability. Three patients (14.3%) had mild radiographic signs of arthrosis and 14 patients (66.7%) showed minimal-mild degree of heterotopic ossification. An average score of 96.9 was obtained using MEPS. Only four patients (19%) considered themselves fully recovered.
Conclusion: Closed reduction and immobilization is a universal method for simple elbow dislocations. However, although functional scores were excellent, most of the patients did not consider themselves fully recovered.

236 Outcomes of Intertrochanteric and Subtrochanteric Femoral Fractures Treated with Proximal Femoral Nailing Technique

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Introduction: Proximal femoral nailing is a treatment modality for intertrochanteric and subtrochanteric femoral fractures. Its advantages are short application time, low blood loss, and minimal surgical dissection. We retrospectively evaluated the clinical and radiological results of proximal femoral nails applied in our institute.
Methods: In this study 73 hips of 71 patients were included. There were 34 male and 37 female patients. The average age was 71.2 (33–95 years). Only 29 patients accepted to come for radiological control and for remaining 42 patients Barthel Daily Living Activity Score (BDLAS) and mortality rate were evaluated by telephone interview. Physical examination, fracture healing, BDLAS, and complications were evaluated.
Results: Fifteen (21.1%) patients were dead. Radiographic healing of fracture was observed in 27 of 29 patients. No callus formation was observed in radiographs of two patients. In four patients cephalomedullar screw penetration was observed. The mean BDLSA was 18/20 (8–20). No infection was detected. Mean surgical duration was 42.4 min, and mean blood loss was 108 cc. Patients did not require blood transfusion.
Conclusion: Proximal femoral nailing technique has several advantages for intertrochanteric and subtrochanteric femoral fractures in elderly patients with minimal surgical dissection, minimal blood loss, and short operation time. These factors decrease mortality and morbidity. However, instable fractures require surgical experience for this technique.

237 Maggot Excretions and Antibiotics in Infected Wounds: do They Have a Synergistic Effect?

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Maggots are successfully used as a treatment for severe infected wounds in trauma patients. We investigated whether maggot excretions/secretions (ES) influence the antibacterial activity of different antibiotics. We determined minimal inhibitory concentrations (MIC) and minimal bactericidal concentrations (MBC) of gentamicin and flucloxacillin for *Staphylococcus aureus*, of penicillin for *Streptococcus pyogenes*, of amoxicillin and vancomycin for *Enterococcus faecalis*, of gentamicin for *Enterobacter cloacae*, and of gentamicin, tobramycin and ciprofloxacin for *Pseudomonas aeruginosa*. Bacteria were grown overnight in nutrient medium. In the first experiment, we determined MIC and MBC of every bacterium and antibiotic alone. Then, by checkerboard titration, we investigated a range of concentrations of antibiotics in combination with ES and compared MIC and MBC. A start inoculum of $5 \times 10E6$ bacteria/mL was used. The results show a dose-dependent synergistic antibacterial effect of gentamicin and ES on *S. aureus* ($p = 0.0015$). In presence of ES, MIC and MBC of gentamicin decrease 32-fold. Gentamicin and ES reduce the bacterial growth of *P. aeruginosa* ($p = 0.0001$). The other ES/antibiotic combinations showed no synergistic or antagonistic effect. As we showed in previous research, ES alone have no antibacterial effect. The synergistic effect of gentamicin and ES can be of direct importance in clinical practice, because a very low concentration of gentamicin is bactericidal in presence of ES and thus the risk of gentamicin side-effects (nefrotoxicity and hearing loss) can be minimized. In further research, we will focus on the mechanism behind this synergism and on possible indirect antibacterial activity of maggots and/or their ES.

238 Damage Control Orthopaedics in Pelvic Injuries

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High energy pelvic trauma is one of the life-threathining problems at emergency departments due to internal bleeding and urogenital system injury. The aim of this study is to report experience on pelvic ring injuries.
Materials–method: Between 2003 and 2008 396 pelvic ring fractures were evaluated at our trauma department. Fractures were classified according to Tile classification. There were 283 Type A, 75 Type B, and 38 Type C fractures. Immediate pelvic external fixator was applied in 11 hemodynamic unstable pelvic ring injuries to restore hemodynamic stability. In the 8 of these 11 patients, urogenital injuries were also operated in the same sessions. Seven pelvic belts were used to maintain hemodynamic stability. 15 open book injuries were followed closely without intervention. 14 sacroiliac joint dislocation were stabilized with percutaneous cannulated screws. Four symphysis pubis diastasis were treated with plate-screw fixation.
Results: Two patients who had additional severe injuries died despite intensive care management. One patient with open pelvic fracture had deep wound infection and treated after recurrent debridments and antibiotic therapy. Pelvic fixators were removed at an average of 8. At the latest radiologic evaluation 13 patients were seen to have a slight pelvic tilt, there were four pseudoarthrosis. Five patients had significant sensory loss.
Conclusions: Early management of pelvic fractures with multidisciplinary approach may decrease the mortality and morbidity. Damage control orthopaedics is the current choice of treatment in pelvic trauma.

239 Anterior Odontoid Screw Fixation in the Elderly Patient: a CT-based Analysisof Risk Factor for Non-union

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Anterior odontoid screw fixation (AOSF) is a valuable treatment after OF, reported union rates in the elderly vary between 70 and 100% when assessed on plain radiographs. In this study union-rates in OF treated with AOSF in patients aged ≥60 years were revisited and risk factors for non-union analyzed. Retrospective data review of a prospectively gathered C2-fracture patients treated with AOSF for OF and age ≥ 60 years were included for study. Asides demographics and common injury characteristics, injury radiographs and CT-scans were assessed for fracture displacement, type, atlantodental osteoarthritis and particularly focussing on the square surface of OF. Follow-up CT-scans were assessed for technical failures, odontoid union, number of screws in AOSF, square surface of screws used and the related healing surface.
There were 13 male (72.2%) and 5 female (17.8%) patients with a mean age of 78.1 ± 7.6 years at injury (60-87y). Mean follow-up with CT-scans was 75.7 ± 50.8 months (4.2-150.2mo). Intervall injury to AOSF was 4.1 ± 5.3 days (0–16 days). Mean square surface of fractures was 127.1 ± 50.9 mm^2 (56.3–215.9 mm^2) and mean osseus healing surface was 84.0 ± 6.8% (67.6–91.1%). CT-based analysis revealed osseus union in nine (50%), while the remaining nine patients (50%) revealed non-union. In two patients, symptomatic non-union indicated posterior fusion of C1-2. Union-rate significantly correlated with increased fracture surface ($p = 0.02$). Observable was the trend that using two screws for AOSF correlated with increased fusion-rate compared to one screw ($p = 0.06$). Development of osseus union was not influenced by age of patient, the interval injury to index treatment nor by osseus healing surface.

240 A Simple and Old Reduction Method for Traumatic Anterior Dislocation of the Shoulder: chair Method

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Introduction: Traumatic dislocation of the shoulder is an orthopedic emergency. To reduction under anesthesia or sedation is offered treatment method. Especially in army, at the battle field or combat training area might not be suitable using anesthesia or sedation. The aim of this study was to attract attention and show that how efficient of this technique.
Material–Method: Between 2007 and 2008, 20 patients had isolated traumatic anterior dislocation of the shoulder joint were treated by ''chair reduction method'' (White, Parisien, Clotteau). A patient has shoulder dislocation is asked to sit on a chair in profile position without anesthesia or sedation. The patient's armpit is fitted to top of the chair's back. The top of the chair is supported by a pillow so that avoiding to axillar nerve damage or broken of humeral neck. Physician stands to behind the chair, grabs the patient's elbow, and applies vertical traction. A little external rotation may necessary (Milch, Hippocratic). The patient is not able to contract his muscles. There is not necessary to countertraction because of back of chair (Matsen). The patients' demographics were recorded.
Results: Mean age was 22. After preparing period of chair method, all dislocations were reduced in less than 10 s. We did not face any complication.
Conclusions: Giving education to residents about chair reduction method is recommended for using unsuitable circumstances. The chair method especially for young patients is reliable and practical method for reduction of shoulder dislocations.

241 Early Pelvis Osteosynthesis in the Management of Polytrauma Patients

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Introduction: Pelvis fractures consist 25–48% of polytrauma injuries. Poor treatment results of the patients with pelvis injuries in specialized traumatologic departments are accounted for insufficient volume of medical care at the early period of treatment and, as a consequence – development of early posttraumatic complications.
Methods: We present our experience of surgical treatment of 167 patients with pelvis fractures type B and C (M.Tile classification), associated with 449 nonpelvic injuries. ISS scale was 25–50 points. The mean age was 32.6 ± 1.12 years. Males were 109 (65.3%), females 58 (34.7%). The treatment was carried out in parallel with the

antishock measures on the resuscitation step. Stabilizing pelvis osteosynthesis was performed in 18 patients, early intervention – in 116, late operation – in 33. Patient hemodynamics was stabilized after stabilizing and early pelvis osteosynthesis; the volume of transfusion decreased on 1.2 ± 0.2 liter per day ($p < 0.01$) (average for one patient), blood preparations – 0.68 ± 0.2 liter per day ($p < 0,01$).
Results: At operating table there was performed a satisfactory reposition of pelvic ring and a stable fixation in 91%. The patients after stabilizing osteosynthesis felt themselves more comfortable. They could change the position in bed, activated their regime. The treatment outcomes were evaluated according to S.A.Majeed scale: excellent – 14.37% (n = 24), good – 41.32% (n = 69), satisfactory – 41.92% (n = 70), unsatisfactory – 2.39% (n = 4).
Conclusions: Early pelvis osteosynthesis provides a stable fixation, promotes more favorable course of traumatic disease and local regenerative processes, prevention of complications and improvement of treatment outcomes.

242 Minimal Invasive Fixation of Proximal Humeral Fractures with an Intramedullary Nail: good Results in Elderly Patients

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Introduction and objective: To report on the results of a minimally-invasive technique for the fixation of displaced proximal humeral fractures with a locked intramedullary nail (T2).
Methods: All consecutive patients (in a single institution) with displaced proximal humeral fractures who were treated with an intramedullary T2 nail between 2004 and 2007 were evaluated. Thirty-three patients were included (mean age 78, m:f ratio 1:4). Fracture characteristics were classified according to AO and Neer. Follow-up included the Constant Score and the Shoulder Rating Questionnaire.
Results: Eighteen patients had a two-part fracture, eleven patients had a three-part fracture and five had a four-part fracture. Functional outcome according to the Constant Score was excellent in nine, satisfactory in eight and poor in three patients. Subjective outcome was satisfactory to good for patients with two-part and three-part fractures but poor for four-part fractures. Major complications comprised four fixation failures, two cases of impingement and one deep infection. Avascular necrosis did not occur.
Conclusions: Minimally-invasive fixation of displaced two-part and three-part humeral fractures in an elderly population shows satisfactory to excellent results in 80% of patients.
Author to editor: There is no conflict of interest in this study.

243 Causes of Death in Hemodynamically Unstable Patients with a Pelvic Ring Fracture and the Relation with Therapeutic Strategy

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Lifethreathening hemorrhage is often seen in pelvic ring fractures. Efficient treatment of this hemorrhage is critical for survival in these patients.
The purpose was to analyse the causes of death in hemodynamically unstable patients with a pelvic ring fracture and to determine if standardized treatment will reduce mortality. Retrospectively, all data were reviewed of hemodynamically unstable patients with a pelvic ring fracture in the period 1/1/1999 till 1/9/2006. Of all patients, the pathway of treatment was analysed and compared with the standardized treatment protocol in our clinic. All injuries were categorized in injuries in Airway, Breathing, Circulation and Disability according to ATLS® principles. Death was classified as directly related to the pelvic fracture if the patient required massive transfusions, died within 24 h after admission and had no other body area injury with AIS ≥ 4 responsible for persistent hemorrhagic shock.
We reviewed the data of 115 patients. 26/115 patients died (23%). These patients were significant older and had a significant higher ISS and shock class than survivors.
Two patients died of pulmonary trauma (7%), 11 patients (43%) died of exsanguination(C) and 7 patients (28%) died due to major head trauma. In 6 patients (21%) there was a combination of injuries, which caused death. Thus, overall hypovolemic shock contributed to mortality in 17 cases. Only in three patients death could be directly related to hemorrhage from the pelvis. Two nonsurviving patients (8%) were not treated according to our standardized treatment protocol. In the survivor group this was only one patient.

244 LISS Plating of Distal Femoral Fractures in the Elderly: Outcomes and Complications

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Introduction: The management of distal femoral fractures in the elderly has always been considered challenging and can be associated with several complications. Operative fixation allows for early mobility and return to function, we describe the results of LISS plating in treating distal femoral fractures in 28 patients over the age of 55 years and discuss the outcomes and complications.
Materials–methods: All patients over the age of 55 who sustained a distal femoral fracture, between August 2003 and December 2007, treated with a LISS plate were included in the study. The patients were reviewed clinically and radiologically and the degree of mobility at final follow up was assessed. A total of 28 patients were included with an average age of 79 years and mean follow up of 15 months.
Results: 85.7% of fractures were secondary to falls and low energy trauma, 53.5% had intraarticular fractures. Interestingly, 39.2% of patients sustained peri-prosthetic fractures. Complications included three implant failures, nonunion in three patients, prominent metalwork in one patient and residual knee stiffness in one patient. Three patients required further procedures. The mortality rate was 7.1% with no incidence of superficial or deep infection noted and seven patients returned to their previous level of mobility.
Conclusion: LISS plating is an effective treatment modality in treating distal femoral fractures with minimal soft tissue dissection however the technique requires a degree of experience and it is paramount that anatomical reduction be achieved prior to insertion of the implant.

245 Ultrasound as a Selection Method for the Treatment of Acute Total Achilles Tendon Ruptures

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There is no consensus on the treatment of the acute total Achilles tendon rupture. Treatment modality is chosen on the basis of patient characteristics or the preference of the attending surgeon. Using ultrasound, the distance between the two tendon ends in equinus position can be measured. This could form the basis for decision making between conservative- and surgical treatment. This cohort study consists of 164 consecutive patients, between January 2000 and January 2007. Using ultrasound, patients were assigned to a surgical- or conservative treatment group. A gap of more than 2 mm in maximal equines position was an indication for surgical treatment. Seventy-two patients, 60 men and 12 women, received a conservative treatment. In 91 patients the Achilles tendon was primarily sutured. In the surgical group the post operative treatment was identical to the conservative treatment. The male–female ratio did not differ significantly ($p = 0.738$). The average age was 41 years. Sports caused 88% ($n = 144$) of all injuries. The surgical group showed six re-ruptures versus nine in the conservative group ($p = 0.195$). On average, a re-rupture occurs after 55 days. No significant difference in major and minor complications ($p = 0.500$). Outpatient treatment was needed 75 days for the surgical treatment group versus 85 days for the conservative treatment group ($p = 0.357$).
Ultrasound measured distance between the two ends of the Achilles tendon in equinus in an acute total rupture can be used as a selection method in making a decision between surgical and conservative treatment.

246 Proximal Third Tibial Fractures: evaluation of Two Different Treatment Methods

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Purpose: To evaluate the knee function and efficacy of intramedullary nailing and plate fixation in proximal third tibial fractures with or without joint extension.
Patients and Methods: Over a 6 year period between 2001 and 2006 at two university settings, 105 proximal third tibial fracture were treated with either intramedullary nailing with static locking screws or minimal invasive plating. Sixty-one fractures (Group I) were treated with plates in a minimal invasive manner. Forty-four fractures (Group II) with closed reduction and intramedullary nailing. Prospective data acquisition were done in all patients. Radiographs were reviewed to determine fracture healing and alignment. Lysholm score was used for functional assessment and compared.
Results: Sixteen patients could not be followed overall. The remaining 49 fractures in Group I united at an average of 20.2 weeks. The average union time in 40 fractures of group II was 22.5 weeks. Average follow-up period was 45.6 months in group I and 43.2 in group II. Acceptable radiographic alignment was obtained in 43 fractures in group I (87.7%) and 31 fractures in group II (82.5%). The mean Lysholm scores were 79 and 81 points in group I and II, respectively. The difference was not statistically significant ($p = 0.53$).
Conclusion: Intramedullary nailing and minimal invasive plate fixation are both effective treatment modalities of proximal tibial fracture. Despite radiographic malalignment in some cases,the functional knee score was not different between two.

247 Comparison of the Use of a Long-stem Cementless Femoral Component with Allograft and Without Allograft for the Management of Type B2 Periprosthetic Femoral Fractures

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Aim: Evaluate our results of treatment of type B2 periprosthetic femoral fractures (Vancouver classification) using a long-stem cementless femoral component with or without allograft.
Material–methods: We reviewed the midterm follow-up of 16 femoral periprosthetic fractures around the stem with an unstable implant managed with a long-stem porous-coated femoral component.The average follow-up in this series was 5 years (minimum 2 years).The average age of the patients at the time of fracture was 78.3 years (range 66–91). Nine fractures were treated with a long stem porous-coated femoral component and seven were treated with additional allograft struts placed around the fracture and secured with cables. The patients were evaluated at 1, 3, and 6 months after the operation, and every year thereafter. Harris hip score, major complications and fracture-healing were assessed.
Results: In the group without allograft all the fractures showed union; the average time to union was 3.4 months. In the group with allograft, one fracture showed nonunion; the average time to union was 3.3 months.There was no statistically significant difference between the union rate and the incidence of nonunion between the two groups (RR 1.29 (0.23–6.98). There were two patients in each group who developed deep infection. Nevertheless, no statistically significant difference was found (RR 1.2 (0.63–3.93). The mean Harris hip score was 55 points in the group without allograft and 49 points in the other group. This difference was not significant.
Conclusions: A long-stem cementless femoral component is indicated for periprosthetic femoral fractures type B2. No better results were found with the use of an additional strut allograft.

248 The Risk of Infection after Damage Orthopaedic Control

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Objectives: The aim of this study was to evaluate complication rates of infection after damage control orthopaedics in multiply injured patients.
Materials–methods: Retrospective review of multiple injured patients admitted to our Level 1 Trauma Center from 2002 to 2007. Inclusion criteria were: patients with ISS > 40, or polytrauma with pelvic

fracture or abdominal injury in the presence of hemodynamic instability, or an AIS score of 2 for the torax, in whom a damage control procedure was the treatment for stabilization of long bone fractures. Thirty-one multiple injured patients with a total of thirty-eight long bones fractures met the criteria. Three patients died when they were in intensive care unit. The age of patients averaged 36 years. Twenty-one were male and six were female. All the fractures had been caused by a high-energy trauma. Injury Severity Score averaged 37,07. Thirty-eight fractures were analyzed. Sixteen fractures were open. 58% of the fractures were secondary to a motor-vehicle accident and 20% to a fall. Conversion of the initial external fixation to internal fixation averaged 16.7 days. Rates of deep infection and fracture healing were the main outcome measurements.
Results: All the fractures healed. Rate of deep infection was 2.7%.
Conclusion: Damage control orthopedics in unstable multiple injured patients is a safe and effective method of treatment of the fractures of long bones. This approach reduces the systemic impact of surgery providing low infection rates.

249 Plastic Repair of Limb Soft Tissue Defects of Missile Wounds Caused by Aviation Bomb Splinters

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Introduction: Missile wounds induced by aviation bomb splinters pertain to grave injuries, due to large wound area and high risk of complications.
Material–methods: 11 patients with large defects, in 7 of cases – combined with long bone fractures caused by missile injuries were treated by us in the period of August–November in 2008. Every cases were subjected to radical primary debridement with complete drainage. After relevant preparation for soft tissue plastic repair (involving primary radical debridement, primary external fixation, complex drug therapy and repetitive regular debridement) the following repair procedures were undertaken: In four cases, soft tissue defects were covered via rotation of local flaps. In three cases, defects were covered through transplantation of free skin grafts. In four cases, large soft tissue defects were overlayed by vascularized thoraco-dorsal (LD flap). In two of these, bone defect repair was simultaneously performed applying avascular graft taken from hip bone crista.
Results: In seven cases, transplanted flaps adhered perfectly, without trophic or infective complications. In one case, rotated local flap necrotized due to interrupted perfusion, which was subsequently replaced by free skin transplant. In five cases, fracture consolidation was completed in 4–5 months. In remaining two cases (after bone defect repair), consolidation process still proceeds with satisfying rate.
Conclusion: Transplantation of vascularized thoraco-dorsal flap is especially effective for covering large soft tissular defects. Soft tissular plastic repair has the double advantage of defect reconstructive ability and prevention from secondary infections, with additional stimulation of bone tissue regeneration.

250 Volar Fixed-angle Plating of Extra-articular Distal Radius Fractures – a Biomechanical Analysis Comparing Threaded Screws and Smooth Pegs

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Introduction: Volar fixed-angle plating has become a popular modality for treating unstable distal radius fractures. Most of the plates allow insertion of either threaded locking screws or smooth locking pegs. No biomechanical studies are available comparing locking screws and pegs under axial and torsional loading.
Materials and methods: Sawbones radii were used to simulate an AO/OTA A3 fracture. Volar fixed-angle plates (Aptus Radius 2.5, Medartis, Switzerland) with threaded locking screws ($n = 5$) or smooth locking pegs ($n = 5$) were used to fix the distal metaphyseal fragment. Each specimen was tested under axial compression and under torsional load. Qualitative parameters were recorded as well as axial and torsional stiffness, torsion strength, energy absorbed during monotonic loading, and energy absorbed in one cycle.
Results: Axial stiffness was comparable ($p = 0.818$). If smooth pegs were used, a 17% reduction of torsional stiffness ($p = 0.017$) and a 12% reduction of minimum torque ($p = 0.012$) were recorded. A 12% reduction of energy absorbed ($p = 0.013$) during monotonic loading was recorded if smooth pegs were used. A 34% reduction of energy absorbed in one cycle ($p < 0.007$) was recorded if threaded screws were used. Sliding of the pegs was recorded at a mean torque of 3.80 ± 0.19 Nm. No sliding was recorded if threaded screws were used.
Discussion: According to the results of the present study using Sawbones, volar fixed-angle plates with threaded locking screws are mechanically superior to volar fixed-angle plates with smooth locking pegs. The theoretical rationale of using smooth locking pegs for volar fixed-angle plating is questionable and should be reconsidered.

251 Lean Thinking-A Value Stream Pathway for Care of Hip Fractures

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Introduction: LEAN principles, derived mostly from the Toyota production system is now an emerging concept adopted by the National Health Service, in an attempt to optimize care with the use of available resources. This study aims to evaluate the impact of LEAN thinking application on the care of hip fracture patients.
Materials and methods: Study included hip fracture patients admitted prior to application of LEAN from September 2005 to August 2006,

who were compared with those admitted post LEAN from September 2006 to August 2007. Data collected included age, sex, type of fracture, and operation, door to theatre time (DT), length of hospital stay and mortality.
Results: A retrospective study of 518 hip fracture patients over a 2 year period. Post-LEAN strategy application, the results in terms of the mortality rate and DT time were quiet impressive. Patients' 30 days mortality was reduced by 42.58 and 80.94% of patients went to theatres within 48 h.
Discussion: LEAN thinking for the hip fracture patients focuses on improving the smoothness of the patients' flow from the time of their admission until they are discharged. Mapping the stream of patients allows identification of different problems in the pathway, cutting down on the steps which are identified as waste, thus improving the quality of care. Following the National Hip Fracture database guidelines, the stream is monitored by looking into door-to-theatre (DT) time, admission into trauma beds, pre and post operative medical assessment by the orthogeriatricians.

252 Statistical-descriptive Analysis of Locomotive Disorders in Traumathology and Orthopedics Unit at Benigno SáNchez Hospital. January 2006–October 2007 in the Municipality of Quillacollo, Cochabamba, Bolivia

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The motives of consultation in the population in general, have direct relation with external factors as the agents that may cause wound. The study presented a 99.44% of assistance to consultation from part of the patient; 81.17% they presented pathology, being 65% of traumatologycal type, and inside these 48.89% they were of bone characteristics; the age of greater pathological incident was found among 15–59 years old with 48.2%. The percentages analyzed correspond mostly to wounds that have a high incident in the male sex 51.2%. The following work analyzes in a statistical form – descriptive form the inconveniences of the patients locomotive apparatus that respond to external consultation of the service of orthopedics of the Municipality of Quillacollo.

253 Reversed Fracture Prosthesis: first Results of a Newly Designed Shoulder Prosthesis

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Introduction: Shoulder arthroplasty remains a valuable treatment for complex fractures of the proximal humerus. However the success of anatomical arthroplasty is mainly dependent of anatomical healing of the tuberosities. Even with specific prostheses and fixation techniques in 25–40% of cases anatomical healing is not achieved. Using a nonfracture specific trauma prosthesis we achieved better elevation and abduction; however endorotation, exorotation, subjective shoulder rating and complication rate did score poorer than in anatomical arthroplasty. We assumed that the impossibility to refixate the lesser and greater tuberosity fragment, and subsequently the subscapularis and infraspinatus-teres minor tendons, are the main cause for this observation
Material–methods: We developed a fracture specific reversed shoulder prosthesis allowing for anatomical refixation of the tuberosities. We included 20 patients in the reversed fracture arthroplasty group. Function is scored using the constant Murley-score. Radiographically we evaluate for evidence of scapular notching. Complications are recorded. We compare our results to an historical series of Delta III prostheses.
Results: At 6 months the mean Constant score is 51.5 points. There was no case of notching. There was one complication, an early infect. The mean Constant score in the Delta group was 42 points. There was notching present in 55% of cases. In the Delta group there were five reoperations in three patients because of dislocation.
Conclusion: There is a strong trend to better functional outcome using the fracture specific design. There are less complications and less notching. The possibility to refixate the tuberosities leads to better results.

254 Initially Undetected Injuries to the Knee Accompanying a Presumed Isolated Femoral Shaft Fracture

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Introduction: As fractures of the femur are severe injuries and patients mostly suffer from extensive pain they quickly attract the physician's attention in the emergency room. The literature has shown that injuries to the ipsilateral knee can occur accompanying such injuries. In most cases, these injuries though were diagnosed on delay. Excluding cases in which a knee injury was apparent already on admission, we sought to investigate the number and severity of initially undetected lesions to the knee accompanying a femoral shaft fracture and give an overview of the literature.
Methods: Charts and X-rays of patients treated for a femoral shaft fracture from January 2000 until December 2007 were reviewed. Patients, in whom any other injury of the affected limb apart from a midshaft femoral fracture was initially diagnosed, were excluded. Also patients, in whom an injury to the knee had been diagnosed on admission, were excluded.
Results: Fifty-three patients with midshaft femoral fractures were available for analysis. An injury to the knee was diagnosed in 3 cases (5%). There was one partial tear of the posterior cruciate ligament and two grade 2 lesions of the medial meniscus. All lesions were conservatively treated.
Conclusion: Physical examinations under anaesthesia, arthroscopy and MRI have shown lesser correlation amongst each other than one would expect. Severe injuries to the knee with femoral shaft fractures are likely to be detected earlier, than minor ones. Pain about the knee communicated by the awake patient is the indication for further apparative examination.

255 Assessment and Comparison of Shoulder Movements Using the Fastrak® and Vicon® Systems

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Introduction: The shoulder is the most mobile joint of the human body. It has a great range of movement that takes place in all three Cartesian planes. This is a complex phenomenon. There is considerable controversy over an ideal method for the functional assessment of shoulder joint complex. Various methods have been used but they are often inaccurate and unreliable. Thus, a better technique, that is reliable as well as repeatable, is required to measure the movements. The aim of this study is to assess the shoulder movement by Fastrak® *and Vicon® systems and to compare their repeatability.*
Methods–materials: The functional movement of the shoulder joint was assessed by Fastrak® and Vicon® systems. A difference between the two systems was determined and a comparison of repeatability was carried out. A population of healthy male volunteers were asked to perform six different tasks that covered all the movements occurring at the shoulder. These tasks were repeated twice on each side on two different days. The measurements were recorded and a custom-made programme, prepared for each system separately, calculated the angles.
Results: The recorded data was analysed using Repeated Measure Analysis of Variance. It was found that the coefficient of repeatability of Fastrak® was better than the Vicon® system for each task and there was no significant difference ($p < 0.05$) between the two sides.
Conclusion: The Fastrak® system is better than the Vicon® system for assessing shoulder movements. It can be used in clinical practice.

256 Surgical Treatment of Clavicle Fractures: a Comparative Sudy of Intramedullary Nailing and Plate Fixation

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Introduction and objectives: Treatment of clavicle fractures is still controversial and no treamtent-consensus exists for the complete range of lesions. Different treatment options have been advocated with varying results. More recent studies have shown a high complication rate after nonoperative treatment of clavicle fractures. This study was done to evaluate indications, technical pitfalls and functional outcome of two surgical treatment options: elastic stable intramedullary nailing with titanium nails was compared with plate fixation.
Methods: We report the results of a group of patients with clavicle fractures who underwent intramedullary nailing or plate fixation for stabilisation of their displaced midshaft and lateral clavicle fracture between 1998 and 2008. Both groups were compared. Outcome analysis included clinical follow-up, patient-oriented outcome and complication rates.
Results: A total of 102 patients were included: 82 men (80.3%) and 20 women (19.6%). Only one patient had a medial clavicle fracture (0.9%), most had a midshaft fracture (60.8 vs. 38.3% lateral fractures). The mean age was 40.2 years old. Of all patients 45.0% was treated with intramedullary nailing, the other 55.0% with plate fixation. The rate of complications was higher in the intramedullary nailing group. Intramedullary nailing led to 39.1% complications (15% penmigration and 11% perforation of the skin) versus 14.2% in plate fixation (5.3% pseudarthrosis and 3.8% hardware failure). The functional outcome was good in almost all cases.
Conclusions: More complications were found in the intramedullary nailing group. However, in both groups, the overall long-term follow up was good.

257 The Results of the Humeral Fractures Treated by Immediate Sarmiento Cast

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The humerus middle and distal thirds shaft fractures are commonly seen as fractures on the upper extremity. These fractures can be treated by mostly nonsurgical way. The aim of this study to evaluate the results of humeral shaft fractures were treated by Sarmiento cast The study includes 17 patients (4 mid and 13 distal thirds of the shaft) were treated by Sarmiento cast between 2003 and 2008. The average age of the patients was 22 years (19–25). We applied Sarmiento cast without any padding or little padding immediately. We encouraged the patients moving their arms. The treatment ends upon the presence of a bone callus and absence of pain at the fracture site. During the whole therapy the skin condition is monitored and emphasis is put on the prevention of reflex sympathetic dystrophy. We evaluate the result of the treatment with a focus on the any restriction of the range of motion of joints and the presenting any angulation of the humeral shaft.
Average follow up time was 6 months (4–48). All fractures were healed without any major problem and we did not face any nonunion and no major angulations axis of the humerus. Average union time was 3 months (2–4). The results of nonsurgical treatment of the humerus mid and distal thirds shaft fractures are reported as a less complicated way and have a higher rate of union. This method is practical, efficient, cheap, and safe, if a good cooperation with patients is established and close observation is done.

258 Surgical Management of Intra-articular Calcaneal Fractures

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Introduction and objectives: The fractures of the calcaneus account for about 1% of all fractures of the human skeleton. Surgical intervention is an accepted way of treatment of these fractures. The aim of this study is to evaluate the results of open reduction and internal fixation of closed displaced intra-articular calcaneal fractures.
Methods: In a period between 1995 and 2008, 33 patients (6 patients with bilateral fractures), 19–69 years old were treated surgically using the lateral extensile approach. Follow-up ranged from 1 to 10 years. The patients were evaluated radiographically by the X-ray appearance of Bohler's angle and calcaneal morphology. The evaluation was based also on the active range of motion, footwear problems and time off work. The short form 36 (SF-36) health status survey was used for outcomes assessment.

Results: All fractures have been healed in an average time of 15 weeks. The outcome was excellent for 19 cases, good for 12 cases and poor for 8 cases.
Conclusions: Open reduction and internal fixation is an effective method of treatment for displaced calcaneal fractures provided that the restoration of calcaneal height and talocalcaneal relationship is achieved.

259 Minimally Invasive Anterolateral Hip Approach an Anatomical Point of View

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Introduction: Post-operative complications after total hip surgery and hip hemiarthroplasty can be reduced by the so called minimally invasive surgery (MIS) according to Bertin and Röttinger (2004). The aim of this study is to evaluate the surgical anatomical aspects of the minimally invasive hip surgery procedure in cadavers.
Methods: The MIS approach was performed on four specially embalmed cadavers. All cadavers had a normal 'Range Of Motion' of the hip joint. The difference in muscle length and work space were measured in all leg positions. Additionally the difference in muscle tension in anterior and posterior luxation was compared with regard to the accessibility of the femoral shaft.
Results: The length of the medial- and minimal gluteal muscles is reduced in abduction. A difference of more than 1 cm was found between 20° to 30° abduction and full abduction. The working space (6.3 × 5 cm), is limited in the maximum (50°) abduction position. Posterior luxation gives a better femoral shaft approach and less/none muscle tension/damage compared to anterior luxation.
Conclusion: The optimal approach to the femoral neck during MIS of the hip is achieved during 20°–30° abduction of the ipsilateral leg combined with 10° retroflexion. The best femoral shaft approach for prosthesis insertion is the posterior luxation. No additional damage, excluding the skin and fascia incision, was seen during posterior luxation. Posterior luxation and exorotation of the leg enables straight and direct access to the femoral shaft compared to the access obtained during anterior leg luxation.

260 Exchange Reversed Arthroplasty for Failed Fracture Prosthesis: first Results

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Introduction: Shoulder arthroplasty remains a valuable treatment for complex fractures of the proximal humerus. However the success of anatomical arthroplasty is mainly dependent of anatomical healing of the tuberosities. Even with specific prostheses and fixation techniques in 25–40% of cases anatomical healing is not achieved. In those patients suffering from pain, antero-superior instability and/or poor function reversed arthroplasty is proposed as solution. However in the friable patient revision arthoplasty with stem removal is a complex procedure complicated by iatrogenic fractures, delayed healing of the removal window and infection.
Material–methods: We developed a specific reversed shoulder prosthesis allowing for revision arthroplasty without the need for stem removal. We included six patients in the revion reversed fracture arthroplasty group. Function is scored using the Constant Murley-score. Radiographically we evaluate for evidence of scapular notching and iatrogenic fractures Complications are recorded.
Results: At 6 months the mean Constant score is 42.5 points. There was no case of notching. There were no complications. In all patients pain scored better after revision. Function ameliorated significant in all patients.
Conclusion: This relatively simple procedure results in less pain and an ameliorated functional status in all patients. However function does not recuperate on average to the same level as for rotator cuff arthroplatsty or primary reversed fracture arthroplasty.

261 Rotator Cuff Disease and Acromial Morphology

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Background: It has been stated that acromial morphology plays an important role in the etiology of rotator cuff pathology. The system most widely used to describe the morphology is the Bigliani classification. Recently Nyfeller introduced the acromial index. We wanted to examine whether there is a correlation between these two parameters and the presence of a rotator cuff tear or an impingement syndrome.
Methods: We assessed both parameters in four groups of 100 patients each. The first group consisted of patients with operatively treated rotator cuff tears (average age 62.29 years) and the second group of patients known with impingement syndrome but documented intact rotator cuff (average age 52.37). For both groups, an age and gender matched control group was constructed.
Results: Type three acromions were significantly more prevalent in the rotator cuff tear group than in the control group ($p < 0.05$). The average acromial index was 0.698 + 0.0766 in the rotator cuff tear group and 0.683 + 0.0733 in the rotator cuff control group, which is not statistically significant ($p = 0.16$). In the impingement group, the acromial index was 0.647 + 0.0784 and 0.680 + 0.0744 in the impingement control group. This difference was found to be statistically significant ($p < 0.005$).
Conclusions: Patients with a rotator cuff tear appear to have more frequently Bigliani type three acromion than age and gender matched, asymptomatic patients. There is no correlation between acromial index and acromial type or age.

262 Reamed Irrigator Aspirator Grafts in Bone Defects

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Introduction: The treatment of bone defects after open fractures and/or infection remains a challenge to the trauma surgeon. Different treatment modalities can be used: shortening, segment transport, distraction ossteogenesis and the use of cancellous or structural auto- and allografts. More recently the RIA system has been promoted to harvest bone grafts out of the femoral diaphyseal canal. We evaluate its use in the treatment of defect fractures.
Material–methods: We treated eight patients with severe bone loss with bone grafts harvested from he femoral canal. There were three ulnar, three tibial, one radial and one humeral defects. The defect sizes did vary between 4 and 7 cm.

Results: All but one fractures united within 4 months after graft application. No implant failure occured. In the patient with the radial defect there was an almost complete resorption of the graft. A second application of Ria graft after preparation of the acceptor site using the Masquelet technique, results in better healing. In one patient overreaming did cause a fissure in the femur. No additional treatment apart from partial weight bearing was necessary. In all other patients donor site pain subsided completely within 4 weeks of harvesting.
Conclusion: RIA femoral graft harvesting is a promising new treatment for bone loss after open fracture, resulting in high healing rates and low donor site morbidity.

263 Supra- and Intraarticular Fractures of the Distal Humerus Treated by an Anatomically Pre-shaped Locking Compression Plate, a Two Year Follow-up

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Introduction: Distal fractures of the humerus are very demanding injuries and stable implant fixation is often a challenge. The new distal humerus system (Synthes®) *is designed to provide better stability in osteoporotic bone and complex fractures by using locking head screws.*
Methods: Between 6/04 and 12/08, 34 patients were treated with the DHP-System. 22 patients (8 A-, 1 B- and 13 C-fractures; Ø 69.7 years) with a minimum follow-up of 22 months were included. Follow-up at 6, 12 and 52 weeks postoperatively. In addition, a free research follow-up visit under an approved protocol containing the Mayo Elbow Performance Index (MEPI), HSS-Score, DASH questionnaire, X-ray (ap/lat.), ROM, and the Broberg and Morrey Index (BMI) was performed.
Results: 16 of 22 Patients with a mean follow-up of 29 months were able to participate the late examination. We found one asymptomatic nonunion, one preoperative and three postoperative sensory ulnar nerve damages which recovered incompletely in two patients. One CRPS two Implants were applied too distal, causing a painful impingement. Ø ROM was F/E 129°/16°/0°. According to BMI, HSS-Score and MEPI the outcome was good (Ø 83; 86; 84 pts.). The DASH Score averaged at 24 pts. The mean flexion force of the injured elbow in percentage of the uninjured joint was 71%. No implant failure or loss of reduction.
Conclusion: Supra- and intraarticular fractures of the distal humerus remain a surgical challenge. The anatomically pre-shaped plates and multiple locking screws simplify intraoperative handling and improve stable fracture fixation, especially in osteoporotic bone.

THORACIC TRAUMA

264 Is Cardiac Trauma after all These Years Still the Same Approach for Diagnosis and Management?

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Introduction: For the past 14 years our policy for diagnosing and treating cardiac trauma has not changed but the survival rate in our institute has markedly improved. Even though penetrating cardiac trauma has a better chance for survival in our series all four patients with blunt cardiac trauma survived.
Methods: Patients presenting with suspected cardiac trauma will be managed initially according to the advanced trauma life support followed by focused assessment with sonography for trauma (FAST). Patients presenting in extremis with suspected cardiac trauma will receive emergency room thoracotomy in questionable FAST we will obtain formal transthoracic echocardiography. If still in doubt our policy will proceed with intra operative subxyphoid window and a set up for median sternotomy. Data was collected from retrospective chart review during September 1994 to September 2008.
Results: Throughout the study period 42 patients had cardiac traumas the over all mortality rate was 14.2%. Four patients had blunt injury resulting in one ventricular septal defect and three ruptured right atrium. Right ventricle was injured the most 44%, right atrium 23%, left ventricle 20%, left atrium 2%, one patient had superior venacava injury and another patient had inferior venacava injury. Four patients had pericardial violation but no cardiac chamber injury. In this cohort 38% underwent emergency room thoracotomy. Associated injuries were presented ranging from craniotomy to intra abdominal injuries in 38% of cases.
Conclusion: High index of suspicion and prompt management for cardiac trauma should be considered in patients presenting with injuries to the chest.

265 Endovascular Treatment of Acute Traumatic Thoracic Aorta Lesions

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Introduction: Technological developments have influenced the diagnostic and therapeutic strategies in case of traumatic thoracic aorta lesions. Within the last decade multi-slice CT and endovascular stenting have emerged to be less invasive and safe tools in case of this life-threatening injury.
Methods: Retrospective analysis of all patients with traumatic thoracic aorta lesions from June 1993 to March 2008. All of the 24 patients sustained blunt deceleration trauma. Patients with active intrathoracal hemorrhage underwent immediate thoracotomy. In hemodynamically stable patients initial evaluation was performed by multi-slice CT-scan. In case of positive findings, a specialized team consisting of a cardiac surgeon and an interventional radiologist were called. The further treatment strategy was determined interdisciplinary according to the injury pattern.
Results: Emergency thoracotomy was performed in seven patients prior to further diagnosis. Mortality in this group was 100%. In the remaining group of 17 patients with stable hemodynamic condition in-hospital mortality was zero. Conservative treatment was performed in three patients, conventional surgery was performed in five patients. Since 1998 endovascular stent-graft placement developed to be the predominant treatment method. It was performed successfully

in nine patients. There were no method-related complications. No patient died during follow-up. At latest follow-up no signs of endoleaks were detected.
Conclusion: Hemodynamic stability and an individual treatment strategy are prerequisites for survival of acute traumatic thoracic aorta lesions. Due to the minor complication rate endovascular stent-graft placement has emerged as the primary therapeutic option. However, its use is still restricted to only a few highly specialized centers.
Editor to self: Seçilmiş bildiri

266 Extracorporeal Membrane Oxygenation Us for Transfusion Related Acute Lung Injury in Trauma

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Objective: Extracorporeal membrane oxygenation (ECMO) is rarely used successfully in trauma. Transfusion related acute lung injury (TRALI) is also rare in plasma containing blood product transfusion.
Methods: This is a case report of a trauma patient with life-threatening TRALI following trauma that was rescued successfully using ECMO.
Results: A 24 year old patient was struck by an automobile and suffered a grade II splenic injury, grade IV–V right renal injury as well as multiple orthopedic injuries. An attempt at angiographic embolization failed as the patient required multiple transfusions and became progressively hypotensive. The patient underwent emergent nephrectomy but rapidly became hypoxic with the PaO_2 becoming less than 20 mmHg for over an hour. Despite aggressive attempts at ventilation and oxygenation, the endotracheal tube was filled with fluid and hypoxia pursued despite low right heart filling volumes. Rescue ECMO was instituted with successful oxygenation. After 48 h the patient recovered from TRALI and was able to have ECMO discontinued. The patient was weaned off the ventilator within 12 days and the patient had full recovery. The patient did not suffer any hypoxic brain insult.
Conclusions: Although it is often thought that ECMO is unsuccessful in trauma patients, this case demonstrates its potential use in trauma patients.
Author to editor: Will also present as poster

267 Epidemiology of Hemothorax in a Level I Trauma Center: a Case for Early VATS

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Objective: Hemothorax is a common sequela of chest trauma. Retained hemothorax following chest tube thoracostomy(CT) can result in complications and often requires further intervention. Our study examines the epidemiology of hemothorax at a busy Level I Trauma Center to assess the potential utility of early (day of admission) video assisted thoracoscopic evacuation.
Methods: A retrospective review was performed from 1995 to 2005. All adult patients admitted with a diagnosis of hemothorax and an AIS-chest score > 3 were entered in the study. Patient demographics, details of the injury event, treatments, hospital length of stay(LOS), complication rate and outcome were analyzed.
Results: 750 patients were admitted with a diagnosis of hemothorax. Of these, 56 required an immediate thoracotomy. Of the remaining 694 patients, 970 thoracostomy tubes were placed during their hospitalization. The study cohort had a median ISS of 18 and 61% were penetrating injuries. The overall median LOS was 8 days. 109 patients required placement of > 2 CTs and had a median LOS of 15 days longer than patients only receiving one CT(median LOS 23 vs. 8 days, $p < 0.001$). There were 20 cases of empyema, 8 decortications and 4 cases that received streptokinase treatment in 29 of the 522 patients.
Conclusions: Hemothorax treated with CT alone is associated with a long LOS and 21% of the patients developed retained hemothoraces, needing a second CT. Retained hemothoraces was associated with major complications (27%). These results support the need for a randomized control trial of early-first-day Video Assisted Thoracoscopic Surgery (VATS) to potentially reduce LOS, CT placements and complications.
Author to editor: I would prefer to present this abstract orally but if not chosen then I would be willing to present it as a poster.

268 Cardiac Penetrating Injuries: single Instution Experience

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Objective: Cardiac penetrating injuries are rare cases requiring immediate resuscitation and prompt surgical intervention with high mortality risks. Thus, patients with penetrating injuries suspected for cardiac injury are necessitated to be investigated meticulously and precisely.
Method: The demographic characteristics, injury types, wound sites, accompanying internal injuries, diagnostic methods, mortality and morbidities of patients treated for penetrating cardiac injuries at our department between 2003 and 2009 have been investigated.
Findings: A total number of 14 patients (all male; 22.9 ± 8.7) were found. Injuries were resulting from gun shot fires (n = 5; 35.7%) or stab wounds (n = 9; 64.2%). Injury sites within the heart were the right atrium (n = 2; 14.3%), the right ventricle (n = 4; 28.6%), the left atrium (n = 3; 21.4%), and the left ventricle (n = 7; 50.0%) (More than one site was observed in 2 patients). The accompanying injuries were observed in the spleen (n = 3; 21.4%), the lung (n = 2; 14.3%), the liver (n = 1; 7.1%), and the stomach (n = 1; 7.1%). In 10 (71.5%) patients emergent thoracotomy was clinically decided with suspicious findings of hypovolemic shock or cardiac injury including low blood pressure, jugular fullness, deeply heard heart sounds, filiform pulse, narrowing of pulse pressure. The rest patients (n = 4; 28.5%) were operated after major blood drainage from tube thoracostomy. All the injuries were repaired with sutures, and pericardial fenestration was done in all. Mortality was observed in two cases (14.3%).
Conclusion: Patients with penetrating regional wounds should be suspected for penetrating cardiac injuries, since immediate surgical intervention may decrease the risk of mortality.

269 A Highly Fatal Intraoperative Urgency: aortic Dissection Complicationg Heart Surgery

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[2]Military Hospital, Elazig, Turkey

Objectives: We have retrospectively analyzed acute aortic dissections occurring intraoperatively (IAAD).
Patients and methods: Patients' characteristics, preoperative risk factors, operative and postoperative courses were analyzed from the hospital records retrospectively.
Results: From 1985 to 2009, we performed 29,683 open heart operations. Ten patients (0.0034%) were diagnosed as acute type A aortic dissection intraoperatively. Dissection was limited to the ascending aorta in nine cases and was extending beyond the arcus in one patient. Four patients were operated for coronary artery disease, one for mitral valve and two for aortic valve diseases. One patient had paravalvular leakage and was operated for redo MVR. One patient had aortic valvular and coronary artery disease. IAAD was identified after decannulation in five (50%), after creating the holes for proximal anastomoses in three (30%) and after declamping the aorta in two (20%) patients. Patients' ages were 66.5 ± 7.2 years in average (ranged 52–76). Male/female ratio was 5/5. Preoperatively, six (60%) had hypertension and four had hypercholesterolemia (40%). No other significant risk factor could be identified. Hypothermic circulatory arrest was used in six operations. Separated graft interposition to the ascending aorta was done in nine patients whereas one of them had concomitant arcus aorta replacement and elephant trunk procedure. Aortoplasty with dacron patch was used in one patient. Postoperatively six patients (60%) required inotropic support and three of them died (30%).
Conclusions: It is much better to prevent a dissection of the ascending aorta. If recognized, abrupt change of the operation planning and reparative measures for the dissection should be undertaken.

270 Clinical Signs have Higher Correlation than Plain Films with Thoracic CT-based Injury Severity Assessment

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Introduction: The use of ''pan-CT'' is discouraged in settings of high imaging demand. This study compared clinical and plain chest film findings to determine need for, and results of, chest CT.
Methods: During recent 9 month period, 400 patients sustained blunt chest injury either isolated or in setting of multisystem trauma. Data was tabulated by a combination of prospective and retrospective analysis. Initial injury assessment followed ATLS protocol. Supine chest film, followed by chest CT, were performed in all patients and compared with clinical findings.
Results: Significant clinical findings were defined as tachypnea, decreased air entry, chest wall tenderness and initial oxygen saturation less than 95%. The presence of two or more of these clinical findings occurred in 138 patients (34%). CT findings in this group included multiple rib fractures ± flail chest, sternal fractures, pneumothoraces, hemthoraces, and pulmonary contusions. Higher AIS and need for interventions occurred in this group. The co-existence of tachypnea and desaturation correlated with the need for tube thoracostomy in 91/138 patients(65%) – 15 pre-CT, 76 post CT.
Conclusions: In patients with blunt chest injury, the presence of two or more of the clinical signs – tachypnea, decreased air entry, chest wall tenderness, oxygen saturation < 95% – is associated with: (1) significant chest injury demonstrated on chest CT; (2) higher correlation with CT findings than plain films alone; and (3) need for intervention by tube thoracostomy in 65% of patients in this study.

271 Successfull Use of ExtraCorporeal Membrane Oxygenation (ECMO) as "last Resort" in a Case of Blunt Chest Trauma

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Introduction and objectives: Thoracic injuries are significant causes of morbidity and mortality in trauma patients, second only to head injuries for trauma-related deaths. ECMO is a supportive care intervention to realize artificial oxygenation of blood coupled with a blood pump to support cardiac output. We evaluated the utility of ECMO in a case of blunt chest trauma.
Methods: A 17th old year's boy arrived to our emergency department following a motor vehicle collision. On admission the patient was tachypnoic with major cough. A chest X-ray film showed a right pulmonary contusion. The abdominal FAST and pelvic X-ray were normal. Moreover he presented left limbs and facial multiple fractures. Definitive airway was placed and blood drained from the tracheal tube. A CT scan showed bilateral extensive pulmonary contusion, laceration and pneumothorax with no active bleeding source. Despite aggressive conventional ventilatory and circulatory support, ARDS and right ventricle failure rapidly progressed. We instituted ECMO: it lasted 7 days, veno-arterial (VA)-ECMO for 2 days and veno-venous (VV)-ECMO for others 5.
Results: During the time of ECMO support, a tracheostomy was performed; the patient developed renal failure and infection of the open femur fracture, both successfully treated. Overall ICU length of stay was 35 days. Orthopedic left arm and leg fractures stabilization was performed. He spontaneously breathed after 28 days and then transferred to orthopedic rehabilitation centre.
Conclusion: Morbidity and mortality of blunt chest trauma can be reduced by applying ECMO, a complex, risky and expensive support, but life-saving.

272 Randomized Clinical Trial Comparing Sternotomy Versus Pericardial Drainage alone for the Management of the Stable Haemopericardium After Penetrating Trauma

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Introduction and objectives: A group of patients with penetrating chest injuries will present haemodynamically stable, with blood in the pericardial sac diagnosed on ultrasound. The conventional management of what is termed; the ''stable haemopericardium'' has been a median sternotomy. In our experience in Cape Town, when a sternotomy is performed, any cardiac injury if present has already sealed or there is no cardiac injury. Our hypothesis is that these patients can be safely managed with a subxiphoid window (SXW) and simple drainage of the pericardial sac if there is no active bleeding.
Methods: A prospective, randomized study conducted from October 2001 till February 2009. In the absence of bleeding at subxiphoid window, patients were randomized to sternotomy or drainage of the pericardial sac. The primary outcome measure was survival to discharge.
Results: One-hundred and fifty-two haemodynamically stable patients underwent a SXW. Active bleeding was encountered in five of these patients requiring a sternotomy and all had full-thickness cardiac injuries. There were 36 patients with a negative SXW. The remaining 111 patients with a positive SXW were randomized to sternotomy (55) and drainage alone (56 patients). In the sternotomy group 26 (47%) patients had no or superficial cardiac injuries and the injury had sealed in the remainder. There was one death. In the drainage only group there were no deaths and all patient were discharged home well.
Conclusions: Stable haemopericardiums should be managed with a SXW. If there is no active bleeding then simple drainage is all that is required.
Editor to self: Seçilmiş bildiri olmalı

273 Outcome of Minor Blunt Thoracic Trauma

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Introduction and objectives: Although several reports have been published reviewing delayed presentation or missed diagnosis of injuries associated with blunt thoracic trauma, delayed pneumothorax, delayed hemothorax and pain management have been rarely evaluated in literature.
Methods: Data were reviewed from the trauma registry of a teaching hospital in a urban area, referral center for severely traumatized patients. Patients with blunt chest trauma, including soft tissue trauma and bony thorax injuries, were included. The aim of this study is to evaluate the efficacy of the management of minor thoracic trauma in outpatients. Associated injuries, performance status and co-morbidities were criteria for inhospital treatment. FANS or codeine-paracetamol association were prescribed for pain management.
Results: During 1 year 987 patients were evaluated, 888 outpatients; 46.7% of patients were older than 50 year old. The most frequent injury mechanisms ware fall in 48.9% and motor vehicle collisions in 28% of patients. 798 were thoracic contusions, single rib fracture was detected in 45 patients (5.2%), 2 ribs fracture in 9 patients (1%) and more than 2 ribs fracture in 27 patients (3%). In nine patients minor sternal fractures were detected and treated as outpatients; in all these patients myocardial enzymes curve and echocardiography were performed. Major complications were not detected in follow-up of outpatients. 124 patients (13.9%) returned to E.D. for pain management.
Conclusions: A complete diagnostic procedure in necessary for a safe outpatients treatment, even if more than two ribs fracture was detected. Pain management in critical, especially in older patients.

274 Endoscopic Rhoracic Sympathectomy For Posttraumatic Complex Regional Pain Syndrome

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Introduction: Complex Regional Pain Syndrome (CRPS) sustained after trauma has a great negative impact on rehabilitation and activities of daily living. Treatment is most often unrewarding.
Aim: To analyze prospectively the efficacy of endoscopic thoracic sympathectomy (ETS) in reducing pain and disability associated with CRPS.
Patient and methods: Over a 5-year period, 15 patients (7 females and 8 males; mean age 48.9 ± 2.2) with posttraumatic CRPS underwent unilateral ETS. The median duration of CRPS symptoms before ETS was 4.1 months (range: 1.2–194). The sympathetic chain was resected from the second to fifth rib. Mean postoperative follow-up was 18.7 ± 3.4 months (range: 1–40.9). Pain was assessed, at rest (passive) and during movement (active), using a visual analogue scale (VAS) from 0 to 10.
Results: One patient (6.7%) had a hydrothorax and three patients (20%) complained about contralateral compensatory hyperhydrosis. At 1 month (n = 12), 2 months (n = 8), 6 months (n = 11) and 1 year (n = 10) after ETS, there was a significant decrease in passive and active VAS ($P < 0.05$). Ten out of 14 patients (71,4%) needed less analgesics after surgery, and seven (50%) did not need analgesics at all. The mean sleep duration improved significant from 2.7 ± 1.6 h preoperatively to 6.0 ± 1.1 h postoperatively ($p < 0.05$). Overall, patient satisfaction was 85% (11 out of 13 patients).
Conclusion: ETS is efficient for decreasing pain and improving quality of life, and therefore should be considered in the treatment of CRPS.
Author to editor: Complex Regional Pain Syndrome (also known as Sudeck or Reflex Sympathetic Dystrophy) is a complex disease that trauma surgeons frequently encounter in the post-traumatic period. Endoscopic thoracic sympathectomy is not well known among trauma surgeon, although it is an good option in relieving the pain and improving the quality of life.

275 Selective Echoguided Aspiration of Traumatic Pneumothorax

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Background: Small traumatic pneumothorax (PTX) is not an indication for drainage except in case of mechanical ventilation. Standard

monitoring is accomplished with chest X-ray (CXR), but ultrasound (US) is nowadays established as more sensitive than CXR in detection of PTX.
Patients and methods: From October 2005, thoracic views for detection of PTX are systematically included in the EFAST protocol during primary survey for every trauma patients (pts) admitted to our Level I Trauma Center. Among hospitalized pts, a selective US-guided aspiration for small PTX was applied in three pts (two with a slow reabsorption time, one in a pt requiring hyperbaric oxygen therapy for a soft tissue infection of the leg). In supine position, delimitation of the area of anterior PTX was done with a linear probe, searching for lung points in adjacent intercostal spaces. Under local anesthesia, a 8 Fr catheter was inserted in the PTX and aspiration monitored in real time by US, until restoration of sliding lung. The day after, after confirmation of normal gliding lung, two pts were discharged and one deemed suitable for hyperbaric oxygen therapy.
Discussion: Small traumatic PTX is generally monitored without treatment. In some pts, drainage is however required, but the procedure is blind if performed on the basis of CXR findings. US allows to precisely define the site and the limits of PTX, insert a small catheter in the right area, monitoring reexpansion of the lung and complete aspiration of PTX and shortening recovery.

276 Thorax Injury Leads to Systemic Activation of the Immune System: an Important Risk Factor for Inflammatory Complications

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Introduction: Severe thorax injury can be followed by acute respiratory distress syndrome (ARDS), which is associated with systemic inflammation and mediated by neutrophils. The activation status of these leucocytes can provide a useful tool for risk stratification.
Hypothesis: There is a dose relation between systemic inflammation and trauma related inflammatory complications in patients with an isolated chest injury.
Methods: In Tygerberg Hospital, Stellenbosch, South Africa, blood of adults was drawn within 6 h after isolated thoracic injury (AIS > 2), unless known with immunodeficiency or immunosuppressive drug use. Neutrophil activation was determined by expression of activation markers with flowcytometry at admission, 6 and 24 h after trauma.
Results: We included 68 patients (one blunt and 67 penetrating injuries). Their median Injury Severity Score was 9, with an average hospital stay of 3 days. One patient developed ARDS, leading to death. None of the other patients died. Shortly after trauma, FcγRII and active FcγRII are slightly increased. The increase in FcγRII continues, while expression of active FcγRII decreases. Activation makers MAC-1 (CD11b) and L-selectin (CD62L) show activation of circulating neutrophils by a decrease of L-selectin and increase of MAC-1. At admission, neutrophils show a decreased CD16 (FcRIIIB) expression, which reflects recruitment of young neutrophils. This CD16 low population gradually disappears.
Conclusion: Isolated penetrating thoracic injury leads to a slightly elevated activation status of circulating neutrophils. This elevated activation status is not severe enough to lead to inflammatory complications like ARDS.
Author to editor: Source of financial funding: Hospital Board Scholarship Potential conflict of interest: none.
The treatment and outcomes of mesenteric vein thrombosis

277 Thoracoscopy in the Diagnosis and Treatment of Thoracoabdominal Stab Injuries

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Background and objectives: Occult diaphragmatic injuries are associated with significant mortality, if the diagnosis is delayed. We report our experience in diagnostic and therapeutic thoracoscopy in a selected group of patients with penetrating thoracoabdominal injuries.
Methods: The patients who underwent thoracoscopic management of thoracoabdominal stab injuries between June 2001 and June 2008 were included into the study. The data were retrospectively analyzed.
Results: Eighteen selected patients with thoracoabdominal stab injuries were managed by thoracoscopy. The procedures were performed under general (n = 17) or local anesthesia (n = 1). Diaphragmatic injuries were repaired by intracorporeal sutures in seven cases and bleeding was controlled in another two cases by electrocautery coagulation. The procedures were simply diagnostic in nine patients. The mean operating time and hospital stay were 36.4 min and 4.7 days, respectively. There was neither intraoperative or early postoperative complication, nor mortality. In a patient who had intra thoracic adhesions due to prior tuberculosis, unmentioned by the patient preoperatively, adequate exploration could not be achieved during thoracoscopy. The procedure was converted to laparoscopy and laparoscopic gastric and diaphragmatic repairs were performed.
Conclusion: Thoracoscopy seems to be a safe, quick and efficient method in the diagnosis and treatment of diaphragmatic wounds, due to thoracoabdominal penetrating injuries. The nonoperative management is gradually more used in abdominal stab injuries and surgeons can resort to thoracoscopy and laparoscopy as a minimally invasive, diagnostic and therapeutic tool. Trauma surgeons should be aware of the benefits of thoracoscopy and must have sufficient skills to carry out this technique.

278 The Efficiency of NAC (N-acetyl Systein) Therapy in Acute Pulmonary Damage Formed Blunt Thorax Trauma in Rabbits

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Introduction: In this study, we aimed to determine the effects of NAC therapy on the pulmonary tissue damage in the acute lung injury formed experimentally with bilateral blunt thorax trauma.
Materıals/Methods: Twenty-four New Zealand type female test rabbits were used with the permission approved by the ethic board of Selcuk University. They were divided into three groups as control, sham and NAC (10 mg/kg/day) group. At the 0th, 3rd and 96th hour, blood samples were obtained, and pulmonary tissue samples were taken shortly after their sacrifice at 96th hour. Kruska–Wallis variance analysis and Chi-Square test were used for statistical analysis.
Results: It was determined that NAC therapy had positive effects on the arterial blood pH, PO_2, SO_2, HCO_3, BE values and pulmonary histopathologic values such as atelectasis, hemorrhage, edema, septal bleeding, macrophage, alveolar neutrophil and wet lung weight in the acute pulmonary damage caused by bilateral blunt thorax trauma ($p < 0.05$). It was established that NAC therapy contributed nothing to the blood chemistry, hemogram and blood IL-6 levels ($p > 0.05$). However, SGOT value was high at early time ($p < 0.05$). It was determined that NAC had positive effects on the blood NO levels, but statistically not significant ($p > 0.05$).
Conclusions: In conclusion NAC, used for the therapy of acute lung injury caused by blunt thorax trauma, had positive effects on the arterial blood pH, PO_2, SO_2, HCO_3, BE values, pulmonary histopathology and wet pulmonary weight. Further studies will make the efficiency of NAC therapy in acute pulmonary damage caused by blunt thorax trauma clearer.
Author to editor: Bu deneysel çalışma standardize edilmiş özel bir toraks travma modeli uygulanarak yapılmıştır. Sunum esnasında model resim ile de tanıtılacaktır. Gerektiği taktirde sunumun içine uygulamanın daha anlaşılır hale gelebilmesi için kısa bir video da sunulacaktır.

279 Standardized Smoke Pursuit in Experimental Acute Lung Injury Induced Rabbits

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Summary: Generating Acute Lung Injury by smoke inhalation and analyzing a method to pursuit standardized smoke.
Methods: A standardized glass, measures of 25 cm width, 25 cm length and 25 cm height used as a closed area. We established a valf system under the glass which allows air inside but does not let it outside. With a hole above the glass, we attached the system to pomp with a hose. And the pomp was attached to a 20 cm radial length balloon by another hose. We put a four ampere electricity owen in to glass and put 2 g cotton to the oven. We burned the cotton for 180 s in the closed area and we fullfilled the balloon with smoke by the pomp in 120 s. Rabbits were entubated after being anestesized. We waited 180 seconds for the smoke to reduce down to room tempe rature to avoid thermal damage. After that, we seperated the balloon from the pomp and put it right through rabbits by ambulant air flow and inhalated in 5 min.This procedure repeated for each rabbit. After the procedure ended,the entubation tubes were pulled away and the rabbits were left to spontaneous respiration. Rabbits were allowed to standart rabbit bait and water at the 12th hour.
Results: We think we used a standardized smoke inhalation model in this study.
Comments: We think our system is more practical, cheaper and standardized compared to other smoke inhalation models.
Author to editor: Daha önce uygulanmış değişik duman inhalasyon modelleri ile kıyaslandığında standartize bir model sunmaya çalışacağız. Sunum gerek resim gerekse de video ile desteklenecektir.

VASCULAR SURGERY

280 Hemostatic Affect of "microporous Polysaccharide Hemosphere" (MPH) in a Heparinized Rat Model with Femoral Artery Bleeding

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Introduction and objectives: We claimed to investigate the hemostatic affect of microporous polysaccharide hemosphere (MPH) in a heparinized rat model with femoral artery bleeding.
Methods: Ten wistar rats were anesthetized and heparinised before the femoral artery was pierced to initiate bleeding. Rats were than randomized to control and study groups. MPH was poured into the bleeding site and a mass was placed on it. After 30 s, the mass was removed and assessment of hemostasis was done. If bleeding ceased the test was scored as ''passed at 30 s''. If not, additional dose of MPH and compression was reapplied for an additional 30 s. If bleeding has stopped after the second application, the test was scored as ''passed at 60 s''. If not, the same procedure was repeated for the last additional 30 s. If bleeding stopped now test was scored as passed at 90 s. Similar sequence of trials was done in the control group but without MPH. The difference between bleeding periods in two groups was observed.
Results: Application of MPH resulted in complete cessation of bleeding in four of five and one of five rats at 60 and 90 s, respectively. In the control group hemostasis could not be achieved in all five rats, even at 90 s. The statistical difference between the groups was significant ($p < 0.05$).
Conclusions: Application of MPH and compression with a scale weight significantly decreased the time of hemostasis in a heparinized rat model with femoral arterial bleeding.
Author to editor: Sayin Baskan, Ben ve arkadaslarim ''lokal hemostatik ajanlar'' ile yakindan ilgileniyor ve bunlarla cesitli hayvan deneyleri yapiyoruz. Daha once yine bu ajan ile yaptigimiz bir calisma ayni kongremizin 2008 yilinda secili bildirileri arasina uygun gorulmus ve kongrede Cemalettin hocamizin da hazir bulundugu ve degerli katkilarinin oldugu bir ortamda sunmus idim. Ozetle TraunaDEX isimli toz preperat hemoztaz icin en azindan bu deney modelinde etkili idi. Sonradan dusunduk ki aramizda heparin, kumadin, aspirin ve benzeri kan sulandirici ilaclar kullanan cok miktarda hastamiz var. Iste bu ajan bu tip hastalarda da etkili olabilir mi diye dusunerek bu deneyi gerceklestirdik. Bu calismamiz ile ilgili bazi noktalar: 1. Bu calisma ''amaci, basligi, dizayni, vs acisindan dunyada ki ilk ve tek calismadir. 2. Ulkemizde hayvan deneyleri ve hatta

klinik arastirmalar ve en azindan benim bildigim kadari ile cok az sayida yapiliyor. Evet hayvan deneylerinin bilimsel kanit degerinin oldukca alt seviyelerde oldugunu biliyoruz ama bence ulkemiz ve ulkemiz tibbi adina iyi bir gelisme diye dusunuyorum. 3. Hatta genc asistan arkadaslar bu sekilde etkin ve basarili, kisa zamanda olusturulabilen tezlerde yapabiliyorlar, 4. Bu calismamiz Eylul' 2008 tarihinde Almanya' da yapilan ''5th European Congress on Emergency Medicine'' (http://www.eusem2008.org) kongresinde, gonderilen 500 bildiri arasinda da ilk 50 icine girmis ve ''European Journal of Emergency Medicine'' dergisinde yayinlanmisti Paylasmak istedim En derin saygilarimla dr. gurkan ersoy
Editor to self: Seçilmiş bildiri olabilir

281 Tremendous Increase of Vascular Trauma Patients in our New Location with Low Mortality and Morbidity

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Objectives: We have retrospectively analyzed the surgically treated patients for vascular trauma between June 2005 and December 2008.
Methods: We have operated 181 patients for vascular injuries. 150 were male (82,9%) and 31 female (17,1%). Patients ages' were 32.4 ± 10.3 years in average. Vascular traumas were in abdomen in 11, upper extremity in 66 and lower extremity in 104.
Results: The most frequent cause of injury was penetrating injury in 123 patients while 58 had gunshot wounds. Of the 150 patients with arterial injury 111 had isolated arterial injury and another 22 had isolated venous injury. The most frequently injured arteries were femoral (39) and popliteal arteries (27). Among venous injuries, femoral vein is the most frequently injured vein (26). We used primary repair most frequently (110). In venous injury repairs, primary repairs were most commonly used. Ligation has been used only in radial and ulnar venous repairs. Postoperatively 2 patients died (1.1%). No amputations were required. Fasciotomies have been necessary postoperatively in seven patients (3.9%). The mean duration of hospitalization was 5.24 ± 4.75 (0–30) days.
Conclusion: Vascular traumas may cause extremity dysfunction or loss and death. Early surgical approach, extent and site of the damage and presence of concomitant injuries determine the morbidity and the mortality.

282 Epidemiology of Vascular Injuries Following Road Traffic Collisions, a Population Based Study

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Background: The epidemiology and nature of vascular injuries following road traffic collision are not well studied especially in the Middle East. The aim of this study is to report the incidence of vascular trauma in road traffic collisions and to analyze the frequency and type of injury in relation to crash mechanism and severity of the injury
Methods: Data were collected prospectively from the road traffic collision injury registry in Al-Ain city from April 2006 to October 2007.
Results: Out of the 1,008 patients in the registry, 13 patients had a vascular injury having an incidence of 0.013%. The median age was 26 (range 2–45) years. There were 12 males. Four patients were pedestrians hit by a car and the remaining nine patients were vehicle occupants. Upper extremity arterial injury was the commonest type of injury (n = 4).
The median injury severity score (ISS) in the vascular injury patients was significantly higher than patients without vascular injuries. Median: 29 (range 9–50) versus 5 (range 0-45), respectively, $p < 0.0001$. In addition, the total hospital stay was higher in the first group. Median: 24 (range 1–73) versus 3 (range 1–127), respectively, $p < 0.0001$. Similarly, the percentage of patients who needed ICU admission was greater in the vascular injury group compared with the nonvascular injury group (69 vs. 17%), $p < 0.0001$.
Conclusions: Vascular injury has an incidence of 0.013% of road traffic collisions. The majority of these are in the upper limbs. Patients with vascular injuries have severe associated injuries.

283 Neuro-vascular Injuries in Children with Supracondylar Humeral Fractures

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Objective: Supracondylar humeral fractures are among the most common upper limb fractures in childhood. Even so the treatment of neurologic injury seems to be standardized; the management of vascular impairment remains controversial. Our goal was to evaluate our treatment options and outcome.
Methods: All operative treated supracondylar humeral fractures in children between January 2006 and December 2008 were evaluated. Neurologic and vascular deficit at the time of accident were recorded as well as postoperative healing and outcome.
Results: In our evaluated time period, 43 children with median age of 6.5 years (1.4–15.6 year) with supracondylar humeral fractures were treated operatively. According to Gartland 12 (27%) were type-II, 31 (73%) were type-III. At the time of arrival at emergency department, four (9%) children sustained vascular impairment with pink pulseless extremity persisting after reduction. In three cases, a cubital approach was performed. Two arteries showed a major lesion (one direct suture, one Saphenus vein graft), and one artery showed an entrapment. All lesions showed a normal postoperative pulsation. Another three (7%) children sustained a complete paralysis of the radial nerve. These cases were conservatively treated with complete neural restitution.
Conclusions: Urgent anatomical reduction and fixation are crucial. In persisting vascular impairment after reduction, surgical exploration for the restoration of arterial patency should be performed, even in the presence of a pink hand.

284 Percutaneous Transluminal Angioplasty as a Limb Salvage Procedure

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Background: Surgery for limb salvage has been associated with high morbidity and mortality (MM) rate in patients with peripheral arterial disease (PAD). Recently, it has also been proposed that percutaneous transluminal angioplasty (PTA) of above-the-knee (ATK) and below-the-knee (BTK) arteries are a successful method of revascularization with lower MM rates respectively. This study aimed to evaluate the early results of PTA for limb salvage in such patients.
Methods: From January 2007 to December 2008, 103 patients underwent PTA of ATK and BTK arteries for limb salvage in our Unit. We retrospectively reviewed the medical records of these patients. The mean age of the group was 65.2 ± 11.2 and 76 (73.1%) were male whilst 28 (26.9%) were female. There were 80 (76.9%) patients with diabetes mellitus, 80 (76.9%) patients with a history of smoking, 48 (46.1%) patients with ischemic heart disease, 24 (23.3%) patients with chronic obstructive pulmonary disease, 23 (22.1%) patients with chronic renal failure. A 110 PTAs were carried out at ATK, BTK and both levels in 53 (48.1%), 44 (40%) and 13 (11.8%) patients, respectively.
Results: Among 104 patients, 40 patients were at Fontaine Level III and 64 patients were Fontaine Level IV. Technical success rate 98.1%. The perioperative mortality and morbidity rates were 2.8 and 4.5%, respectively. The early limb salvage rate was 96.3%.
Conclusion: PTA in critical limb ischemia reveals high technical success and limb salvage rates in patients with multiple co-morbidities. Although long term results are needed, the early results seem to be satisfactory with low MM rates.

285 Endovascular Treatment of Emergent Aortic Pathologies

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Objective: This study presents the data and midterm results of endovascular treatment in emergent aortic pathologies
Methods: Between June 2004 and February 2009 data were collected regarding 10 consecutive patients who underwent emergent endovascular stent grafting of the thoracic or abdominal aorta in a single center. Acute aortic pathology consisted of 3 (30%) traumatic aortic injuries and 7 (70%) aneurysmatic rupture of abdominal aorta. Traumatic injuries include traumatic thoracic transection of aorta.
Results: In all patients the stent graft system was introduced via the common femoral artery. Aneurysmal ruptures of aorta and thoracic aortic transections were treated with stenting of the Talent thoracic stent graft (Medtronic, Inc., Santa Rosa, California). Aortauniiliac stenting and crossfemoral bypass was performed in all aneurysmal aortic ruptures. The technicall success was 100%. No intraoperative mortality was observed. Conversion to open surgical repair was needed in one case due to retroperitoneal bleeding from the iliac arteries. Early postoperative mortality was observed in 2(20%) patients; due to massive coagulation disorder and hemodynamic instabiliy in postop 1st day and 11th day. Mean follow-up was 12 months (range 1–41 months). Late mortality was not observed. Overall re-intervention rate was 20% (n = 2); proksimal re-stenting was needed due to type 1 endoleak in one patient. Embolectomy for crossfemoral bypass was needed in one other patient after stenting for aneurysmal abdominal aortic rupture, this patient underwent re-crossfemoral bypass surgery later on.
Conclusions: Endovascular stenting of emergent aortic pathologies may offer a feasible and safe treatment option for emergent aortic pathologies.

286 Changes in Oxidative Stress in the Course of the Treatment of Acute Deep Venous Thrombosis

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Bacgraund: The purpose of this study was to evaluate the changes in oxidative stress during the treatment of acute deep venous thrombosis
Methods: Twenty patients undergoing the treatment of deep venous thrombosis were studied. Arterial blood samples were taken before (baseline) and after treatment on the one week and on the 1st, 3th, 6th,8th and 12th months. Malondialdehyde, reduced glutathion, superoxide dismutase and myeloperoxidase enzyme activities were measured in plasma or whole blood for monitoring of the oxidative stress markers. Production of reactive oxygen species in whole blood was measured by luminol dependent chemiluminescence.
Results: Average follow-up period was 6 (2–12) months. The elevated malondialdehyde, reactive oxygen species and myeloperoxidase, decreased reduced glutathion, plasma nitric oxide (NO) and superoxide dismutase (SOD) levels indicated the presence of oxidative stress in patients with deep venous thrombosis. Malondialdehyde significantly decreased, reduced glutathion and SOD significantly decreased on the 8th month of the treatment.
Conclusion: Deep venous thrombosis induced oxidative stress was detected on patients before the treatment. The treatment of deep venous thrombosis augmented the decrease of oxidative stress response, and these parameters normalised only on the 8th month. Should the treatment duration be extended 8 month? Further prospective research is needed to rigorously evaluate this results.

287 Surgical Treatment of Thrombosis of Internal Carotid Artery after Whiplash Injury – Case Report

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Background: Thrombosis of internal carotid artery followed acceleration-decceleration mechanism injury of cervical spine is rare complication which can be neglected in case of no neurological signs. Different mechanism of blunt injury include stretching and traction of internal carotid artery which is most probably the cause of an intimal tear flap where a thrombus starts to grow. The site, degree of arterial occlusion and collateral circulation determine the neurological deficit.
Case: 49 years old male sustained a car accident as a driver who hit the other standing car. After accident he drove the car home by himself. He was presented to the hospital 3 h later with no visible signs of injury, no neurological deficit and clear articulation. He

became confused and complained of headache, dizziness and nausea. After 5 h of observation left hemiparesis and dilated left pupil has been noticed. CT scan, 3D-CT angiography (MIP, VR) and 2D-NMR angiography (TOF) showed a complete occlusion of right internal carotid artery and terminal branches of a cerebri media. Surgical exploration revealed an intimal tear approximately 6 cm long and high above the bifurcation. Thrombendarterectomy with Dacron patch has been performed. Patient died on 25 th day after the car accident.

Conclusions: Almost always there is a delay between the time of injury and onset of clinical manifestation. Treatment of internal carotid artery thrombosis still remains controversial and uncertain and is associated with high rate of mortality as high as 40% and high rate of morbidity as high as 80%

Author to editor: If there is too much speakers in skeletal trauma, please do not hesitate and transfer the presentation to the vascular trauma. Žiga Horvat

288 Vessel Injuries in Dislocations of and Fractures Around the Knee Joint

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Introduction: Dislocations of and fractures around the knee are accompanied by injuries of the regional vessels to a certain extent. In any case of suspicion at the scene of accident an immediate transport to an adequate trauma center is the precondition for successful limb salvage.

Methods: Between 1994 and 2007, 20 patients with arterial injury after dislocation of or fractures around the knee have been treated. Retrospective analysis was performed in order to acquire epidemiologic data. Furthermore we investigated the sufficiency of preoperative management and diagnostics. We explored peri- and postoperative complications, such as compartment syndrome, secondary thrombosis, infection and number of revision surgeries and related the data to the final follow up after 12 and 24 months.

Results: Arterial injury was found in four cases of knee dislocation, in seven cases of proximal tibial fracture, and in nine cases of distal femur fracture. Seven patients underwent acute angiography, since the year 1998 all patients were assessed with CTA. Seventeen cases were treated with venous interposition, one with a venous patch, and two with direct suture. Fasciotomy was performed in all cases. Limb salvage was successful in 13 cases. In seven cases secondary amputation was necessary, six of these patients were polytraumatized.

Discussion: Sufficient time management is crucial for the survival of vessel injured extremities, as the time of ischaemia must not exceed 6 h. Perfect interdisciplinary coordination and the establishment of specific algorithms are needed in order to decrease the risk of complications and amputations of lower extremities.

ABDOMINAL TRAUMA

289 The Survey on the Epidemiology of Car-motor Related Accidents in Children in Kashan, Iran

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Introduction: The most common cause of death in children is accident and reinforced a lot of taxes on the society. Kashan has the second position in trauma ranking of Iran so we studied this important issue in the children.

Methods and material: In this descriptive study, data has been gathered by trained hospital nurses during 12 month in traumatic patients refered to 400-bed teaching hospital, Kashan. the main method is questionnaire filling by direct interviewing.

Findings: Among 98 cases of trauna 45(45.91%) of them was children below 19 years old that 32 cases (71.1%) were due to car accident, 9 cases (9.18%) were due to motor accident and rest of them (5.42%) were pedestrian accident. Boys involved 3.5 times as girls the most injuries happened was head-injury (73.3%).

Conclusion: These finding suggest that we have to pay more attention to this age group specially 16-18 because of the high rate of their involvement. finally as you see the last but not the least, these findings emphasise on protective cap wearing for every persons.

290 Managing Blunt Splenic Injury in a Level II Trauma Center: The Laparoscopic Option

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Background: The past 2 decades treatment modality of blunt splenic trauma was a point of discussion. Where nowadays explorative laparotomy remains the standard of care for hemodynamic unstable patients, treatment of hemodynamic stable patients is less uniform. In this stable population maximum conservative approach seems preferable, though level 1 evidence is still absent. Failure of the conservative pathway is backed up by percutanous angioembolisation or laparoscopic salvation. The evolution to minimal invasive access makes laparotomy as a primary care for hemodynamic stable isolated splenic injury superfluous.

Methods: This paper discusses the initiation of explorative laparoscopy and successive splenectomy in two patients scoring a grade III posttraumatic splenic injury. Grading was based on CT scan imaging using the Spleen Injury Scale defined by the American Association for the Surgery of Trauma (AAST). Conservative treatment was abandoned because of moderate hemoperitoneum and continuing need for transfusion.

Results: An uncomplicated laparoscopic splenectomy was performed in both patients. Perioperative spleen preserving measures failed because of the extent of the parenchymal lesion.

Conclusion: Performing laparoscopic splenectomy seems a good procedure when conservative treatment for splenic injury fails. This accounts for a rural level II trauma center where the accommodation to perform safe angioembolisation is missing, knowing that laparoscopic splenectomy is not a straight forward procedure but is made easier because of the growing skills of our surgeons.

291 Successful Microsurgical Penile Replantation Following Self Amputation in a Patient with Psychosis at Trauma Center

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Report on a psychiatric patient brought to trauma center with self inflicted penile amputation. The penis was replanted microsurgically. At 3 month follow-up examination, he reported nocturnal penile tumescence. Under optimized therapy of his psychiatric disease, the patient appreciated the restored body image. Excellent functional and cosmetic results can be achieved. After a review of the clinical information available the case best fits the description for Klingsor Syndrome. A plan of management is given.
Author to editor: Our experience of varied presentation at level 1 trauma center. Patient care from resuscitation to rehabilitation is emphasised

292 Continuous and Direct Intra-abdominal Pressure Measurement after Damage Control Surgery; an Elaboration of Technique as Used in a Role II Military Hospital in Afghanistan

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Introduction: Abdominal Compartment Syndrome (ACS) can develop in patients at risk and is associated with a high rate of morbidity and mortality. Especially for the patient who has been operated in the damage control surgery (DCS) mode is prone develop ACS. The intra-abdominal pressure (IAP) was measured directly and continuously (CDIAP) in this report; it is technique and benefits are explained.
Methods: During a 2-month period patients were fitted with a single lumen central venous catheter (CVC) to measure the IAP, whom were admitted to the Role II military hospital in Afghanistan and who underwent DCS.
Technique: A CVC was placed through the abdominal wall at the end of the surgical procedure. It is then connected via a pressure transducer to the monitor and continuously flushed. The IAP could then be monitored both in the operation theater and in the intensive care unit (ICU).
Benefits: Under direct vision the CVC was placed, thus decreasing the risk for iatrogenic injury. The IAP could be measured in theater to decide whether or not to close the abdomen. In ICU the nurses where constantly informed of the IAP which could be read simply on the monitor. There was no need to perform the cumbersome and time-consuming The bladder pressure measurements (BP), with it is additional risks of needle stick injury and bladder infections, were abandoned. ICDIAP seems to be cost effective in comparison to the interval BP, with approximately 50 euros for CDIAP and 140 euros for BP measurement for six days.

293 Protocol-driven Approach of Bleeding Abdominal and Pelvic Trauma

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Materials and methods: In the present study 87 patients with abdominal-pelvic trauma meeting the study criteria have been selected in 16 months period. Thirthy-seven patients (42.5%) had an unstable and 50 a stable pelvic fracture. Unstable fractures were classified APC II or III in 12 cases, LC II or III in 16, VS in 6 and a combination of previous patterns in 3.
Results: Pelvic fracture pattern derived from initial screening radiograph correctly predicted in UPF patients a significant retroperitoneal hemorrhage in 32 of 37 cases, while in SPF patients correctly indicated a significant extra-pelvic source of bleeding in 41 of 50. Therefore, sensitivity was found to be 78.04%, specificity 89.13%, PPV 86.48%, NPV 82%, and overall accuracy 83.9%
Conclusion: In summary: (a) pattern of pelvic fracture, even roughly classified by a screening radiograph, is suggestive of a significant pelvic bleeding in the majority of patients who survive initial treatment; (b) early application of measures of temporary pelvic closure,(PIB o C-Clamp) when needed, should be considered a completion of the initial resuscitation protocol; (c) once excluded the need for emergency celiotomy with US, CESCT is the best diagnostic tool to choice the appropriate way, angiography or fixation, to manage bleeding pelvic injuries; (d) CESCT is the best diagnostic tool to indicate the need of abdominal angiographic embolization and to diagnose initially missed hollow viscus injuries; (e) availability of equipped CT scan and angiographic suites closed to the emergency room and of short response time interventional radiologist is a crucial point

294 Gastric Pneumatosis and Hepatic Portal Venous Gas After Blunt Trauma Does not Mandate Surgery

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Hepatic portal venous gas (HPVG) is often associated with serious intra-abdominal pathology like ischaemic bowel disease and necrotizing enterocolitis, with reported mortality rates above 75%, with most requiring urgent operation. However, HPVG has been reported seen on ultrasound or computed tomography (CT) scans immediately after blunt trauma, followed by spontaneous resolution. Gastric pneumatosis (GP) has rarely been reported as a trauma-related entity. The combination of HPVG and GP after blunt trauma has been described in very few patients.
We report the case of a 16-year-old woman who presented with an EDH requiring craniotomy and an initial abdominal CT scan showing only an OIS grade 2 liver injury. A transient increase in serum amylase combined with abdominal distension led to a repeat abdominal CT scan 48 h post injury to rule out pancreatic and duodenal injuries, revealing GP and HPVG. Endoscopy demonstrated mucosal erythema of the posterior gastric wall from the fundus to the pylorus. However, the clinical status of the patient was benign, and did not mandate surgical intervention. The patient was treated nonoperatively with nasogastric decompression and antibiotic coverage, and underwent a successful recovery with no abdominal complications.
To our knowledge, only one other adult patient has been described with HPVG and GP occurring after an initial normal abdominal CT scan. A gastric resection was performed, and operative treatment was recommended for this combination of entities in trauma patients. Our patient shows that treatment strategies in these cases probably should be guided by the clinical status of the patient.

295 The Colorectal Injuries

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Introduction and Aims: While the number of colorectal injuries due to penetrating trauma are increasing, increased traffic accident rates also cause the number of blunt rectal injuries associated with trauma in traffic accidents to be increased. Rectal injuries occur rarely. Because of post operative septic complications, morbidity and mortality rates are high. Early admission, stability, operation type all play important roles in the fate of the patient. We aimed to investigate these criteria in our patients who have colorectal injuries.
Material–method: 21 cases who had penetrating or blunt trauma in our district during last 10 years were included in this study. The parameters of sex, age, etiology, admission time, stability and physical status on admission, concurrent injuries, grades of injuries, operation type, mortality and morbidity were investigated.
Results: 10 out of 14 colon injuries (71,4%) and 5 out of 7 rectal injuries (71,4%) were caused by penetrating injury. In three patients there was concurrent thorax trauma, while one patient had orthopedic trauma and lastly another had head injury. Three patients developed wound infection. one patient suffered from pulmonary complications, while another developed sepsis. Only one patient died (4.76%)
Conclusion:

1. 21 out of a total of 287 patients who had traumatic toracoabdominal injuries suffered from colorectal injuries (7.3%).
2. In order to prevent septic complications, diversion operations were prefered oftenly. This tendency should be questioned.

296 Torsion, Infarction and Haemorrage of the Greater Omentum as a Cause of Acute Abdominal Distress

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Aim of this study is to present three cases with torsion of omentum, that often resemble acute cholecystitis or appendicitis, and the diagnosis is made at the time of exploratory laparotomy.
Case description: The first case, a 30-year-old men, presented with a 7-day history of right hypocondrial abdominal pain, fever and vomiting. The pain increasing in severity while the patient is standing and relieved in supine position. Laboratory findings were normal, except for mild leucocytosis (12,500/cc). The patient underwent U/S examination, which showed an encysted mass in the right abdomen. A mass, originating from the omentum, was revealed after laparotomy. The mass was excised and an appendectomy was also performed.
The second patient, a 43-year-old female, was admitted in our department with abdominal pain, associated with vomitus. A mild leucocytosis (13,700/cc) was observed. An U/S was carried out, which revealed a mass 5×6 cm lying besides a stone-free gallbladder. The patient underwent diagnostic laparoscopy and a cystic mass, which was twisted, was resected using bipolar forceps.
The third patient, a 49-year-old female, presented to our E.R. with pain, fever and continuous vomiting. Leucocytosis (17,700/cc), was the only positive laboratory test. U/S and abdominal CT scan, showed a mass, 11×8 cm of dimensions, surrounding the spleen. The patient underwent diagnostic laparoscopy and a cystic mass, was resected laparoscopically.
All patients recovered uneventfully.
Conclusions: Symptoms, laboratory findings and imaging evaluation are nonspecific. Laparoscopic approach, seems to be an effective procedure for the disease.

297 Penetrating Abdominal Trauma Cases Operated at Kars State Hospital

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Objective: Epidemiological investigation of penetrating abdominal trauma cases operated at a secondary care setting.
Material: Penetrating abdominal trauma cases operated at Kars State Hospital between September 2004 and December 2008 were investigated. Patients were reviewed with regard to age, gender, cause of injury (gunshot or stabbing), intraoperative findings, and complications.
Findings: The mean age of 80 patients operated for penetrating trauma was 30.81 ± 2 year with a female to male ratio of 12/68. Age distribution of the cases was as follows: $\leq$ 15 year, 6 cases; 16–64 year, 71 cases; $\geq$ 65 year, three cases. Fifty-six cases had stabbing injury and 24 had gunshot injury. Sixteen of all laparotomies did not reveal any internal organ lesion. Of these 16 laparotomies with negative findings, 13 had been operated for stabbing injury and 3 had been operated for gunshot injury. Twenty-one cases had single organ injury; whereas, multiple organs were affected in 43 cases. Frequencies of organ injuries were as follows: 18 small intestine, 12 colon, 12 stomach, 8 liver, 8 diaphragm, 6 spleen, 3 kidney, and 2 pancreas. The mean duration of hospitalization was 5.9 ± 2 days. After surgery, four cases needed intensive care unit; therefore, they were referred to a higher-level healthcare center. Among cases whom the treatment was completed in our institution, 8 had complication.
Conclusion: Penetrating abdominal injuries mostly occurred in young males and stabbing injuries were more common. Most penetrating injuries can be treated at secondary care centers. However, they should be referred to a higher-level institution after the initial intervention, when necessary.

298 Non-operative Management of Blunt Liver Trauma

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Introduction: Nonoperative management of blunt liver trauma is increasingly being used as a preferred method for selected multiple trauma patients in our clinic.

Objective: The aim of the present study was to retrospectively evaluate the nonoperative management of liver trauma patients admitted to the Department of Surgery between 2006 and 2007.
Materials–methods: Clinical charts of multiple trauma patients with blunt liver injury admitted in the above period were reviewed; 20 patients with blunt abdominal trauma and liver injuries were initial diagnosticated by FAST (15% cases), or CT scan (15% cases) or both (70%) and subsequently monitorised by one of these. Vital signs, level of Hb, AAST grading of liver injury, transfusion requirements, length of ICU stay and hospital stay were documented.
Results: The level of Hb at admission varied between 5 g/dL (5% cases) and 12 g/dL (75% cases). The transfusion requirements was 1.95 U RBC/patient and 1.5 U of FFP/patient; 85% cases were included on AAST grade II, respectively, 15% cases – grade III. The hospital stay was 6–51 days and ICU stay was 1–51 days. The nonoperative treatment was successful in 90% cases (18 patients). Only 1 patient (5% cases) underwent laparoscopic exploration for late haemodynamic instability but no specific measures were needed. There was only 1 death (5% cases) but unrelated with the liver injury (pulmonary contusion with ARDS and MSOF).
Conclusion: Nonoperative management of liver injuries can be safely performed for selected haemodynamically stable patients.

299 Operative and Nonoperative Hepatic Trauma (Our Experience)

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Background: Both nonoperative management (NOM) of blunt hepatic trauma and the damage control laparotomy are significant advances in the management of massively injured trauma victims.
Methods: This study is a retrospective evaluation of 29 patients admitted with liver trauma during 2008. 12 of them required early surgical procedures, 7 damage control surgery and 10 followed NOM. Patients were stratified by age, mechanism of injury, AIS, initial blood pressure, heart rates, and blood transfusion volume. Initial outcome data included major complications, intensive care unit and hospital length of stay, and mortality. Readmission data including the number of admissions, surgical procedures, and hospital length of stay were then analyzed.
Results: The average age of the study group was 39, 58 years. Almost all of these patients were males (75, 86%) and car crash was the main mechanism involved (51, 72%). Liver injuries were frequently an element of multiple trauma and was associated with cranio-cerebral trauma (65, 51%) and spleen lesion (37,93%). The overall mortality during the first admission was 41, 13%, yet 17.24% attributable to the liver trauma and only 6.8% after damage control.
Conclusions: Damage control surgery offers a simple effective alternative to the traditional surgical management of complex or multiple injuries. Phase I can be done at a local hospital before transfer to a major trauma center for resuscitation and definitive repair. Reasonable surgical procedures based on classification of liver injuries and damage control principles increase the survival rate of severe liver trauma.

300 Results of Selective Conservative Follow-up in Abdominal Stab Wounds Presenting with Omental and Intestinal Evisceration

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Introduction: The aim of this study is to present and compare the results of selective conservative follow up of 60 patients presented with omental and intestinal evisceration caused by abdominal stab wounds.
Methods: Of the 961 thoracal and abdominal stab wounds between 2001 and 2008, 60 patients with abdominal organ evisceration were included. Patients were divided in two groups regarding the type of organ evisceration as omental (OE) and intestinal evisceration (IE) respectively. Demographical, clinical data and the outcome of the selective conservative follow up were prospectively recorded.
Results: OE group included 36 patients, all patients were male and the mean age was 28.1. Of these patients 24 underwent surgical exploration (66.6%). Morbidity, mortality rates and mean hospital stay time was 11.1%, 8.3% and 5.2 days, respectively. IE group consisted 24 patients, 22 were male (91.6%) and the mean age was 32. Of these, 16 underwent surgical exploration (66.6%). Morbidity, mortality rates and mean hospital stay time was 25%, 12.5% and 9.3 days, respectively.
Conclusion: Selective conservative follow-up is also possible for abdominal stab wounds with evisceration. But in case of intestinal evisceration the morbidity and mortality rates are significantly higher and the mean hospital stay time is significantly longer compared to omental evisceration. Thus immediate surgery should be considered for the evisceration of intestine rather than omentum.

301 Splenic Trauma: conservative Versus Surgical Treatment

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Introduction: Splenic trauma has classically been the most common cause of laparotomy for trauma. In recent years, great emphasis has been given to conservative treatment.
Objective: The aim of this study was to review of splenic trauma treatment trends in a level I trauma center, and to evaluate the differences between conservative and surgical treatment.
Material–methods: Medical records of adult (over 13 years) patients diagnosed with splenic trauma between January 2000 and December 2008 were reviewed.
Results: 305 patients were treated (average of 38.12 patients/year), 248 were males (81.31%) and 57 females (18.69%) with an average age of 36.31 ± 14.78 years. Average Hospital Length of stay was 18.33 ± 15.06 days. 20 patients had penetrating injuries. The injuries were grade V in 41 cases (13,44%), grade IV in 93 (30,49%), grade III in 119 (93,02%), and grade I/II in 52 (17,05%). 138 patients (45.25%) underwent surgical intervention (127 total splenectomy, 3 partial splenectomy, 5 splenorrhaphy, 3 other splenic surgeries) and

167 patients (54.75%) were treated conservatively. Overall mortality was 7.21%. The mortality of surgically treated patients was 8.7% (8 cases grade V, 3 grade IV and one grade III). Mortality of conservatively treated patients was 5.56% (2 cases grade IV, 5 grade III and 3 grade II)

Conclusions: Splenic trauma remains associated with significant mortality. The differences in mortality between conservative and surgical treatment, are due in part to the fact that patients with more serious injuries, and therefore a worse prognosis, are treated surgically.

302 Traumatic Adrenal Gland Injury: Epidemiology and Outcome in a Major Australian Trauma Centre

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Introduction: Adrenal gland injury (ADGI) is quite rare and mostly associated with other organ injuries secondary to blunt thoracoabdominal trauma. Bilateral ADGI has severe consequence if not discovered in the treatment course of the trauma victims.

Purpose: To review our experience of management of ADGI, epidemiology and outcome in a major Australian Trauma Institute.

Methods: A retrospective analysis of all patients presenting with thoracoabdominal trauma to The Alfred hospital who had been diagnosed with adrenal gland injuries between July 2001 and July 2007.

Results: Of 3,921 patients with blunt thoracoabdominal injuries, 2.4% were identified with blunt ADGI (70 males and 26 women, age range between 15 and 85 years). Right adrenal injuries occurred in 72.9%, left adrenal injuries in 22.9% and bilateral ADGI in 4.2%. CT scan findings revealed 82.2% acute injuries to be hyper dense hematoma expanding and distorting the adrenal gland, Periadrenal stranding and hemorrhagic changes around the adrenal limbs were seen in 12.5%. Oval or round lesions were seen in 3.1%. Surgery was performed in 25% of the study group for associated thoracoabdominal injuries. Patients with left adrenal gland injury had higher rate of mortality, morbidity and length of stay.

Conclusion: ADGI is being increasingly recognised with the widespread use of CT scan in the evaluation of multitrauma patients. ADGI is usually a self limiting and typically managed nonoperatively. Acute adrenal insufficiency should be considered and investigated in case of unexplained hypotension in uni or bilateral ADGI.

303 A Simple and Practical Damage Control Surgery Scoring System for Severe Pancreatic Injury

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Background: At our department, a simple scoring system based on three criteria (blood pressure below 90, BE below –7.5 and body temperature below 35°C) has been used to determine the suitability of individual patients as candidates for DCS.

Objectives: The present study was undertaken to establish a valid strategy for the treatment of severe pancreatic injury and to test the validity of the scoring system used at our department for identifying suitable candidates for DCS.

Subjects and methods: The subjects of the study were 12 patients with the grater and equal of grade III (Organ Injury Scale (OIS))pancreatic injury treated surgically (type III in 3 cases and IV or V in 9 cases).

Results: Resection of the pancreatic body and tail was performed in both the groups to treat type III injury, and all of the cases with type III injury had favorable outcomes. Among the cases with type IV or V injury, all of those patients satisfying two or fewer than two of the criteria of the DCS scoring system survived DCS, while two patients satisfying all the three criteria of the DCS scoring system died after DCS. The two patients who underwent pancreatic duct-forming surgery needed prolonged hospitalization.

Discussion: Our results suggest that DCS should be selected in cases where at least one of the three criteria of the DCS scoring system is satisfied. As a procedure for radical operation, resection of the distal pancreas may be recommended for type III, and pancreatoduodenectomy for type IV or V.

Author to editor: Our results suggest that DCS should be selected in cases where at least one of the three criteria (systolic pressure below 90, severe hypothermia with body temperature below 35°C, and acidosis with BE below –7.5) of the DCS scoring system is satisfied. This DCS score is accords with the score of another abstract (Abs Ref 0087). We did not show the details of the score in another abstract (0087). Please refer in our another abstract (Ref 0087).

304 Electric Welding of Soft Biological Tissues in Surgical Treatment of Abdominal Trauma

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Introduction and objectives: Some results of operative treatment of trauma patients applying an electrical welding method are reported in the present paper.

Methods: A retrospective study of treatment of 892 trauma patients in surgical clinics of Lviv City Emergency Hospital during the year period 2007–2008 was executed. During surgical operations a high-frequency electric source – equipment EK-300M1 for the opened and laparoscopic applications, which was developed in Paton Institute of the Electric Welding NAS of Ukraine, was used.

Results: On the whole, 429 operations were performed, among them 127 – due to thoracic and abdominal trauma. Middle age of patients – 43.5 ± 17.2, an amount of men – 73%. Middle ISS for the operated patients with the combined trauma – 14.7 ± 7.1. Postoperative mortality was 3.5% and a level of complications – 12.6%. Electric welding, as a main method, was used in the case of 42 patients with abdominal injuries. No complications after application of this method were noticed.

Conclusions: The main advantages of the applied method are: duration of operation diminishes due to more fast operating access; there is not a necessity for haemostatic sutures and ligatures; insignificant volume of perioperative blood loss and economy of suture material; in case of necessity of the resection of bowel, the gradual

welding of mesenteric vessels was performed without suturing and ligating; welding of parenchyma of the damaged organs allows attaining a reliable haemostasis; the method does not cause a coagulative necrosis and increases the percent of implementation of organ-saving operations.

305 One-stage Repair for Concomitant Biliary and Duodenal Injury: a Technical Proposal

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Iatrogenic and traumatic lesions involving common hepatic duct and duodenum can be treated with a primary and contemporary reconstruction, at the condition of hemodynamic stability.
We propose a technique which include the following steps: cholecystectomy with intraoperative cholangiography; transection of the common bile duct above the tear, oversewing its distal part; kocherization of the duodenum; a 80 cm long Roux-en-Y jejunal loop is constructed and brought up retrocolically in the right sub-hepatic space, orientating its antimesenteric side towards the corresponding duodenal wall; termino-lateral hepatico-jejunostomy with a transanastomotic temporary stent in case of small biliary duct's size; a side-to-side jejuno-duodenostomy performed 40 cm distally; a feeding jejunostomy.
We remark the following advantages of this procedure: (1) the Roux-en-Y biliary diversion reduces the risks of stenosis and cholangitis, frequent after a direct repair of the common bile duct; (2) an adequate distance between the biliary and duodenal anastomosis prevent entero-biliary reflux; (3) the duodeno-jejunal anastomosis appears more appropriate, considering the complications after direct repair of large duodenal tears.
More aggressive options, such as duodeno-cephalo-pancreatectomy, pancreas-preserving-duodenectomy and segmental duodenal resection, must be considered more risk solutions.

306 Diaphragmatic Rupture: are we Doing Enough?

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Introduction: Traumatic diaphragmatic rupture (TDR) is a rare but potentially life-threatening lesion, with a high incidence of associated injuries; early diagnosis and surgical treatment is of paramount importance.
Methods: A retrospective analysis was performed on all patients treated for TDR at a University Hospital and level I Trauma Center, between January 2000 and December 2008. Twelve patients that underwent diaphragmatic repair were identified from the Hospital database during that period, after exclusion of those performed for intra-operative iatrogenic lesions.
Results: Men accounted for 83% of the patients, and women for 17%. The average age was of 40 years. Blunt trauma was responsible for eight cases. Left hemidiaphragm was ruptured in ten patients. Six patients with blunt trauma and three with perforating trauma, had associated abdominal and extra-abdominal injuries. Eight diagnoses were made at admission. The average length of stay was of 42.3 days. Nine patients needed intensive care. Pulmonary complications such as infection occurred in three patients. Two patients died. One had with multiple associated injuries consecutive to blunt trauma, and the other, with a thoraco-abdominal gunshot wound, that died intraoperatively.
Conclusions: Although rare, TDR must be suspected in all patients with thoracoabdominal injuries. Early diagnosis is sometimes difficult and depends on a high index of suspicion. Both facts are responsible for an under-diagnose of this condition. Surgical repair is necessary even for small ruptures, most commonly through a trans-abdominal approach, as it allows a complete exploration of the abdominal organs, and the identification and simultaneous treatment of associated injuries.

307 Arterio-venous Fistula and Intrahepatic Hemobilia, Late Complications of a Closed Abdominal Trauma

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Introduction: The liver is the most commonly affected organ in abdominal trauma. In our Department, the majority of traumatic liver injuries are treated conservatively. This option involves the monitoring of possible complications, such as late rupture, hemobilia, arterio-venous fistula, pseudo-aneurysm, biloma and abscess formation.
Case: A 19 year-old patient was admitted after a 8 m fall. Established diagnoses were: multiple facial fractures, right pneumothorax with pulmonary contusion, right renal artery thrombosis and grade 3 hepatic laceration. The patient was discharged on the 21st post-trauma day (PTD), after an uneventful course. On the 61st PTD, he was readmitted for abdominal pain. Thoracoabdominal CT revealed an intra-hepatic arterio-venous fistula. Angiographic superselective embolization was performed, and the patient was discharged following a control abdominal CT scan that showed resolution of the fistula. He was again readmitted on the 84th PTD, with abdominal pain, jaundice and gastrointestinal bleeding. An abdominal ultrasound raised the possibility of hemobilia, confirmed by upper endoscopy. A new angiography did not reveal any active bleeding, and an abdominal CT showed satisfactory evolution of the liver lesion. The patient was discharged on the 97th PTD, asymptomatic. At 6 month follow-up, the patient presents no complaints, other than a new-onset arterial hypertension of renovascular origin.
Conclusion: Arteriovenous fistulae and hemobilia are relatively uncommon sequelae of abdominal trauma. However, these diagnoses should be actively sought in the presence of abdominal pain, especially when associated with jaundice and gastrointestinal bleeding. A multidisciplinary approach is essential for a successful treatment.

308 Our Surgical Approach for Liver Traumas

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Introduction: Due to its size and localization, liver can be frequently injured in blunt and penetrating abdominal traumas. Most patients

are treated with conservative methods. Timing of operation play a major role in preventing mortality and morbidity.
Material–method: 58 patients admitted for blunt and penetrating liver injuries between December 2004 and December 2008 were retrospectively evaluated. Type and grade of injury, accompanying organ trauma and type of operation were recorded. Calne et al classification were used for liver injuries.
Results: Mean age was 27.2 (44 male and 14 female). Only 16 patients had isolated liver injury. Mechanism of injury was as follows: 56.9% blunt trauma, 22.4% penetrating injury and 20.7% shotgun wounds. Two patients had major vessel injury. Primary repair and hemostasis (51.7%), primary repair and omentoplasty (15.5%), hepatectomy (6.9%) and packing (25.9%) were preferred surgical methods. Six patients had PATI (penetrating abdominal trauma index) score greater than 25. Hematoma was most frequently seen complication in postoperative period. 8 (13.8%) patients were died, due to blunt trauma (12%) and penetrating injury (3%).
Conclusion: Decision and timing of operation play a major role in preventing of mortality.

309 Isolated Traumatic Blunt Splenic Injuries: Operative Management Does not Increase the Length of Stay: an Institution'S Experience Over 6 years

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Introduction: Nonoperative management of isolated blunt splenic injuries has become the treatment of choice. Our study was designed to review our institution's experience in the management of isolated blunt splenic injuries.
Methods: A retrospective review of the records of all patients with traumatic splenic injuries presented to our institution over a 6 year period (January 2002–December 2007) was performed. Patients were excluded if they suffered penetrating injuries, had other abdominal viscera injuries or died in the Emergency department or within 6 h upon admission
Results: 42 patients had isolated blunt traumatic splenic injuries. The mean age was 40.3 years. 11 (26.2%) patients underwent immediate surgery, while the remaining 31 (73.8%) were treated conservatively. Seven underwent splenectomy while four had splenorrhaphy, while none of the remaining 31 patients failed conservative management. 64% of the patients had either grade 3 or 4 splenic injuries. Patients who underwent surgery had a lower admission haemoglobin level ($p = 0.005$); higher INR ($p < 0.0001$); higher mean grading of splenic injury ($p = 0.006$) and consumed more red blood cells ($p = 0.003$). Surgical intervention or grading of the splenic injuries did not have an significant impact in the total length of stay, however, those patients with a lower GCS and higher ISS stayed longer. These were statistically significant.
Conclusion: Nonoperative management is the standard of care in blunt splenic injuries. Factors apart from grading of splenic injuries or operative intervention are also important in determining the morbidity of these patients.

310 A Rare Trauma Reason: Airbag Injury

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Introduction and objectives: Airbag systems in vehicles are preventive systems for passenger and drivers to protect them from in traffic accidents. In the literature 96% of airbag traumas are minor traumas, for instance contusion and lacerations on face (42%), wrist (14.8%), forearm (16.3%) and chest (9.6%) traumas. Two cases related to airbag traumas are presented here in.
Methods: A 25-years-old male, applied to our facility because of airbag trauma on dorsum of left hand that a 6×8 cm. defect occured. Second case was 32 years old female who was sitting in front passenger seat of car and have blunt trauma to the neck, abdominal region and right forearm. The lesions at these sides resemble an abrative lesion.
Results: The hand injured patient was taken the operating room for exploration. The defect was irrigated and explored; there were any tendons, vascular damage or nervous damage. After debridement, defect on the dorsum of the hand was reconstructed with locally advancement flap. For the second case, the face and neck was dressed with paraffine and antiseptic tulle gauze.
Conclusion: We recommend car manufacturers to encourage two stage airbag usages and not to use corozive materials which may use in fareast origin cars that do not have EuroNCAP standarts. Today, double grade airbag system which swells slowly in first level and then swells with high pressure in second level has manufactured. According to us, usage of this kind of airbags should be standart policy.

311 Delayed Presentation of a Right Posttraumatic Diaphragmatic Hernia

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Diaphragmatic hernias constitute frequent complications after thoracic and abdominal trauma (0.8-5%), especially on the left side (90%) and the diagnosis is frequently delayed. Clinical presentation is variable and may include respiratory distress and abdominal pain, frequently attributed to intestinal obstruction, pancreatitis, biliary colic or peptic disease. The authors present a case report of a right diaphragmatic hernia diagnosed 2 years after a thoracoabdominal blunt trauma. The male patient, 64 years old, was admitted in the Emergency Room with epigastric pain, bloating, slight abdominal distension with 6 months of evolution and recent worsening. He suffered a previous thoracoabdominal trauma 2 years ago, consecutive to a downfall of about eight meters high with lumbar vertebrae fracture (L1) and was submitted to conservative treatment in an orthopaedic ward; X-ray signs of diaphragmatic hernia were unrecognized. Actual chest X-ray revealed an elevated right hemidiaphragm and presence of abdominal content in the right hemithorax. MR demonstrated a right hemidiaphragmatic rupture and the presence of abdominal content in the thoracic cavity. Patient was operated by laparoscopic approach; a diaphragmatic hernia grade III (A.A.S.T. classification) was observed and submitted to prosthetic repair. Postoperative period was uneventful. Patient remains asymptomatic with no signs of recurrence after 3 years. This case is paradigmatic of the difficulty of immediate diagnosis of diaphragmatic hernias, especially at the right hemidiaphragm. High index of clinical suspicion is needed for its early recognition in context of blunt trauma. Laparoscopic treatment revealed to be safe and efficient, with the known advantages of minimally invasive procedures.

312 Renal Injury: 18-Year Experience

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Aim: We review our trauma cases over the last 18 years and discuss our diagnosis and treatment modalities.
Material–method: We retrospectively evaluated the diagnostic and therapeutic methods in 203 patient patients hospitalised to Urology and General Surgery between January 1990 and August 2008 with renal injury. Age, sex, type of injury, transport time, diagnostic methods, grade of injury, accompanied organ injury, treatment and complications were all evaluated.
Results: Their ages were between 5 AND 69, 168 were male and 35 were female. The type of injury was penetrating in 122, blunt in 80 and blunt and penetrating in 1 patient. In 117 patients, the left kidney was injured, in 80 the injury was at right kidney and in 6 injuries was bilateral. The average transport time to hospital was 112 min (30 min–10 days). One hundred and seventeen out of 203 patients were explored immediately as they hemodynamically unstable position. Remaining 86 patients were evaluated with ultrasonography, intravenous urography and computerised tomography. Sixty four of these patients were followed conservatively. The injuries in patients followed conservatively were in 46 patient's grade 1, in 15 grade 2, in 3 grade 3. 145 renal units of 139 patients were operated. Nephrectomy was done in 78, nephropathy was done in 54 and renal artery repairing was done in 1 patient.
Conclusion: Nephrectomy and mortality were high because of the long transport time, frequent high grade and high rate of associated organ injuries.

313 Imaging of Abdominal Postoperative Infection in Polytrauma Patients

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Introduction: Imaging techniques are important for the diagnosis of abdominal sepsis, but their interpretation in the postoperative period is difficult. The differentiation between postoperative complications, posttraumatic and postoperative phenomena as a result diverse surgical procedures and imaging features in different pathological conditions resulting in inflammatory process is necessary to understand.
Aim: To analyse the imaging features of the intraabdominal posttraumatic and postoperative complications in polytrauma patients.
Material–methods: A total number of 895 consecutive polytrauma patients with abdominal lesions were treated in a 10 year period, all the cases with intraabdominal posttraumatic and postoperative complications were analyzed. All the imaging findings of different complications were evaluated and differential diagnosis with postoperative modifications in the posttraumatic period was performed.
Results: In order to facilitate the specification, the intraabdominal postoperative complications were classified as follows: superficial infections: infections of the abdominal wall (cellulites, abscess, phlegmona); visceral infections (abscess, cholangitis, fistulas); intra- and retroperitoneal infections (peritonitis, abscess, hematomas, bilomas, urinomas). The most frequent postoperative complications and the common postoperative status in polytrauma patients were described, being illustrated with examples from our experience.
Conclusions: Postoperative infections represent significant causes of morbidity and the diagnosis is difficult. It is very important to interpret correctly the images of postoperative and posttraumatic infections, as well as the postoperative anatomy in order to avoid the potential errors in case of potential postoperative complications. Imagistic procedures are the first choice in the postoperative and posttraumatic period in a febrile patient.

314 The Treatment of Intraabdominal Injuries in Polytrauma Patients – one Center Experience

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Introduction: Polytrauma treatment involves interdisciplinary issues and the variety of new imaging techniques, treatment protocols and miniinvasive procedures influences significantly trauma service.
Aim: To optimize the medical and surgical tactics for intraabdominal injuries in polytrauma.
Material–methods: A total number of 895 polytrauma patients with abdominal lesions treated in our unit in the period 1998–2007 were analyzed. 371 (41.5%) were hemodynamically unstable, 524 (58.5%) – stabile, 140 (15.6%) – Glasgow coma score below 11. Immediate surgery was performed in 393 (43.9%) cases, concomitantly with resuscitation procedures. Laparotomy was performed in 363 (92.37%), thoracotomy – 16 (4.07%), simultaneous brain and orthopedic surgery – in 23 (5.8%) cases. Urgent surgery was performed in 350 (69.72%) hemodynamically stabile patients. A number of polytraumatized patients with solid organ injuries were scheduled for nonoperative treatment. Delayed surgery included extraabdominal procedures, predominantly for limb and thoracic fractures.
Results: Overall lethality was 19.9%, postoperative lethality – 21.12%, being significantly higher after immediate versus urgent and delayed surgery ($p < 0.001$).
Conclusions: The choice and succession of surgery in polytrauma is determined by the priority of the trauma severity and life threatening complications. Absolute indications for laparotomy, these being the first choice, admit the possibility for interventions in other anatomical regions as the second choice. Adequate antishock therapy on admission as well as the optimized medical and surgical tactics in polytrauma, including technical equipment, treatment procedures, time of surgery, influence the prognosis and the outcomes.

315 Conservative Treatment as an Option in the Management of Penetrating Abdominal Trauma in Children

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Introduction and objectives: Penetrating abdominal injuries take place primarily gunshots or stabbing, and account for 10% of all abdominal injuries. Conservative treatment is the standard approach

for the management of blunt abdominal trauma in the literature. However, the management of penetrating abdominal injuries has remained controversial.
Methods: A total of 75 children who suffered from penetrating abdominal trauma admitted to our clinic between 2003 and 2007 were evaluated. Patients with hemodynamic instability and/or signs of bowel perforation underwent an immediate laparotomy. The remaining patients were observed with serial clinical examinations, radiological evaluation and hemoglobin level.
Results: There were 64 boys and 11 girls. The mean age was 10 years (range 1–16 years). The mechanism of injury was stab wound in 51 patients (68%) and gunshot in 24 (32%). The most commonly injured organ was small (34.2%) and large intestine (25.7%). Omentum or bowel was eviscerated through wound in seven patients; none of them had organ injury. Overall, 46 (61%) were treated conservatively, 29 patients (39%) required surgical treatment (14/51 stab wound, 15/24 gunshot). Of the 29 patients who underwent surgery, 5 (17.2%) was found to have no significant organ injury. Of the all 46 patients followed conservatively, only 1 patient required surgery. There was no complication or death in our series.
Conclusion: The majority of children with penetrating abdominal trauma can initially be managed nonoperatively even in gunshot injuries if there is no hemodynamic instability or signs of hollow viscus perforation. This is particularly true for stab wound injuries.

316 Our Approach to Sigmoid Colonic Volvulus

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Sigmoid volvulus is seen more frequently at elderly ages and early diagnosis and treatment decreases its mortality and morbidity rate. We reviewed sigmoid volvulus cases treated in our clinic. 24 patients hospitalized and treated due to diagnosis ofsigmoid colonic volvulus in Dr. Lütfi Kırdar Kartal Education and Training Hospital during 2004–2009 were analysed. Treatment modalities, morbidity and mortality rates were analysed. 12 patients were male, 8 were female. Mean age was 69 (52–87). Sigmoid colon resection and end colostomy was done to 12 patients, sigmoid colon resection and end to end anastomosis was done to 8 patients and nonoperative colonoskopic decompression was applied to 4 patients with sistemic illness and they were prepared for elective sigmoid colon resection and end to end anastomosis. In one patient with anastomosis, anastomotic leakage was detected and end colostomy was applied. Two emergently operated patients with sistemic illness died. Mortality rate was%8. In conclusion, sigmoid volvulus patients with sistemic illness should be prepared to elective surgery with colonic decompression. We think that the best treatment for early diagnosed cases is sigmoid colonic resection and end to end anastomosis.

317 Missed Colonic Injuries after Elective Inguinal Surgery: Report Of 4 Cases

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Introduction: Intestinal perforations are very infrequent after inguinal hernia surgery and after varicocele surgery, which to our knowledge, has not been reported before. Herein, we report four cases with missed colonic injuries undergoing emergency surgery after elective inguinal surgery.
Methods: Consecutive admissions between August 2002 and December 2008, presented with acute abdominal gastrointestinal disorders, were recruited retrospectively in a tertiary referral hospital.
Results: Analysis revealed 4 (0.6%) out of the 626 cases with a delayed diagnosis of colonic injury after inguinal surgery, performed elsewhere. All patients were male and the mean age was 46. Three of them had a history of open preperitoneal hernioplasty with mesh, while one had undergone varicocelectomy. Mean admission time was 38 h after the previous surgery. All had Grade II injuries according to the Colon Organ Injury Scale (revised). In one patient the perforation was brought out as a loop stoma, while the rest underwent a Hartmann's procedure. One patient died due to abdominal sepsis.
Conclusion: Although the management of colonic injuries has evolved in time, they still can be catastrophic when missed, even after elective surgery that seems to be innocent.

318 Is Diverting Stoma Necessary for All Civilian Colonic Injuries?

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Introduction: Onset of World War II, the report concerning diverting colostomy declared reduced mortality rates for colon injury, compared to World War I. In spite that nearly 70 years has passed away, although all therapeutic options, this method – used for the management for colon injury – still include some controversial points.
Methods: Ninety-five patient's characteristics were compared in two groups (patients with or without diverting stoma). Clinical findings and patient's characteristics, injury mechanism, localisation of the wound, blood transfusion requirements, fecal contamination, Colon Injury Score (CIS), Penetrating Abdominal Trauma Index (PATI Score), evidence of shock, morbidity rate, mean hospital stay, main and additional surgical procedures of 95 patients who admitted to our clinic from 1996 to 2008 were reviewed retrospectively.
Results: We have no mortality in both groups, except the first postoperative 24 h. Diversion colostomy was performed in 58 patients and primary repair in 37 patients. Median hospital stay for primary repair and diversion groups were 8 and 13 days, respectively, ($p < 0.05$). Respiratory system, septic complications, clinical anastamosis leakage and other complications were similar in both groups.
Conclusions: Although all articles that prompt primary repair, this approach includes some inconvenient points. It is acceptable in military or war originated injuries. Diversion mostly is necessary in wounds, related to highly potent and energic fragments. Nevertheless, nearly all of the civilian colonic injuries can be treatment with primary repair without diversion since the mechanism of the wound is different than war injuries.

319 Treatment of Isolated Penetrating Flank Trauma

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Background: The management of haemodynamic stable penetrating injuries of the flank has not been well defined; laparoscopic exploration, closed abdominal examination and triple contrast computed tomography (CT) are alternative modalities. Our aims are to explain our experiences in these cases.
Methods: We reviewed the patients with isolated penetrating flank trauma admitted between 2003 and 2008. The flank was defined as area between the anterior and posterior axillary lines, inferior to the fifth intercostal space superior to the iliac crest.
Results: There were 79 haemodynamic stable patients (7 gunshot and 72 stab injuries). There were three patient groups: laparotomy (G1) (n = 9), laparoscopy (G2) (n = 14) and only closed clinical observation with triple contrast CT scan (G3) (n = 56). 7 patients in the G1 were gunshot injuries; the other two gunshot injuries were tangential and were included in the G2. In the G2 there were four left diaphragmatic injuries, all repaired laparoscopically. One patient with splenic laceration and another with small bowel injury were converted to an open exploration. There were eight negative laparoscopies (8/14).Two patients of G3 (2/56) with negative tomography were submitted to laparotomy after 3 day of closed observation. The mean length of hospitalization in the groups was respectively 10.2, 3.0 and 3.5 days.
Conclusion: In stable, especially stab wounding patients, the closed clinical observation with triple contrast CT scan should be performed to minimize the need for laparotomy; the addition of laparoscopy is useful for evaluation of diaphragm.

320 Traumatic Hemorrhage from Rupture of a Renal Mass which was Diagnosed to be Metastatic Hepatocellular Carcinoma

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Introduction: Intra and retro abdominal hemorrhage are common following blind and penetrating abdominal trauma. Liver, spleen and kidneys are known to be prone to injury and to bleed after an abdominal trauma. Hepatocellular carcinoma is a well known disease. However, a renal mass from a primary origin in the liver is rare. This paper presents a patient, who was treated with right nephrectomy for traumatic bleeding from a ruptured renal mass. End diagnosis was metastatic hepatocellular carcinoma.
Case: The patient was 50-years-old man. He had no positive medical and surgical history, and no complaint. He was referred to Emergency service after traffic accident. During his initial assessment abdominal rigidity and tenderness were found, which were accompanied with tachycardia and hypotension even after fluid resuscitation. FAST revealed that there was free fluid in his abdomen, so we decided to operate him. At laparotomy we observed a bleeding tumoral mass in the right kidney and in his liver. He was treated with right nephrectomy and irregular hepatectomy. Pathologic examination demonstrated a metastatic hepatocellular carcinoma.
Conclusion: Hepatocellular carcinoma is a well known disease with its common acute complications such as rupture and bleeding. In this case, we observed HCC metastasis to the right kidney although the patient had no medical and surgical history including HCC. Bleeding was induced after a blind trauma, was treated with resection.

321 A Misfortune of Delayed Diagnosis: Gall Bladder Injury without Any Symptoms Following Penetrating Abdominal Trauma

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Gall bladder (GB) injuries either following penetrating or blunt abdominal trauma is a rare entity and usually misdiagnosed with a delay in diagnosis. The incidence of GB injury is reported to range between 0.5 and 8.5% among the surgically treated patients following abdominal trauma. Cholecystectomy is the definitive treatment even in severe contusion of a nonperforated GB. Simple suture repair or cholecystostomy are also advocated as alternative surgical interventions by some authors. GB is afforded significant anatomic protection from external trauma, since it is partially embedded in the relatively massive liver parenchyme, cushioned by the surrounding omentum and intestines, and shielded by ribcage. Clinical symptoms may be minimal or nil initially but gradual clinical deterioration, related to spillage of bile into the peritoneal cavity, can follow. Bilous fluid taken by paracentesis or diagnostic peritoneal lavage can only be helpful after a delay as abdominal computed tomography. An 18-year-old male was admitted to our emergency department for the fifth time because of penetrating abdominal trauma of at the right upper quadrant by a knife in a 15-day-period. He was hospitalized in three of them and operated on at last, because of acute abdomen, since paracentesis revealed bile coloured free abdominal fluid in addition to abdominal guarding, leucocytosis(19,000/mm^3), and fever.The ultimate ultrasonography and computed tomography revealed large amount of free fluid (bile) and minimal intrahepatic hematoma. At laparotomy; full-cut hepatic and cholecystic perforation (both anterior and posterior surfaces) resulted in cholecystectomy. He was discharged on the fourth postoperative day. Since almost all reports about the delayed rupture of GB are usually unrecognized GB perforations,a diagnostic delay can only be avoided by a high clinical index of suspicion.

322 Blunt Renal Trauma in Children

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Aim: To review the conservative management of pediatric renal injuries secondary to blunt abdominal trauma, and to determine the appropriate indications for imaging and operative intervention.

Materials–methods: From 2003 to 2008, 19 children with renal injuries secondary to blunt abdominal trauma that were admitted to the authors' department were reviewed. All patients underwent ultrasonography and Doppler of their renal vessels. Additional investigations with computed tomography scan, cystography, or nuclear medicine functional studies were performed as indicated. But, renorrhaphy was not performed.
Results: The renal injury grade was grade I in six, grade II in three, grade III in four, grade IV in four, and grade V in two patients. All patients were initially treated nonoperatively. Three patients underwent acute surgical exploration for life-threatening renal bleeding (grade IV–V injury), none of them for nonrenal causes. Prompt nephrectomy was done for shattered kidney and renal pedicle injury in two patients. Lacerations were repaired in one patient. No child required delayed surgery. 16 patients treated conservatively and in one of them renal functions were failured.
Conclusion: The conservative treatment of pediatric renal parenchymal injuries is safe and effective. In most instances, the goal of threapy is conservative. But presence of life-threatening renal bleeding and regardless of the grade of injury, should be treated with prompt surgery.

323 Complications of Primary Repair of Colon Injury

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Introduction and objectives: Primary repair has become the recommended treatment for most penetrating colon injuries. The purpose of this study was to evaluate the colon-related complications in a serie penetrating colon injuries managed exclusively with primary repair.
Methods: The records of patients with colon injuries operated on Taksim Education and Research Hospital between 2000 and 2008 were identified. Patients records were reviewed to determine the cause of injury, position and type of colon injury, special procedure done, outcome, colon related complications and mortality.
Results: Ninety-three patients fulfilled inclusion criteria. Eighty-three patients (89%) were treated with primary repair. Fecal diversion was used in 10 patients (11%). The overall mortality rate was 1%. Thirty-eight patients (41%) experienced colon-related complications. Among the 83 patients repaired primarily, 32 (38%) suffered colon-related complications compared with six (60%) repaired by diversion. Primary repair was not associated with any increase in colon-related complications.
Conclusion: Penetrating colon injuries can safely be managed by primary repair, colostomy may be advised in selected patients.

324 Diagnosis and Treatment of Traumatic Abdominal Injuries in a Low Trauma Volume Hospital

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Background: Abdominal injuries, even in severe blunt trauma, are relatively rare and gives minute early symptoms, though they can be life threatening.
Aim: To describe prehospital handling, diagnosis and treatment of traumatic abdominal injury in a low volume hospital.
Method: A retrospective analysis was made of all patients with traumatic abdominal injury, primarily treated at Umeå University Hospital with a primary catchment area of 142,600 inhabitants within 60 km radius. Data from 2000 to 2007 were collected from the the ongoing injury registration and complete pre-hospital and in-hospital assessment were analysed.
Results: In 87 patients (n = 59 men), 196 injuries were found, of which 117 were abdominal injuries. Blunt trauma caused injury in 81 patients. Of 55 patients with isolated abdominal injuries, 43 injuries were AIS 3 + . Of 32 multitrauma patients, 14 patients sustained 18 AIS 3 + abdominal injuries. CT was used for diagnosis in 80 patients. Sixty-three patients were treated conservatively, whereas 22 patients had laparotomy and 2 patients underwent angiography. Of 47 patients transported by ambulance or helicopter, 83% arrived at the emergency unit within 60 min after prehospital alert. In 57% the time on scene were longer than 10 min. In this group only 31% were diagnosed by CT within 60 min after arrival to the emergency unit.
Conclusion: Low volume in trauma care results in substandard handling time. In hospitals with a low volume exposure to trauma, the prehospital response teams and surgeons achieves limited experience, especially in penetrating trauma. Exchange programs must be emphasised.
Author to editor: This study describes the complete workload in primary handled trauma patients in a typical Nothern European Universtyhospital with very low incidence of penetrating trauma and low volume of blunt trauma. Our trauma registry covers 100% of patients admitted to the hosptial. It is the only hospital in the area, and patients do not bypass the system and are treated elsewhere. The study will point out that prehosptial responsetime and inhosptial procedures are is acceptable, but emergencyroom handlingtime is to long, due to lack of practice. National or European exchange programs for surgical trauma care must be practiced.

325 Pancreatic Lesions in Blunt Abdominal Trauma

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Introduction: Injuries of the pancreas are relatively rare in blunt abdominal trauma and also difficult to recognize preoperative because of the retroperitoneal location of the pancreas. A complete physical examination and several paraclinical tests (biochemical and imaging) should be performed for all patients suffering a severe blunt abdominal trauma.
Method: From a number of 1,053 cases of blunt abdominal trauma admitted in Clinical Emergency Hospital Bucharet Romania in the last 10 years, a number of 86 present pancreatic lesions diagnosed by ultrasound, CT scan and biochemical tests (enzyme).
Results: According to severity of the pancreatic lesions (ISS) and their grades (AAST, OIS) decision for emergency surgery (< 24 h) was made in 70 cases and 77 cases were treated with conservative surgical procedure. Several types of interventions were performed such as: hemostasis, pancreatoraphy; drainage; necrectomy, necrosectomy, pancreatectomy. Postoperative hospitalization was prolonged because of mild and severe complication like pancreatitis, pancreatic fistula, gastric fistula, and subfrenic abcess. Mortality in this group of patients was 13.95% (12 cases) and 5 cases died because of associated injuries (cranial, thoracic, orthopedic)

Conclusions: Pancreatic lesions in blunt abdominal trauma represent about 8.16% of cases. An accurate diagnosis of trauma patients is essential for the accuracy of the treatment. For minor and isolated pancreatic lesions the outcome is quite good and complications are rare, but in severe trauma the morbidity and mortality tends to increase.

326 Management of Postoperative Complications in Trauma Patients with Pancreatic Lesions

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Introduction: In past decades, abdominal trauma became most frequent in adult age and pancreatic trauma occur in general in about 0.2–6% of abdominal trauma (pancreas in estimated to be the 10th most injured organ, because it is situated in a relatively protected position). The rate of pancreatic injury observed in the Clinical Emergency Hospital of Bucharest is not very high although the abdominal trauma represents 15% of trauma patients.
Method: From 1,404 trauma patients with abdominal trauma admitted in Clinical Emergency Hospital of Bucharest in past 10 years, only 113 have pancreatic trauma with grades I through V, and 44.13% (51 cases) of them have postoperative complication like: acute pancreatitis, pancreatic fistula, gastric fistula, pancreatic psudochist, subfrenic abcess.
Results: Accordingly with pancreatic grade lesion we performed exploratory laparotomy, hemostasis, pancreatoraphy, pancreatic drainage, necrectomy, necrosectomy, partial pancreatectomy, and duodenopancreatectomy. The most frequent complications observed in our study was in grades I and II of pancreatic trauma – 24 cases (47.05%) and occurred at 3–6 postoperative days. 43 of postoperative complicated cases were treated conservatively and 8 of them underwent reintervention for drainage.
Conclusions: Fistula formation is the most frequently complication, but with the proper treatment and supportive care, fistulas can be solved spontaneously (84.31% in our study). Delayed diagnostic and delayed surgery for pancreatic trauma complication shows a higher morbidity and mortality. Outcome for minor complications is usually quite good but in severe complications became much poorer.

327 Unexpected Multiple Intraabdominal Injuries: Beware of Further Projectile Fragmentation

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Introduction: Explosives create and energize particles that act as projectiles prone to further fragmentation in the body. These fragments may result in secondary injuries. This has been repeatedly described in the orthopedic and neurosurgical literature. In this paper we demonstrate that such a process is also possible for abdominal injuries during or after fascial penetration.
Material–method: In all abdominal wall injuries, despite negative physical examination of conscious and alert patients we used local wound exploration as a standard approach. Finding a full thickness fascial defect, we assumed an intraperitoneal injury and performed laparotomy.
Result: Using this method, we found hollow organ injuries in 7 of 8 (87.5%) patients. In 3 (37.5%) of these patients at laparotomy, we found multiple, projectile induced injuries in a sprayed distribution. These injuries were found far from the trajectory, in the absence of bone fragmentation. The mean number of peritoneal defects was 1.7, however, for each peritoneal defect, we found an average of 6.8 intraabdominal injuries when through and through injuries were excluded.
Conclusion: Local wound exploration is an accurate indicator of possible intraabdominal injuries. Although fragments of projectiles would be expected to be distributed along the trajectory, meticulous exploration of abdomen is mandatory because this is not always true. Despite a single peritoneal defect, there may be multiple intraperitoneal injuries due to further fragmentation of the projectile.

328 Conservative Management of Penetrating Stab Wounds

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Introduction and objectives: Nonoperative management of penetrating abdominal stab wounds has been established as standard care recently. It decreased negative laparotomy rate without any increase in morbidity and mortality. In this study we evaluated the outcome of patients managed due to penetrating abdominal stab wounds.
Materials–methods: Between 2000 and 2008, 73 patients were treated in the emergency unit because of penetrating abdominal stab wounds. Patients with signs of hypovolemic shock and/or acute abdomen underwent immediate laparotomy. Hemodynamically stable patients were selected for nonoperative management. During nonoperative management, patients who developed signs of acute abdomen underwent either laparoscopy or laparotomy. The demographic data, rate of laparotomy, length of hospital stay, the injured organes and outcome of the surgery were noted.
Results: There were 65 men and 8 women. Mean age was 33 years (15–92 year). Mean hospital stay was 3.9 days (1–12 day). Twenty seven patients underwent immediate laparotomy. Eighteen patients had hollow organ injuries. In two patients the sources of bleeding were from rectus abdominis muscle. Forty three patients were managed nonoperatively. Three patients with left upper quadrant stab wounds underwent diagnostic laparoscopy. No pathology was detected. During conservative management, none of the patients underwent either laparoscopy or laparotomy. In two patients who underwent laparotomy postoperative ileus developed. Patients were managed conservatively.
Conclusions: Conservative management of penetrating stab wound decreased the negative laparotomy rate. All hemodynamically stable patients are candidates of conservative management.

329 Acute Severe Pancreatitis – Late Complication After Complex Abdominal Trauma. An Unusual Case Report

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Introduction: Severe pancreatitis is mentioned as an abdominal trauma complication in approximately 8% cases, often with severe evolution in the posttraumatic period.
Method: In our case this complication occurred with a delay of 14 years from a complex polytrauma. The patient was a car crush victim in his early 16. He suffered a thoracic trauma with haemothorax, an abdominal trauma involving the liver, spleen and pancreas. The evolution was difficult with a long period of coma, MSOF, multiple surgical interventions with reconstruction of the abdominal wall with sustitution mesh. The patient was discharged after 6 months from the admission with remaining blood hypertension and glomerulonephrytis, which led to a very balanced life. After 14 years, he is readmitted with severe pancreatitis associated with renal failure, confirmed by CT, MRI and biological tests. After 1 week in Intensive Care Unit, the patient develops a giant retroperitoneal haematoma, 20/15 cm, which required surgical intervention.
Results: The outcome was slowly favorable with pancreatic fistula which closed spontaneously after 4 months.
Conclusions: Despite the long period of time between the two events, the patient's history and thorough medical investigations he was submitted to, did not reveal another possible case.

330 Intestinal Obstruction as a Late Complication of Blunt Abdominal Trauma

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Intraabdominal injury due to blunt abdominal trauma usually presents acutely. In the absence of peritoneal irritation findings or shock the patients may be treated conservatively. Delayed small bowel obstruction after blunt trauma is very rare clinical entity. It may be caused by subclinical bowel perforation, localized bowel ischemia or mesenteric vascular injury. We present a 34 years old man of blunt abdominal trauma that was treated nonoperatively. Despite the success medical treatment, 2 months later, the patient presented with abdominal pain and vomiting.
The radiologic studies suggested a mechanical intestinal obstruction. At the operation a conglomerated terminal ileal segment causing obstruction was found and the patient is treated by a resection and primary anastomosis. The operative findings may be explained by a subclinical perforation at the time of the trauma.
This kind of complication should be suspected in patients with post traumatic patients which presents with signs of intestinal obstruction in weeks after the trauma.

331 Nursing Management in Renal Trauma

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With traumatic injury, kidneys can be thrust against the lower ribs, resulting in contusion and rupture. Up to 80% of patients with renal trauma have associated injuries of other internal organs. Injuries may be blunt (automobile and motorcycle crashes, falls) or penetrating (gunshot wounds). Approximately 80–90% of all renal trauma cases are blunt trauma injuries; penetrating renal trauma accounts for the remaining 10–20%. Blunt renal trauma is classified into one of four groups which are contusion, minör laceration, majör laceration and vascular injury.

- With a contusion of kidney, healing may take place with conservative measures (i.e. bed rest)
- If minör laceration is present, the patient is hospitalized and kept on bed rest until the hematuria clears.
- Depending on the patient's condition and the nature of the injury, major lacerations may be treated through surgical intervention or conservatively (bed rest, no surgery)
- Vascular injuries require immediate exploratory surgery because of the high incidence of involvement of other organ systems and the serious complications that may result if these injuries are untreated. The patient is often in shock and requires aggressive fluid resuscitation.

For the management of patient with renal trauma, nursing diagnoses are:

- Inefective tissue perfusion (renal) related to interruption of arterial flow
- Anxiety related to physical injury
- Acute pain related to physical injury
- Impaired urinary elimination related to renal damage and shock
- Risk for infection related to altered immune function

332 Nonoperative Management of Penetrating Abdominal Buckshot Wounds: report of Two Cases

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Background: Penetrating abdominal buckshot wounds are believed to necessitate emergent laparotomy to rule out any hollow or solid organ injury. Recently, nonoperative management has been suggested in selected patients. This paper aims to present two cases with penetrating abdominal buckshot wounds, treated nonoperatively.
Materials–methods: A chart review has been conducted for patients operated in our institution for abdominal buckshot wounds. Demographics, evaluation tools and follow-up parameters has been analyzed and documented.
Results: A total number of two patients (both male; 23 and 16 years old) were found. Both were shot on their left thoracolumbar regions. Left and bilateral chest tubes were necessitated after initial examinations, but both denied any abdominal tenderness, although computed tomography showed multiple abdominally located pellets. Gastroscopy (n = 1), echocardiography (n = 1), intravenous pyelography (n = 1) were necessitated for further evaluation, but showed no abnormality. The patients were followed up with routine abdominal examinations, vital signs and routine laboratory tests and

discharged from the hospital on days 4 and 5 after uneventful recovery periods.
Discussion: Patients with penetrating abdominal buckshot wounds may be followed with nonoperative management instead of routine laparotomy.

333 Diagnostic Laparoscopy; retrospective Analysis of 64 Acute Abdomen and Abdominal Trauma Patients

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Background: Diagnostic laparoscopy is minimally invasive surgery not only facilitates the diagnosis of intra-abdominal disease but also makes therapeutic intervention possible. Exploratory laparotomies in trauma and acute abdominal pain patients are associated with a high negative laparotomy rate and significant procedure-related morbidity.
Aim: We aimed to evaluate the outcome of patients who underwent diagnostic laparoscopy due to trauma or acute abdominal pain.
Method: Age, sex, confirmed disease after operation, conversion to laparotomy and hospital stay of 64 patients who underwent diagnostic laparoscopy between January 2007 and January 2008 due to trauma or acute abdominal pain were collected retrospectively.
Results: There were 31 female (48.4%) and 33 male (51.6%), total 64 patients with a mean age of 44.41 ± 21.558 years. There were five negative laparoscopies (7.8%). 25 patients (42.2%) could be diagnosed and treated laparoscopically. Number of conversion to laparotomy was 32 (50%). Mean hospital stay for the patients was 6.75 ± 6.449 days. Type of underlying disease, conversion to laparotomy and higher ages prolonged hospital stay ($p < 0.05$).
Conclusion: Half of the patients treated successfully by laparoscopy. Conversion to laparotomy seems to be altering hospital stay, but we think the main cause of this issue is the underlying disease.

334 Factors Affecting the Morbidity in Patients with Firearm Shots Involving Abdomen

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Introduction: Gunshot wounds involving abdomen has high morbidity and mortality rate. Injuries of internal organs develop up to 90% of them. Laparotomy is inevitable in patients with unstable hemodynamic status and signs of intraabdominal organ lacerations. The aim of their study is to investigate the effectiveness of Penetrating Abdominal Trauma Index (PATI).
Patients and method: The medical records of 25 patients with firearm shots to the abdomen between 2003 and 2008 period were analyzed retrospectively. Age, gender, number of effected organs, time period between incident and operation, surgical procedure, PATI, morbidity and mortality rates are investigated.
Results: Injuries were due to case shots in 2 and rifle shots in 23 of patients. with mean age of 22.1 (20–35). Nine of them had a single, 14 patients had multiple organ injuries. Two patients had no organ penetration. The most common sites were small bowels and colon in 14 patients. Other organ injuries were; spleen and kidney in three, liver in two, stomach, gall bladder, bladder and main vascular structures in each one patient.
Discussion: There was no mortality which was due to the triage of unstable patients to other closer hospitals after the first evaluation on incident location. More stable patients were admitted to our center. Four patients who had abscess formation needed repeated surgical interventions had PATI over 25. No major complications were developed with lower PATI than 25. The most important factor affecting morbidity is the number of effected abdominal organs. PATI is an effective way of evaluation.
Author to editor: Saygılar sunarım. Op.Dr.Serhat Oğuz Van Asker Hastanesi Baştabibi

335 Evaluation of ATI, CISS And Flint Scores in Colon Injuries

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Objective: Treatment procedures in cases who were operated due to colon injuries were investigated in this study.
Material–methods: Thirty-two cases who were operated due to colon injuries in our clinic between 2002 and 2008 were investigated retrospectively. Cases were investigated with regard to age, sex, type of trauma, hemodynamic condition, interval between injury and surgery, additional organ injury, transfusion volume, injury site and severity, faecal contamination, surgical procedures, postoperational complications and mortality and factors affecting morbidity and mortality were determined. Colonic Injury Severity Scale (CISS), Abdominal Trauma Index (ATI) and Flint classification were used for evaluating severity of colon injury,severity of additional organ injury and faecal contamination, respectively. Systolic blood pressure less than 80 mmHg on admission was referred to as ''shock''.
Results: Males comprised 28 out of 32 cases and mean age was 35.7 (range:17–72) years. Twenty-five cases were injured due to penetrating trauma and left colon injury was the most common (12 cases) type of injury. Additional intraabdominal organ injury and extraabdominal injury were observed in 21 and 6 cases, respectively. Mean interval between injury and surgery was 2.7 (range 0.5–8) h. Fifteen cases received blood transfusion. Five cases had shock on admission. Seven cases received stoma surgery while all cases with Flint grade more than III or ATI score higher than 25 received colostomy. Only cases with high CISS score received resection and anastomosis surgery. Complications were observed in 11 cases while mortality occurred in two cases due to hemorrhagic shock.
Conclusion: Routine primary repair cannot always be performed in colon injuries since many factors affect the decision for type of surgery. Primary repair may be performed safely in hemodynamically-stable cases with ATI score less than 25 and Flint grade I–II.
Editor to self: kabul sonrasi iptal. pelin mail sonra tekrar kabul. pelin mail

336 Diaphragmatic Rupture: Still a Challenging Diagnostic

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A 73-year-old man was referred to our department, after a vehicle accident, with multiple bone fractures. The admission chest X-ray was considered normal. He was admitted to ward for pain control. At day 2 a second chest X-ray was obtained because progressive respiratory distress, a left diaphragmatic rupture was diagnosed. Laparatomy was performed, and the left diaphragmatic defect directly sutured. The diagnosis was challenging because the rupture only became clinically evident later after the admission. A high index of suspicion should always be observed for missed or delayed diaphragmatic ruptures, only 50 to 66% being diagnosed at admission.

ACUTE CARE SURGERY

337 Seat Belt Syndrome Associated With an Isolated Rectal Injury

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Seat belt syndrome is defined as a seatbelt sign associated with lumber spine fracture and bowel perforation. An isolated rectal perforation due to seatbelt syndrome is extremely rare. There is only one case reported in the Danish literature and non in the English literature. Hereby, we report a 48-years old male who was a front seat restrained passenger involved in a head-on collision. He has presented with lower abdominal and back pain. Seat belt mark was seen transversely across the lower abdomen. Initial trauma CT scan was normal except for burst fracture of L5 vertebra which was operated by internal fixation on the same day of admission. The patient continued to have abdominal pain and distention which became clear on the third day. Repeated abdominal CT scan on the third day has shown free intraperitoneal air. Exploratory laparotomy has revealed a perforation of the proximal part of the rectum below the recto sigmoid junction. Hartmann's procedure was performed with end colostomy. The abdomen was left open and temporarily closed using saline IV bags sandwiched between 2 layers of Steri-Drape. Peritoneal toileting was performed four times under general anesthesia with gradual closure of the abdominal fascia over a period of 2 weeks. Postoperatively, the patient had urinary retention due to a quada equina injury although he could walk. The presence of seat belt sign and a lumber fracture should rise to the possibility of a bowel injury.

Author to editor: Seat belt syndrome is defined as a seatbelt sign associated with lumber spine fracture and bowel perforation. An isolated rectal perforation due to seatbelt syndrome is extremely rare. There is only one case reported in the Danish literature and non in the English literature. Hereby, we report such a case.

338 Meckel'S Diverticulum and Acute Appendicitises

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Introduction and Aims: Meckel's diverticulum results from incomplete degeneration of omphalomesenteric duct. It is usually diagnosed incidentally during appendectomy; however, sometimes perforation or bleeding may lead the surgeon to the diagnosis. We aimed to investigate the frequency of Meckel's diverticulum during emergency laparotomy performed for acute appendicitis and clinical and pathological characteristics of the patients with Meckel's diverticulitis and appendicitis.

Material–method: The material consisted of 1,372 patients who admitted to our hospital and treated by appendectomy during a 10-year interval between the years 1998 and 2008. Of these patients 824 (60,05%) were male and remaining 548 (39,95%) were female. All patients were investigated for Meckel's diverticulum weather they have acute appendicitis or not.

Results: Meckel's diverticulum was found during 20 out of 1,372 appendectomies (0.01%). Of the cases, 16 were asymptomatic but four patients were symptomatic with inflamed diverticulitis. Of these four patients two have normal appendix and other two have secondary appendicitis due to Meckel's diverticulitis. All four symptomatic cases were treated by diverticulectomy and appendectomy. All 16 asymptomatic cases were treated by appendectomy alone. No mortality or major morbidity was detected.

Conclusions: Despite of its rarity (0.01% in our appendectomy series), Meckel's diverticulum must be searched weather the appendix is normal or inflamed.

339 Cocaine Traveling in the Bowels: Body Packer Syndrome

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Introduction: Illegal drug smuggling is a widespread problem. Drug packs carried inside body cavities may leak its contents and be dissolved inside the body and signs of toxicity (aka. Body Packer Syndrome) become evident. This case was reported to represent the very first proven patient in Turkey.

Case: A 36 year-old man were brought in the emergency department (ED) from the airport because of severe tremor, palpitation, restlessness associated with hypertension and tachycardia. The patient was cooperative and oriented. On examination, his blood pressure (BP) was 210/150 mmHg, pulse rate 124/bpm, whereas other systems were unremarkable. He was put on cardiac monitor and infusion of glycerol trinitrate was instituted (10 mcg/min). Urinary toxicologic screen was positive for cocaine and benzodiazepine. After admission to the ED he complained of epigastric distension and abdominal pain and admitted that he had swallowed cocaine packs. His abdominal X-rays showed gas-fluid levels and opaque round-shaped mass images. A nasogastric catheter was inserted and gastric contents (approximately 1,500 mL) were drained. He was consulted with surgery clinic with a diagnosis of an ileus due to swallowed packs. He was hospitalized in the surgical ward. After supportive treatment and repeated enema applications he excreted 104 cocaine packs in 2 days. He was discharged following clinical stabilization and abdominal X-rays were repeatedly normal.

Conclusion: Toxicologic analysis must be employed in patients who are suspected to have intoxication, to identify life-threatening drugs and vasoactive substances. Advanced imaging methods must be exercised to exclude bowel obstruction in these patients.

340 Increasing Numbers of Penetrating Cardiac Trauma in Our New Center

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Objectives: Our aim is to express the importance of emergency diagnosis and surgical approach in penetrating cardiac trauma patients.
Methods: Koşuyolu Heart and Research Hospital has moved to its new location in Cevizli Kartal in June 2005. Due to the close location to the main roads of the city, number of trauma cases has increased tremendously. We have retrospectively examined our penetrating cardiac trauma cases between June 2005 and December 2008.
Results: 25 trauma cases were admitted to our clinic with penetrating cardiac trauma. 25 of them were operated on emergency bases. One (4%) had a gunshot wound while the other 24 (96%) had stab wounds. 5 were female (20%) and 20 were male (80%). Patients were aged 25.6 ± 9.2 (12–49) on average. Telecardiography and transthoracic echocardiography were used for diagnosis. Surgical approaches were median sternotomy in 19 and left anterolateral thoracotomy in 6 cases. Right ventricle was damaged in 16, left ventricle in 8 and pulmonary artery in 1. Additionally seven patients had lung injury, one had brachiocephalic vein and one had coronary artery injuries. One patient was re-explored for bleeding. There were two mortalities (8%) postoperatively.
Conclusion: Rapid transfer to the emergency department, accurate and quick diagnosis and aggressive surgical approach will increase survival in penetrating cardiac trauma.

341 Combined Surgery and Repeated Angioembolization for a Post-pancreatitis Pseudoaneurysm

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Background: Pseudoaneurysm is a well recognized complication of pancreatitis. Angioembolization is considered to be the first option of treatment. To our knowledge, the case we hereby report is the first one with successful re-angioembolization.
Case: A 41-year-old man, with AIDS, history of CNS toxoplasmosis, chronic pancreatitis with pseudocyst secondary to alcohol abuse, was hospitalized for pneumonia. During his hospitalization, he developed abdominal pain and hypotension. After resuscitation, CT angiogram of the abdomen revealed active bleeding into a pseudo-aneurysm, near the head of the pancreas, measuring 2.7 x 1.8 cm and arising from superior and inferior pancreaticoduodenal arteries. This was confirmed by angiogram. Angioembolization distal and proximal to the bleeding area was performed using coils. Eight days later, the patient became hypotensive and dropped his hemoglobin again. He was taken for an emergency laparotomy which revealed a 5 cm pancreatic pseudocyst with hemorrhage. The pseudocyst was opened through the medial wall of the duodenum, ligation of the bleeding intracystic vessels, and cysto-doudenostomy were performed. His postoperative course was uneventful and he was discharged home on postoperative day 16. Five days later he was readmitted with hematemsis and anemia. Celiac angiogram revealed bleeding from the gastrodoudenal artery which was embolized. He died 5 months later due to HIV nephropathy without any evidence of re-bleeding.
Conclusion: Angioembolization is useful in the management of pancreatic pseudocyst with hemorrhage and can be repeated if needed.

342 The Outcome of Hospitalized Patients with Unspecified Acute Abdominal Pain Following Initial Clinical and Laboratory Evaluation

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Objectives: Any sort of discomfort in the abdominal cavity that lasts less than 1 week is defined as acute abdominal pain. The purpose of the study was to evaluate the outcome of hospitalized patients with unspecified acute abdominal pain following initial clinical and laboratory evaluation.
Method: From January 2008 to December 2008, 114 patients with acute unspecified abdominal pain were admitted to surgery department. Gender, age, definite diagnosis, time from hospitalization to surgery and hospital length of stay were retrospectively reviewed.
Results: Fifty-six of the patients with acute unspecified abdominal pain were females (49%) and 58 were males (51%), median age was 34 years (range 16–82). While definite diagnosis was confirmed in 70 patients (62%), the initial diagnosis was not changed in 44 patients (38%). Distribution of new diagnoses were appendicitis (n = 24), gastroenteritis (n = 7), genitourinary disorder (n = 17), Familial Mediterranean Fever (n = 6), inflammatory bowel disease (n = 2), mesenteric adenitis (n = 2), peptic ulcus perforation (n = 1), constipation (n = 1), diverticular disease (n = 1), pneumatosis intestinalis (n = 1), hepatobilier disease (n = 7) and intra abdominal tumor (n = 1). Depending on the cause of abdominal discomfort, 28 patients (25%) required surgical intervention. Median time from hospitalization to surgery was 20 h (range 4–55). Median hospital length of stay was 3 days (range 1–15).
Conclusions: Although clinical observation, complete laboratory and radiological investigations were done, 38% of the patients admitted with unspecified acute abdominal pain were discharged without resolved etiology.

343 Temporary Biosynthetic Skin Substitude after Burn Wound Excision

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The use of temporary skin substitutes (TSS) is a useful technique in the treatment of full-and partial thickness burn wounds affecting a large body surface area. Early excision of the eschar is mandatory. But if we cannot find sufficient donor site, TSS using seems to best choice. The ideal TSS must be has some properties: adherence, control of water loss, safety, flexibility, stability on wound surfaces, bacterial barrier, and ease of application, ease storage and cost effectiveness.
Case report: A 2-year-old girl was admitted to our burn center with deep flame burns affecting face, thorax, upper and lower extremity (45%). She underwent an early burn excision on day 4 post-burn day. The whole area excised with hydrosurgically was covered with Biobrane® and compressive dressing. Seven days after we removed Biobrane from the upper and lower extremities and grafted the wound bed. Face healed spontaneously under the TSS and TSS covering the thorax was rest intact. After 10 days thoracic TSS was removed and grafted and we covered the thorax with Biobrane® over the grafts again. After 10 days a second grafting was needed. Patient was discharged from the hospital 56th post-burn day. The use of Biobrane® as a TSS after burn wound excision was satisfactory, because it enabled us to delay auto grafting until we were sure of good conditions in the wound bed. Also it proved to be a good dressing over the meshed autografts. It reduces the healing time and improved the quality of grafts.

344 Late Posttraumatic Closed Intestinal Perforation after Blunt Injury

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Backgraound: Pediatric multiple trauma victims present a unique set of problems to the emergency physican, pediatrican and surgeon. Children seldom sustain lethal injury; however, delayed recognition and inappropriate management of the common problems encountered in the pediatric trauma patient can lead to poor outcome.
Case: A 7 years old boy admitted to the emergency service complaining of abdominal pain, vomiting and unable to defecate for a week. From his history, we learned that he was a victim of a traffic accident 15 days ago: he had jumped down from a horse cart and one of it is wheels had passed from his abdominal region. At the first administration, physical examination, laboratory tests and radiologic investigations were normal. However at the second administration the USG and abdominal CT showed large amount of free fluid and there was a thick walled cystic mass. The surgical intervention performed and closed small bowel perforation was diagnosed.
Conclusion: Blunt injuries to the small bowel and mesentery may be undetected initially in some patients. The diagnosis is best made by a combination of clinical suspician and physical examination; abdominal CT may aid in the discovery of SBI if free fluid, thickened bowel or extraluminal air is seen.

345 Colonoscopic Perforations: two-years Experience

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Introduction: Endoscopic examination of the colon during the diagnostic or treatment purposes, perforation incidence is reported between 0.01 and 0.3%. Determination of risk factors may decrease the incidence with early recognition of the serious complications of surgery may reduce interference.
Method: We have examined retrospectively the patients in whom colon perforation appeared due to endoscopic analysis of colon carried out at endoscopy unit between January 2007 and December 2008.
Results: Total colonoscopy and rectosigmoidoscopy were applied to 7,881 patients. In 7 patients (0.088%) perforation was observed. The median age was 74.5 (66–85), M/F: 5/2. All colonoscopys were made for diagnosis; anemia in two, hemorrhodial disease in one, subileus in two, anal prolapsus in one, right colon tumor suspation in one patients. One sigmoid polypectomy was applied, diverticulosis disease of the colon in two patients, dolichocolon in one, one previous pelvic surgery were observed. Perforation zone was observed in sigmoid colon in all patients. Four patients were diagnosed in the process of colonoscopy (57.1%), 2 were diagnosed in 24–48 h (28.5%), 1 was diagnosed 5 days later. Laparotomy was applied to all patients. Perforation zones of 5 patients were fixed primarily and these 5 patients were discharged as cured. One patient who was applied to diversionary ostomy was reoperated due to abdomen collection. No mortality was observed.
Conclusion: Colonoscopic perforation is a rare, serious complication. Sigmoid colon is the location where the perforations are mostly observed. Although primary fixation is generally efficient in cases of early diagnosis, morbidity increases seriously due to late diagnosis.

346 Effect of Stomas on Morbidity and Mortality of Patients with Bogota Bag

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Aim: Bogota bag application is still a valid procedure in patients having severe pertionitis. The aim of this study is to investigate the effect of stoma bags on patients with open abdomen.
Material–Methods: The record of 34 patients with open abdomen, 20 of whom had more than 1 stoma were evaluated. Sterile plastic serum sheets were used as bogota bag. Bags were sutured to the skin with prolen continuously and changed every 24 h. In three cases some other materials were used instead after Bogota bag change.
Results: Of 34 patients, 18 were male and 16 female. Mean age was 64.1 for females (range 24–78) and 65 for males (range 32–86). Bogota bags were changed at least 2 at most 16 times. Stomas were ileostomy, jejunostomy and colostomy, the most frequent indications for Open abdomen was perforation, anastomotic leakage and intrabdominal sepsis. Infection rate and severity were high in patients

with more than one stomas. Eleven patients were discharged with planned ventral hernias. Primary abdominal closure succeeded in four patients. Fasciitis due to severe peritonitis and stomas prevented primary closure. Eighteen of 34 patient died during treatment, 16 were discharged. Sixteen of 21 patients with more than one bag were died, five survived (Mortality 76.2%).
Conclusions: Morbidity and mortality were higher in patients with more than one stoma than patients with single stoma. Second stoma has a negative effect on primary fascial closure. Fasciitis due to severe peritonitis also prevents fascial closure.

347 Acute Diaphragmatic Hernia after Minimally Invasive Esophagectomy

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Background: Diaphragmatic hernia after open esophagectomy is a rare complication. We report the first case, to the best of our knowledge, of acute diaphragmatic hernia of the transverse colon to the right chest after minimally invasive esophagectomy (MIE).
Case: A 53-year-old female diagnosed with locally advanced esophageal squamous cell carcinoma was initially treated with neoadjuvant chemo-radiation therapy. She subsequently underwent total MIE with cervical esophago-gastrostomy. Postoperative course was uneventful. Postoperative barium swallow showed intact gastric conduit with no leak or obstruction. She tolerated liquids and soft diet and was advanced to regular diet. On the day of planned discharge, she developed acute respiratory distress and vomited twice. CT scan of the chest and abdomen revealed a diaphragmatic hernia with a loop of transverse colon herniating into the right chest causing gastric outlet obstruction. Patient was taken to the operating room and underwent successful reduction of the acute hernia. Postoperative course was complicated by protracted ARDS.
Conclusion: Acute diaphragmatic hernia is a potential complication of MIE just as it is in conventional open esophagectomies. Adequate closure of the hiatus around the gastric conduit in MIE is crucial to avoid this potential morbidity.

348 Intraabdominal Hypertension – Diagnostic and Clinical Considerations

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Introduction and Objectives: Intraabdominal hypertension (IAH) is the first step in the appearance of the abdominal compartment syndrome (ACS).The aim of this study was to analyze intraabdominal hypertension and its consequences in developing ACS. Secondary, a comparison between clinical and intravesical evaluation of the presence of IAH was performed as others have published.
Methods: A prospective study was designed. Patients in ICU considered at risk of developing ACS were included (50 cases). Measurement of intraabdominal pressure was done by Foley method. Clinical blind assessment of IAH was performed by one of the authors. Demographic, clinical and patient major parameters were statistically analyzed.
Results: IAH is the result of various pathologies, in our study, mostly in acute pancreatitis and trauma. In 11 cases ACS was diagnosed. Although different factors concur to a very high mortality (32 cases) in IAH, the presence of ACS clearly increases mortality (8 cases). There was also a statistical difference regarding mortality among patients with surgical procedures (better survival) and those without. Clinical assessment of IAH was inaccurate (sensitivity 70%).
Conclusions: ACS has its roots in different causes of IAH, trauma and acute pancreatitis being the most frequent. Early diagnostic of IAH is essential in preventing ACS. Objective measurement of the abdominal pressure is mandatory for establishing IAH diagnostic, clinical assessment being inadequate.

349 Assessment of Disease Profile and Mortality Ratio in the Elderly Acute Abdomen Patients

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The aim of this study was to evaluate the disease profile and mortality ratio of patients presenting with acute abdomen. Four hundred fifty eight patients who underwent surgery with the diagnosis of acute abdomen were analyzed retrospectively. The effects of age, sex, American Society of Anesthesiology (ASA) class, accompany disease, admission time after the onset of the symptoms, follow up interval before the operation on mortality and length of hospital stay were evaluated. Male/female ratio was 0.72, and mean age was 72.3. Main causes were biliary system disease (34.1%), intestinal obstruction (27.1%), peptic ulcer perforation (17%) and acute appendicitis (14.4%). Median ASA class was 2 and 73.6% of the patients had at least one preexisting disease. Mortality ratio was 19.4%. ASA class, age, preexisting diseases other than malignity, period between the onset of symptoms and admission, follow-up time was significantly effective on mortality.

350 Resveratrol Attenuates Intestinal Ischemia/reperfusion Injury in Rats

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Background: Resveratrol is a strong antioxidant with antiinflammatory effects. We aimed to investigate the effects of resveratrol on oxidative injury, histopathology and bacterial translocation in induced I/R injury in rats.
Methods: 32 Female Wistar-albino rats were randomly allocated into four groups; Sham-operated group(laparotomy without I/R injury), I/R group (laparotomy plus 60 min of ischemia followed by 60 min of reperfusion), Alcohol group (only 0.5% ethyl alcohole 0.3 ml/day intraperitoneally for both 5 days before surgery and 15 min before ischemia), Resveratrol group (15 mg/kg Resveratrol intraperitoneally both 5 days before surgery and 15 min before ischemia. Intestinal tissue samples were obtained for investigation of tissue levels of malondialdehyde (MDA), nitric oxide (NO), superoxide dismutase (SOD), myeloperoxidase (MPO) and histopathologic evaluation Bacteriological translocation (BT) in mesenteric lymph node (MLN), liver and spleen was also studied.
Results: Resveratrol significantly decreased MDA, NO and MPO levels in I/R injury ($p < 0.001$). SOD activity of resveratrol-treated group was significantly lower than sham group and significantly higher than I/R and I/R + Alcohol groups ($p < 0.05$). Histopathologically, the median intestinal injury score in I/R and I/R + Alcohol groups was significantly higher than in sham and resveratrol-treatment groups ($p < 0.001$ and $p < 0.05$, respectively). The incidence of BT differred between the groups I/R and I/R + Alcohol in MLM, spleen and liver ($p < 0.001$). Nevertheless, the treatment with resveratrol reduced BT to MLN, spleen and liver, compared to other I/R groups ($p < 0.01$).
Conclusions: This study showed that resveratrol significantly prevented the I/R injury and BT. Further clinical studies are needed to clarify whether resrevatrol may be a useful therapeutic agent in operations where I/R injury occurs.

351 FAST Training: a Successful Story from UAE

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Background: Focused Assessment Sonography for Trauma (FAST) is useful for screening multiple trauma patients. Training and credentialing is essential for its successful clinical use. We aim to summarize our educational experience in this area.
Methods: A full day FAST Course was established by our group at UAE University at May 2004 aiming to introduce doctors who have limited knowledge of ultrasound to the basics of FAST. The course has been running for the last 5 years. It has didactic, technical, demonstration on volunteers, hands on training and interactive case analysis components.
Results: Twelve courses have been run till now (10 in UAE, one in Kuwait and one in Sweden). 216 doctors have had hands on training on the use of FAST. A median range of 20 (18–29) participants were trained in each course. 176 doctors were trained in UAE, the majority were from Al-Ain city (85). The participants were senior registrars (116), residents (33) and consultants (23). The majority were emergency physicians (80) followed by surgeons (61). As a result, FAST was successfully and smoothly introduced into our clinical practice. The demand from participants, local and overseas, was increasing which has helped in establishing The Clinical Skills Training Centre at the Faculty of Medicine and Health Sciences, UAE University (http://www.fmhs.uaeu.ac.ae/cstc).
Conclusions: Gained educational experience has made this course more focussed and smooth reaching its objectives, increased the harmony and interdisciplinary collaboration in the clinical setting, and gave the candidates a better chance of practical skills and its clinical application.

352 A Case of a Gastrointestinal Stromal Tumour With Thrombocytosis Presenting as Acute Abdomen

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Gastrointestinal stromal tumors (GISTs) represent rare neoplasms of the gastrointestinal tract. Here we describe a case with GIST and thrombocytosis presenting as an acute abdomen. Our knowledge, the co-existence of GIST and thrombocytosis has not been reported so far.
Case: A 66-year old female was admitted to the emergency room with epigastric pain and vomiting over duration of 3 days. Physical examination showed abdominal distension, rebound tenderness, and a palpable RLQ mass. The laboratory findings were, WBC:16.740/μ, PLT 574×10^{-9}/L and C-reactive protein 289.4 mg/l. A computed tomography scan of the abdomen showed conglomerate of small bowel. The abdominal exploration showed that a $6 \times 6 \times 6$ cm mass was located on small intestine. The mass was completely resected and enteroenterostomy was performed. The histological examination demonstrated whirling sheets of spindle cells which were stained positively for CD 117 (c-kit) and CD34, mitotic index > 10/50 HPF, while smooth muscle actin and vimentin were focally positive, and keratine, desmin, S-100 protein were negative. This specific immunophenotype characterized GIST. During the post operative follow up, platelets were above normal levels 400×10^{-9}/l. Therefore, bone marrow biopsy was performed. Hiperplasia in megakaryocytes were found. The patient was negative for BCR-ABL and Philadelphia chromosome.
Discussion: Here we describe a case with GIST and thrombocytosis presenting as an acute abdomen. Ten percent to 30% of these tumors are biologically aggressive; signs of malignant potential are metastases and invasion. The current treatment for localized disease is surgical resection. Co-existence of thrombocytosis and GIST has never been reported.

353 A Rare Cause of Acute Abdomen-toothpick Penetration into Gastric Antrum

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Introduction: Foreign body ingestion is commonly encountered in the emergency department. Most ingested foreign bodies that reach the stomach pass safely through the intestinal tract. If the objects are long, hard and sharp, like pins or toothpicks, the risk of perforation of the gastrointestinal wall is higher.

Case: A 56-year-old woman consulted for upper right quadrant pain. She experienced continuous abdominal pain for 2 days. The body temperature was 36.80°C, blood pressure was 124/70 mmHg. Laboratory tests showed no abnormality except white blood cell count of 11600/μl.Plain abdominal X-ray and CT did not show any abnormal findings including free air (Fig.1). Endoscopic examination of the stomach revealed an ingested toothpick protruding from the prepyloric antrum (Fig.2). The toothpick was deeply fixed into the antral wall. The whole toothpick 2.2 cm in length was removed using a loop without damage to the gastrointestinal wall, bleeding or any other complication. After endoscopic removal of the toothpick, her epigastralgia resolved. On the second hospital day, the patient was asymptomatic. Medical therapy with proton pump inhibitor was stopped and she was discharged on the third hospital day.
Conclusion: Accidental ingestion of foreign bodies is common and in general harmless. A perforation of the gastrointestinal tract by ingested foreign bodies is rare, occurring in less than 1% of ingested bodies like toothpicks are involved in less than 0.1%. Occasionally, the passage of the swallowed item may stop at one of the anatomic bottlenecks of the gastrointestinal tract, which may lead to perforations that may require operative or endoscopic interventions.

354 The Effect of Transfer of Social Insurance Foundation (SSK) to the Ministry of Health and Working Capital Additional Payment to the Medical Doctors on Emergency Operations and Patient Profile

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Objective: In this study we investigated whether there was a change in number and profile of emergency operations after the transfer of Social Insurance Foundation (SSK) hospitals to the Ministry of Health in 2005 which allowed patients that are affiliated with the Social Insurance Foundation to benefit from all government hospitals, and working capital additional payment to the medical doctors.
Method: We compared the number and causes of emergency operations between two groups. The operation periods were 01.01.2003–12.31.2004 and 01.01.2007–12.31.2008, for the first and second group, respectively.
Results: We analyzed the number, causes and rates of emergency operations. The total number of emergency operations was 1,147 and 1,021, for the first and second groups, respectively. We observed an 11% decrease in number of emergency operations for the second group. We also observed that the cause of majority (70% for the first group, 71% for the second) of the emergency operations was acute abdomen and the rate between the groups did not change. Lower extremity amputation and strangulation hernia operations decreased 51 and 22%, respectively. The number of operations which are caused by ileus and acute cholecystitis increased 25 and 74%, respectively.
Conclusions: Difference in distribution of emergency operations between two groups was statistically insignificant. However, we observed both an increase and a decrease in small numbers of some subgroups. It is believed that this is related to the change in patient profile and technological improvements in surgery.

355 Protective Effects of Propofol on Peritoneal Adhesions in Cecal Ligation and Puncture Model

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Aim: We hypothesized that one of the most widely used anesthetic agents, propofol, may reduce inflammatory processes, and organ injury induced with cecal and ligation puncture
Study design: Bacterial peritonitis was induced in 18 rats by cecal ligation and puncture. The rats were randomly assigned to three groups. Group 1 (n = 6) received propofol, group 2 (n = 6) received intralipid, group 3 (n = 6) was control, which did not receive any injection. All animals were killed 14 days later so we could assess the adhesion score. Tissue antioxidant levels were measured in 1-g tissue samples taken from the abdominal wall.
Results: The adhesion score was significantly lower in the propofol group than in the control group ($P < 0.05$). The catalase levels were higher in the intralipid and control groups than the propofol groups.
Conclusions: Intraperitoneal propofol reduced the formation of postoperative intra-abdominal adhesions without compromising wound healing in this bacterial peritonitis rat model. Propofol also decreased the oxidative stress during peritonitis

356 Computed Tomography has a Significant Role in Hollow Viscus and Mesenteric Injuries after Blunt Abdominal Trauma

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Introduction: CT scans have become invaluable in the management of patients with blunt abdominal trauma. The main goal of this study was to verify the CT findings to the surgical observation of HVI and MI in patients after blunt abdominal trauma.
Methods: CT scans and surgical findings of all patients with HVI and MI who underwent CT scans pre-operatively from from January 2003 to January 2008 were included in our study. All scans were performed with intravenous contrast using a 64-slice CT scanner. Some of the typical CT findings recorded included extra-luminal air and mesenteric haemorrhage, while some of the surgical findings included haemoperitoneum, perforation of hollow viscus and mesenteric haemorrhage.
Results: 31 patients formed the study group. The median age was 40 (range 22–65) years, with a significant male (83.9%) predominance. Vehicular-related incidents accounted for 67.7% of the injuries and the median Injury Severity Score was 13 (4–50). The 2 commonest findings on CT scans were free fluid without significant solid organ injuries (93.5%) and extra-luminal gas (35.5%). During exploratory laparotomy, perforation of hollow viscus (51.6%) occurred much more frequent than suspected by the CT findings of extra-luminal

gas. Other notable findings included haemoperitoneum (64.5%), mesenteric tears (67.7%) and gangrenous or ischaemic bowel (35.5%). All our patients with significant HVI and MI have abnormal CT scan findings prior to surgery.
Conclusion: Significant free fluid without solid organ injuries is one major indication to consider exploratory laparotomy. All our patients with significant HVI and MI will had abnormal CT findings.
Author to editor: No clear consensus have been reached regarding the role of CT scans in the management of HVI and MI. Our study supported the usage of CT scans in patients who are haemodynamically stable after blunt abdominal trauma as all patients with significant HVI and MI had associated CT findings pre-operatively.

357 The Role of Magnetic Resonance Cholangiopancreatography in Patients with Acute Gallstone Pancreatitis

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Introduction: This study was undertaken to assess the accuracy of magnetic resonance cholangiopancreatography (MRCP) in predicting the presence or absence of common bile duct stones in patients with acute gallstone pancreatitis.
Methods: Patients presenting with acute gallstone pancreatitis from January 2002 to December 2004 were reviewed to assess the impact of the MRCP. The indication for MRCP was suspected common bile duct (CBD) stones in the absence of biliary sepsis.
Results: In 24 of the 65 patients with gallstone pancreatitis, MRCP was performed. If positive for common CBD stones, endoscopic retrograde cholangiopancreatography (ERCP) with endoscopic sphincterotomy was performed. MRCP findings were correlated with subsequent ERCP or clinical follow-up. Twelve patients were found to have CBD stones confirmed by ERCP. MRCP correctly predicted the presence of CBD stones in 11 of 12 patients (true positive) and failed to detect CBD stones in one patient (false negative) who was not identified was noted to have a small stone at ERCP. MRCP correctly predicted the absence of CBD stones in 12 out of 13 (true negative) and incorrectly predicted a CBD stone in 1 patient who subsequently had a normal ERCP. Overall, MRCP had a sensitivity of 91.7%, a specificity of 92.3%, positive predictive value 91.7%, negative predictive value 92.3%, and overall accuracy 92%.
Conclusions: MRCP is highly accurate in the preoperative detection of CBD stones. MRCP is an accurate modality for imaging the axial biliary tree in patients with AGP. Selective use of MRCP reduces the need for ERCP.

358 Adhesive Small Bowel Obstruction. Results of 222 Cases

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Introduction: Although postoperative adhesion ileus is the most common cause bowel obstruction in adults. There is debate about the optimal treatment surgical or nonsurgical management. The aim of this study, the evaluated of the usefulness of the nonoperative (conservative) therapy.
Material: We studied 222 patients who had treated in our Department. The diagnosis of small bowel obstruction was based on a history of previous laparotomy, clinical, radiological, and computerized tomography findings. In the choises of treatment method we benefit from signs of strangulation, tomography findings and experience of surgeon.
Results: Initial examination, 36 of the 222 patients who had suspected strangulation obstruction, by urgent surgery. 13 of the 36 cases had incomplete and 23 complete obstructions. In this group, peroperatively, 15(41.7%) strangulated intestine and 9 gangrenouse bowels were observed.In this group mortality rate was 2.8%. Conservative therapy applied in 186 patients who had 145 (78.1%) incomplete and 41 (21.9%) complete obstructions. Nonoperative therapy was successfull in 144 (77.4%) of 186 cases.Success of this method was 86.1% in incomplete and 47.6% in complete obstructions.The morbidity of this technique is null. But duration of this management one patient died due to myocardial infarction.Nonoperative therapy failured 42 cases. These 42 cases underwent delayed surgery. Two of the 42 delayed surgery died postoperative period.
Conclusion: Initial examination, the patient who had suspected strangulation, should be treated surgically. Other patients who had complete or incomplete obstruction managed with nonoperative (conservative) therapy. This therapy can be successfull up to 76% of managed cases.

359 Intestinal Intussusception in Pregnancy: role of Abdominal Ultrasonography

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Intestinal obstruction due to intussusception in pregnancy is extremely rare. Symptoms of intussusception in adults are nonspecific and diagnosis is difficult. A 35-year old woman gravid 4 para 3 presented at 16 weeks of gestation with acute abdominal pain. Physical examination revealed significant paraumbilical abdominal pain with a tender mass extending from umbilicus to left upper quadrant. US examination disclosed an abdominal mass of 53×44 mm in the left upper quadrant with anechoic center and hyperechoic area surrounding it and outermost hypoechoic ring like layer. In view of the clinical findings and the US evidence of intestinal intussusception, laparotomy was performed. Abdominal exploration revealed jejunojejunal intussusception and segmental intestinal resection and end-to-end anastomosis was performed. In conclusion, an open laparotomy is always difficult to decide during pregnancy and the US evidence of bowel intussusception might have strengthened the decision of surgery in patients without obvious obstructive symptomology.
Author to editor: This case report may benefit for diagnosis of intestinal intussusception which is extremely rare.

360 Venous Air Embolism During Laparoscopic Cholecystectomy

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Vascular air embolism is a potentially life-threatening event that is rarely encountered in the operating room. A 58-year-old man was admitted to our hospital with the diagnosis of chronic calculous cholecystitis. The patient was scheduled for laparoscopic cholecystectomy. Installation of pneumoperitoneum through Veress needle inserted in the umbilicus was achieved. An intraabdominal pressure of 13 cmH_2O was established in equilibrium. Approximately, 20 min after the onset of the operation, a sudden decrease in end-tidal carbon dioxide from 32 to 11 mmHg was noticed. Soon after, both systolic arterial pressure and heart rate decreased dramatically. Arterial blood gas measurements showed that pCO_2 was 41 mmHg at that moment. Surgery and insufflation of gas was stopped, ephedrine 5 mg was given intravenously and ventilation with 100% O_2 was started. Trendelenburg position was achieved immediately. A catheter was introduced through the right juguler vein to the right atrium rapidly and 3–4 ml gas bubble was withdrawn. Soon, hemodynamic measures were recovered. Since substantial amount of blood in the peritoneum was noticed, conversion to laparotomy with subcostal incision was performed. At exploration, through and through tear of 3 mm in inferior vena cava was detected. The defect was sutured with 6/0 polypropylene. Anesthesiologist and surgeon must be aware of this dangerous complication. The emphasis is given to the prevention and prompt recognition of this event to the use of available tools in the management of cardiovascular complications.

361 Delayed Post-traumatic Hemothorax

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Introduction: Intrathoracic bleeding following blunt chest trauma usually occurs acutely following injury. When delayed, it is unusual for intrathoracic bleeding to go unrecognized for more than 2–3 days. Recent experience with several patients with delayed hemothorax confirm several features in common. The following case is illustrative.
Methods: A 38 year old man presented with left sided chest pain after a fall at home. Chest X-ray demonstrated fractures of the left 10th and 11th ribs. His hemoglobin was 15 grams, coagulations studies were normal and no hemothorax was evident. He was discharged the next day. Twelve days later, he presented with increasing chest pain and tachypnea. Chest X-ray showed near total opacification of the left hemithorax. Computed tomography (CT) confirmed a massive effusion and left lung collapse. Tube thoracostomy returned 1,300 ccs of blood. Hemoglobin was 11 g. His chest tube continued to drain for several days, then stopped. Follow-up CT showed residual hemothorax with compression of the left lower lung and multiple atelectatic bands. Miminally invasive thoracoscopy was effective in removing residual clot and re-expanding the lung.
Conclusions: Delayed hemothorax is uncommon but reduces the likelihood of successful management by tube thoracostomy alone. Early minimally invasive thoracoscopy should follow persistent chest tube drainage or CT-confirmed residual hemothorax.

Author to editor: This report is complimented by excellent visuals, lending it to effective poster display.

362 Humeral Shaft Fractures: Treatment with a Reamed Intramedullary Locking Nail

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The purpose of this investigation was to document the clinical outcome after intramedullary nailing of humeral shaft fractures. Between 2005 and 2007, 25 acute humeral shaft fractures were treated by humeral locked nailing. The mean age of 25 patients (14 men, 11 women) was 55.9 years. The trauma mechanisms were motor-vehicle accidents (17 cases) and falls from height (8 patients). 9 fractures were in the proximal third and 16 fractures were in the middle third. The operation time, time to union, hospital stay, union rate complications and functional recovery of shoulder were recorded. The mean follow-up was 18.5 months. The operation time averaged 72 min. The hospital stay averaged 7.2 days. Fracture union was achieved in 23 cases and the average time to union was 8.2 weeks. Two fractures had nonunion and required additional operations. Two proximal locking screws backed out and caused shoulder pain and removed under local anesthesia. There was a fracture at the distal end of the nail after the patient fell down six weeks after the operation and the fracture was treated with a u-slap. No patients had complications of infection, ectopic ossification or implant failure. At the final examination 19 patients had excellent or satisfactory recovery of shoulder function. 15 shoulders had no pain, 5 shoulders were associated with minimal discomfort, 2 moderate discomforts, 1 severe pain.
We conclude that treatment of proximal and middle third humeral shaft fractures with an intramedullary nail leads to good healing and functional results, and an acceptable re-operation rate.

363 Acute Appendicitis Experience of a State Hospital

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Introduction: The aim of the study was to evaluate clinical, laboratory, surgical and histopathologic features of the patients underwent appendectomy with clinical suspicion of acute appendicitis (AA).
Material–methods: The medical records of 581 patients who underwent appendectomy for suspected AA in 2008 were evaluated retrospectively. Their clinical, laboratory, radiologic and histopathologic features were reviewed.
Results: 581 patients were performed appendectomy for presumed AA in our clinic. The patients with available medical records ($n = 521$) were enrolled in this study. Of these, 462 patients (89%) had AA and 33 patients (7%) did not. In patients with AA, all patients had abdominal pain and the other symptoms were nause (19%) and vomiting (14%). Physical examination findings were tenderness in all patients (100%), rebound (86%) and fever (22%). Leukocytosis in the patients with AA was determined in 407 patients (88%). In patients without AA, all patients had abdominal pain and the other

symptoms were nause (15%) and vomiting (12%). Physical examination findings were tenderness (100%), rebound (70%), and fever (3%). Leukocytosis in the patients without AA was determined in 20 patients (61%). The leukocyte counts of the patients with AA (15923.38 ± 14158.9) was higher than the patients without AA (11409.09 ± 4202.63/mm3), (p = 0.001). Preoperative ultrasonography were positive in 52% of the patients with AA and 61.5% of the patients without AA, respectively.
Conclusion: History and physical examination are still most important diagnostic tools. Also, laboratory findings suc as leukocyte count and neutrophil percentage and imaging studies, especially ultrasonography, may be helpful for diagnosis.

364 Endoscopic Balloon Dilatation for Pyloric Stenosis after Caustic Injury: a Case Report

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Introduction and objectives: Caustic injury of the upper gastrointestinal tract is a common clinical entity in the emergency units. Caustic pyloric stenosis (CPS) is usually found along with esophageal stricture. CPS which causes isolated gastric outlet obstruction without esophageal damage is a rare clinical entity. Hereby we report a case of isolated CPS due to hydrochloric acid ingestion, which was treated with balloon dilatation.
Case: A 59-year-old man was admitted with vomiting. His past medical history revealed that he had had accidental caustic liquid ingestion 2 months ago. On physical examination mild epigastric tenderness and abdominal distention were noted. Barium esophagogastro-duodenography showed segmental pyloric stricture 3 cm in length. In upper gastrointestinal endoscopy, edema and ulcer was observed in pylorus with no esophageal damage and the endoscope was unable to pass the pylorus. Endoscopic balloon dilatation was performed twice and the patient was given liquid diet on the post-endoscopy day 1 without any complications. The symptoms ceased and the patient is being followed uneventfully.
Conclusions: Stenosis is one of the most undesirable clinical conditions following caustic gastrointestinal injuries. CPS must be remembered during the evaluation of a patient who has gastric outlet obstruction and prior caustic injury of the upper gastrointestinal tract. Endoscopic balloon dilatation of pyloric stenosis could be an alternative to surgery.

365 Changes in Bowel Absorpsition Capacity in Obstructive Jaundice

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Aim: Obstructive jaundice, develops accompanied with high morbidity and mortality rates. The absence of bile in bowels leads to bacterial translocation and ultimately to endotoxemia and septicemia. İn our study, observing changes on bowel level during obstructive jaundice and examining its contribution to bacterial translocation have been aimed.
Material–methods: The study has been carried out at İstanbul University İstanbul Faculty of Medicine Experimental medical Research Center (DETAM) with approval of İstanbul University İstanbul Faculty of Medicine Ethical Board for Animals. Two groups out of 20 male Wistar Albino rats have been formed. One hour after injecting D-xylose to first group the rats were put to sleep (anesthetized) and specimens of tissue (liver, spleen, mesenteric lymph nodes) and blood were taken for microbiological and biochemical examinations. In the second group an obstructive jaundice has been established by ligation of common bile ducts. The same specimens were obtained after 7 days.
Findings: In the first group no proliferation on tissue and blood cultures were detected. An obstructive jaundice has been shown in biochemical investigation of blood. D-xylose was found to be 102.7 ± 33.1 mg/dl. In the second group, proliferation, of mainly *E. coli*, were detected on cultures and D-xylose was found to be 151.0 ± 37.9 mg/dl. Statistically significant increases were assigned between groups, between tissue and blood cultures ($p < 0.001$) and D-xylose values ($p < 0.007$).
Results: Detecting statistically significant increases in D-xylose levels in the second group leads to the conclusion that increases in bowel permeability plays an important role in bacterial translocation.

366 Comparison of Conventional Open and Laparoscopic Surgical Procedures in Patients with Diagnosis of Acute Appendicitis

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Objectives: To compare the results of laparoscopic appendectomies versus open appendectomies.
Method: Data collected from 363 patients with diagnosis of acute appendicitis were retrospectively studied. 320 patients underwent open appendectomy and 43 patients laparoscopic appendectomy. Gender, age, operative time, length of hospital stay and postoperative complications were evaluated.
Results: One hundred and seven of the patients were females (33%) and 213 (67%) were males in open procedure group, 24 patients were males (56%) and 19 patients were females (44%) in laparoscopic procedure group. Conversion to laparotomy during laparoscopy management of appendicitis was needed in 4 patients (9%). Average time for a laparoscopic appendectomy was 88 min, while open appendectomies lasted an average of 46 min ($p < 0.05$). Statistically there was no significant difference regarding hospital stay average between groups; 61 h for open procedure and 62.5 h for laparoscopic procedure ($p = 0.567$). Totally 32 patients had postoperative complications: 19 wound infections and 8 delayed intestinal movements in open procedure group, and 5 delayed intestinal movements in laparoscopic procedure group.
Conclusions: While wound infections were higher in open appendectomy procedure group, surgical time was higher in laparoscopic procedure group. The achievement of optimal results will be based on increasing surgical laparoscopic experience.

367 Effects of Dexmedetomidine on Lung Apoptosis in Increased Intraabdominal Pressure in Rats

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Objectives: Intraabdominal hypertension (IHT) in intensive care units is a common problem. Investigation of the effects of dexmedetomidine on respiratory system in rats with IHT was aimed.
Patients and methods: 32 adult Wistar-Albino male rats were anaesthetized by rata ''ksalazin/ketamin'' combination. Experimental model of IHT(12–15 mmHg) was induced via pressure cuff. Rats were left to spontaneous respiration for 2 h prior to randomly division into four groups. The first group underwent no process (control group). In SF group; 1 cc of 0.9% NaCl,in the third group; 0.2 μg/kg DXMT and in the last, 0.7 μg/kg DXMT were intravenously administered. Thereafter 30 min passed to observe the effects of DXMT. The rats were killed via cervical dislocation prior to surgery. Lung tissues were fixed in 10% formalin and stained with HE. Whereas the other cross sections were stained with TUNEL method,the rest were stained with anti-caspase3,8,9 and anti-Fas/FAsL antibodies for immunohistochemical analysis.
Results: Histological changes in group 3 were the less. There were no atalectatic changes in the same group. PNL infiltration and interalveolar thickness were higher in the 0.7 μg/kg DXMT group than others. In indirect immunohistochemical studies, in the 0.2 μg/kg DXMT group, immunoreactivity of caspase 8 and 3 were increased. However, the caspase-3 immunoreactivity was less than caspase-8. These results supported that 0.2 μg/kg DXMT administration led apoptosis, even though to be delayed, to start and showed that extrinsic pathways was used through apoptotic pathways. It was concluded that low dose of DXMT caused to delay in apoptosis in the lungs.

368 Central Venous Catheter Related Infections in Trauma Patients

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Introduction: Central venous catheterization is commonly used in trauma patients and may cause complications, including infection. The objective of this study is to analyze the incidence of catheter-related infection (CRI) and catheter-related bloodstream infection (CRBSI) with central venous catheters (CVC) according to different access sites.
Materials: The study included 167 CVCs. The number of CVCs was: femoral 138, subclavian 23 jugular 6 and days of catheterization duration were 5 ± 2 days. The catheters were percutaneously inserted using the Seldinger technique. The catheters were inserted by physicians with sterile-barrier precautions: use of large sterile drapes around the insertion site, surgical antiseptic hand wash, and sterile gown, gloves, mask and cap. All patients received antimicrobial prophylaxis.
Results: A total of 93 microorganisms were responsible for the 81 CRIs, of which 22 (23.6%) were Gram-positive bacteria, 63 (67,7%) were Gram-negative bacteria and 8 (8.6%) were Candida species. Isolated from the 93 microorganisms were: Klebsiella pneumoniae 12 (19%), Acinetobacter 4 (6.3%), Enterobacter 4 (6.3%), Proteas mirabilis 3(4.7%) Pseudomonas aeroginosa 17 (27%), Staphylococcus 14 (63.6%).12 patients (14.4%) developed CRBSIs and in 9 patients with positive blood cultures CRIs were negative. In our study, femoral venous access was associated with a significantly higher incidence of CRI and CRBSI than jugular and subclavian access; and jugular access was associated with a significantly higher incidence of CRI and CRBSI than subclavian access Conclusion Our results suggest that the order for punction, to minimize the CVC-related infection risk, should be subclavian (first order), jugular (second) and femoral vein (third).

369 Intraabdominal Seminoma Presenting with Acute Abdomen Due to Small Bowel Perforation: Report of a Case

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Introduction and objectives: Undescended testis is a risk factor for the testicular carcinoma, especially a seminoma. Seminoma can be seen at any age, but it is considerably rare in elderly patients. We describe a patient who presented with acute abdomen secondary to an ileum perforation due to the involvement of seminoma.
Case: A 48 year-old man complaining with right lower abdominal pain and a palpabl mass with a 2-week history was evaluated. An abdominal computed tomography was showed a large, solid, well-defined intraabdominal mass, measured about 16 × 14 ×x 10 cm in right quadrant of lower abdomen. An exploratory laparotomy was adjudged to perform. Whilst the preoperative investigations for surgery were continued, the patient admitted to the emergency service with acute abdomen symptoms, which was started suddenly. He had peritoneal irritation signs. He underwent an urgent laparotomy and a large mass located on terminal ileum mesenter through the retroperiton was detected. Dilated ileum segments with omentum wrapped along the antimesenteric border of the distal ileum was found. On separating omentum from ileum, perforation along the antimesenteric border was noted. Extended right hemicolectomy and an end ileostomy was performed. Histopathologic examination revealed a classical seminoma with extensive tumor necrosis and showed evidence of vascular invasion.
Conclusions: Undescended testes should be considered in men with an intraabdominal groin mass and should be aware of its potential complications.

370 Giant Gallbladder Presenting with Acute Cholecystitis: Coexistence Of Gallbladder Adenocarcinoma and Stone

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Background: Gallbladder cancer is an incidental finding in 1–2% of all open cholecystectomies We presenting a patient admitted to emergency

department with diagnosis of acute cholecystitis and on exploration giant gallbladder with giant stone and gallbladder adenocarcinoma.
Case: A 78 years old female was applied to emergency department with abdominal pain, nausea and vomiting. On physical examination, right upper quadrant tenderness and defence were detected. Murphy sing was positive and gallbladder was palpable on subcostal space. In laboratory tests, white blood cell count was 16,000/mm^3, glucose was 137 mg/dl and liver function tests were minimally elevated. In hepatobiliary ultrasonography, the gallbladder was hidropic (14 × 7 cm) and there was a stone (5 cm in diameter) and a mass (8 × 6 cm) in the gallbladder.Cholecystectomy operation was performed. Acute cholecystitis + cholelithiasis + adenocarcinoma were reported in the histopathological evaluation.
Conclusion: The carcinomas of the gallbladder were associated with gall stones in 80–90% of the patients. We concluded that the presence of the symptoms in our patient was delayed due to the magnitude of the gallstone and the excessive size of the gallbladder.

371 Small Bowel Perforation Due to Blunt Inguinal Trauma Report of a Case

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Introduction and objectives: Inguinal hernias are the most common surgical diseases. Intestinal perforation in patients with inguinal hernia has been reported rarely from blunt trauma directly. We present a case of perforation of small bowel due to blunt trauma to the inguinal region.
Case: A 62-year-old man had been previously diagnosed with an left-sided inguinal hernia. On physical examination acute abdomen was present. An abdominal ultrasonography and computerized tomography revealed free air and abdominal fluid in the pelvic space. Urgent laparotomy was performed and ileal perforation was found. The perforation site was closed primerly and herniorraphy was performed at the same session. Postoperative recovery of the patient was uneventful.
Conclusions: Blunt trauma can cause significant injury when applied to a patient with a hernia and a careful evaluation for intestinal injury is required in patients sustaining blunt trauma.

372 The Roles of Alvarado Scoring System and Ultrasonography in Diagnosis of Acute Appendicitis

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Introduction: The aim was to determine the role and predictive value of Alvarado scoring system and ultrasonography in the acute appendicitis (AA).
Material–methods: This study is a retrospective review of the all patients who underwent appendectomy for presumed AA in our clinic in 2008. The clinical diagnosis was established preoperatively by clinical history, physical examination, laboratory tests and radiologic findings. The patients' Alvarado scores were obtained from their medical records. The diagnostic criteria for AA on ultrasonography were identification in the right iliac fossa of an echogenic mass and/or a non-compressible aperistattic, tubular, laminated structure measuring at least 6 mm in anteroposterior diameter.
Results: In 2008, 581 patients were performed appendectomy for presumed AA. 184 patients with both preoperative ultrasound and Alvarado scores were evaluated. There were 95 male and 89 female with a median age 24 years (range 14–78). Of these, 171 patients (93%) had AA and 13 patients (7%) did not. Sensitivity, specificity, positive predictive value, negative predictive value, and diagnostic value of Alvarado score were 56, 69, 96, 89, and 56%, respectively. Sensitivity, specificity, positive predictive value, negative predictive value, and diagnostic value of ultrasonography were 52, 38, 92, 94, and 51%, respectively. Sensitivity, specificity, positive predictive value, negative predictive value, and diagnostic value of both Alvarado score and ultrasonography were 58, 51, 94, 89 and 58%, respectively.
Conclusion: Clinical findings and experience are impotant for the diagnosis of AA. Alvarado scoring system is easy, simple and cheap for supporting the diagnosis of AA.

373 Perforation of the Gallbladder by Trans-gastric Migration of a Sewing Needle

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İngestion of foreign bodies is a common problem, especially in the elderly, pediatric, and psychiatric population, but fortunately, most of them pass spontaneously and uneventfully within 1 week.The perforation and migration of ingested foreign objects into the abdominal cavity is very rare and usually leads to a laparotomy. Perforation of the stomach by sewing needle with migration to the gallbladder is extremely rare, and none cases have been reported in the literature. A 30-year-old woman was admitted because of abdominal pain and a history of a swallowed sewing needle 1 month ago. She had been followed-up at her local hospital and referred to our hospital because of the failure of progression of the foreign body. Physical examination showed right upper quadrant tenderness, guarding, and a positive Murphy's sign. Blood analysis showed increased white blood count. She was submitted to abdominal plain X-rays, which revealed a radio-opaque objects in the liver area with the form of the sewing needles. The patient was clinically stable, and a semi-urgent laparotomy was planned. At laparotomy the needle was in the gallbladder and that the end of the needle could be palpated and the site of gastric perforation. Removal of the intra gallbladder needle did not cause any problem. We was performed cholecystectomy and primary gastroraphy. The postoperative period was uneventful and the patient was discharged on seventh day of the operation. If there is a history of sewing needle ingestion and failure of progression and also signs of an acute abdomen, the surgeon must carefully evaluate gallbladder.

374 Colonic Volvulus: 4 Years Experience of Trakya University Department of Surgery

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Introduction: Sigmoid volvulus is an unusual intestinal obstruction form (1). It is most common in the middle aged, elderly, institutionalized or neuropsychiatric patients (2).
Patients and methods: Twenty-one sigmoid volvulus patients were reviewed retrospectively between 2004 and 2008.The recorded data were age,gender,admission symptoms,physical examination,radiological, and operative findings, surgical procedure, postoperative complications, mortality, and hospital stay.There were 10 male and 11 female patients. The mean ages of the patients was 66.5 years (34–84).The most common symptoms in acute abdomen patients were pain, and tenderness. Abdominal distension were the most recorded sign in patient without peritonitis. The mean admission time was 3.9 days (2–7). Five patients had a history of sigmoid volvulus (23%). Leukocytosis and high fever were found in 12 (57%) patients. Radiological evaluation of the patients revealed sign of intestinal obstruction (n = 7, 33%),Frimann-Dahl sign (n = 12, 57%) and bilateral free air under diaphragm due to perforation of the twisted sigmoid colon (n = 2, 9.5%). No patient underwent contrast enema examination of the colon. The mean hospital stay was 10.4 days (1–26 days). Two patients without signs of peritonitis were treated by sigmoidoscopy and operated on elective course.Patients with signs of acute abdomen were operated urgently. The patients had several associated diseases such as atherosclerotic heart disease, diabetes mellitus, hypertansion, chronic obstructive pulmonary disease, cerebrovascular disease. Eight patients (38%) died due to sepsis. Morbidity rate was 33%. Wound infection, evisseration pneumonia, and acute renal failure were found in 7 (33%) patients.
Conclusion: The principal strategy in treatment of sigmoid volvulus is early nonoperative detorsion followed by elective surgery consist of colectomy and anastomosis on well-hydrated patient. Urgent laparotomy is indicated in case of peritonitis. Sigmoidopexy is an alternative option but it is usually ineffective and has high recurrence rate.

375 Assessing of Selective Management of Penetrating Abdominal Stab Injury

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Objectives: Approach to patients with penetrating abdominal stab injury has changed from operative treatment to selective conservative management. Following physical examination, local wound exploration, laboratory and imaging study, the surgeon may decide to observe rather than operate on a patient with penetrating abdominal stab injury. The aim of this study is to evaluate patients with penetrating abdominal stab injury.
Methods: From January 2007 to December 2008, 51 patients with the diagnosis of penetrating anterior abdominal stab injury were admitted to emergency unit. Thoracic and posterior stab wounds were excluded from the study. Data evaluated included location of injury, immediate, early, delayed, therapeutic, non therapeutic and negative laparotomy.
Results: Haemodinamycally stable 24 patients (47%) hospitalized for observation. During observation, three patients (12%) underwent delayed laparotomy. One patient underwent therapeutic and two patients non therapeutic laparotomy. The remaining 21 of 24 patients (88%) did not undergo any surgery and were discharged from the hospital. 27 out of 51 patients (53%) underwent immediate surgery. In 12 of the last group (44%) therapeutic, in one (4%) nontherapeutic and in 14 (52%) negative laparotomy were performed. Most commonly encountered sites of stabbing were periumbilical, left hypocondrial and epigastric regions, respectively. There was no mortality.
Conclusions: In this retrospective study, although patients with penetrating abdominal stab injury were managed conservatively, immediately operated patients had a high rate of unnecessary laparotomy. The use of physical examination together with different diagnostic methods may decrease unnecessary laparotomy rates.

376 Clinical Characteristics of Female Patients With Fournier'S Gangrene

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Aim: Fournier's gangrene is a necrotizing infections of the perineum. Our aim was to review our experience with Fournier's gangrene in female patients during 10 years period.
Methods: A retrospective review of ten consecutive female patients with Fournier's gangrene was performed. Etiological and predisposing factors, causative microbiological organisms, and clinical outcome were investigated.
Results: Mean age of the patients was 52.7 (± 14.7) years, the mean duration of hospitalization was 17.6 days. The etiologic origin of the gangrene was anorectal, dermatological and urogenital in 50, 20, and 10% of patients, respectively. Diabetes was the most common predisposiation factor. Seven patient had a monomicrobial (*Escherichia coli*, *Staphylococcus aureus*) One patient had a mixed polymicrobial infection (*Escherichia coli* + Anaerob *Streptococcus* spp) All patients underwent aggressive surgical debridement and a diverting colostomy which was closed 2–4 months later when the patients were discharged from the hospital. Nine patients survived and one patient died for an overall mortality rate of 10%.
Conclusions: Fournier's gangrene occurred in females with a pattern similar to that in males. We believe that a colostomy is an integral part of management for patients requiring extensive debridement, especially if the infection arises in the anorectal region.

377 Surgical Oncologic Emergencies in Patients with Upper Gastrointestinal System Cancer

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Background: Abdominal emergencies with upper gastrointestinal system malignant disease may occur at nearly any time in the course of the disease. Surgery is associated with significant morbidity and mortality but is often the only therapeutic option avalaible fort his life-threatening complications. The aim of this study was to evaluate the clinical presentations, managements, and outcomes of this entity..
Methods: In the period between 2003 and 2007, we operated on 35 patients due to developed complications of an upper gastrointestinal system cancer. The morbidity and mortality statistics were restricted

to the hospital stay and postoperative period (less than 1 month). The medical records, clinicopathologic data and surgical procedures were analyzed. Significance was set at $p < 0.05$.
Results: Among the 35 patients, 21 had cancer with perforation. Obstruction was present in 8 patients and bleeding in 6 patients. There were 22 male and 13 female patients with mean age 59.2 ± 11.7 years. The most common complaint was abdominal pain. The morbidity and mortality rates were high, 54.3 and 22.9%, respectively. The major cause of death was multiorgan failure originated from intraabdominal sepsis. Two frequent postoperative complications were atelectasis and wound infection. Delayed surgery was the most significant factor affecting both morbidity and mortality ($p < 0.001$).
Conclusions: Emergency operations due to upper gastrointestinal system malignancies carry high risk of morbidity and mortality. Delay on surgery and patients' comorbidities are the main causes of this bad outcomes.

378 Abdominal Packing in Trauma Patients

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Background: The treatment of abdominal trauma over the past 20 years has shown a dramatic evolution. We have reviewed our experience with abdominal packing for trauma, a technique that can control hemorrhage and provide crucial time to correct physiological and metabolic failures for definitive surgery.
Methods: From January 2003 through January 2008, 25 consecutive adult patients with temporary abdominal packing were evaluated at Erciyes University, Medical Faculty, Department of General Surgery.
Results: There were 16 male patients and 9 female patients, ranging in age from 17 to 61 (mean 32.35) years. Eleven patients sustained motor vehicle accident, five patients sustained gunshot wounds, five patients sustained fall, and four patients were injured by penetrating trauma. The mean Injury Severity Score was 35.8. Liver injury was seen in 18 patients. Fourteen of them had grade III–IV ınjuries and four of them had grade III–IV liver injuries. The most commonly injured segments were segment 7–8. Associated trauma to the head and limbs were present in 12 patients.The main cause of the morbidity was pleural effusion in 14 patients and intraabdominal abscess in 5 patients. Twelve patients had survived. The mortality rate was 52%. Eight of them died because of hemorhagic shock (4 patients died within the first 24 h of admission). The other five patients died because of intraabdominal sepsis and multiorgan failure.
Conclusion: The data that we obtained from our study and related literature shows that abdominal packing is an effective surgical procedure for reducing the mortality in severe trauma.

379 Evaluation of Risk Factors and Severity of Life Threatening Surgical Emergency: Fournier's Gangrene (Report Of 16 Cases)

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Objectıves: Fournier gangrene is a rare, rapidly progressive, necrotizing fasciitis of the external genitalia, and perineum with high morbidity and mortality.
Patients and methods: 16 patients with Fournier's gangrene were enrolled. Gender, age, etiology, predisposing factors, symptomatology, associated diseases, hospital stay, FGSI, body surface area were analyzed.
Results: Ten men and four (six) female were enrolled in the study. Mean age was 56 years (range 23–81). *E.coli* and acinetobacter were the common organisms cultured. All patients were treated with a common approach of resuscitation, broad spectrum antibiotics, and wide surgical excision. Common predisposing factors included diabetes mellitus (68.7%), poor personal hygiene (56.2%), obesity (31.2%), psychosis (18.75%), and decubitus ulcers (12.5%). Whereas five (31.2%) patients developed synergistic gangrene of scrotum secondary to anorectal disease, five (31.2%) had urological source of infection. Serum glucose > 140 mg/dl, existence of septic shock on admission, extension of gangrene to perineum and abdominal wall (Group C and D), BSA ≥ 24 cm^2, cutaneous as source of infection and FGSI scores ≥ 7 were factors affecting mortality rates with statistically significance ($p < 0.05$). There was a direct correlation between culture of mixed type microorganisms and cutaneous source of infection ($p < 0.05$). Extension of gangrene correlated with higher FGSI scores (≥ 7) ($p < 0.05$). Mortality and morbidity rates were as 18.7% (n = 3) and 62.5% (n = 10).
Conclusion: Aggressive surgical debridement and combined antibiotherapy are essential in management of Fournier's gangrene. FGSI and BSA are useful to asses the severity and prognosis of the disease.

380 Acute Appendicitis with Pregnancy: two Years' Experience

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Objectıves: Acute appendicitis is one of the most common non-obstetric surgical pathology. Clinical symptoms and findings are masked due to anatomical and physiological changes of peregnancy, so diagnose and treatment of acute appendicitis in pregnancy generally late. The curent study reported the cases which were diagnosed acute appendicitis in pregnancy and promptly operated in our general surgery clinic.
Material–methods: We evaluated sixteen cases' data between October 2006 and October 2008 who admitted to emergencey department with abdominal pain, vomiting, nausea and anorexia complaints and diagnosed as acute appendicitis in pregnancy and operated.
Results: The average of the cases were 29.3 (range 20–44) and thirteen of them were second, two of them were third and one of them was in the first trimester. The time interval between the onset of the complaints and operation was 1.5 (range 1–6) days. Upon physical examination, there were rebound tenderness present in 13 cases, muscular rigitide in three cases, right lower quadrant pain in nine cases and widely irration of all abdominal guadrant in four cases. There were not any maternal mortality and morbity after operation, however in only one case fetal mortality was observed inevitable abortion due to vaginal bleeding.
Conclusion: In our cases acute appendicitis was diagnosed frequently in the second of the pregnancy with abdominal pain symptoms and

rebound tenderness findings. Recognition is important because early diagnose and prompt surgical intervention can reduce maternal and fetal mortality and morbity in acute appendicitis.

381 Preventable Deaths from Stab Wounds (SW) in a Low-incidence Area is Not Related to Conservative Management

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Introduction and objectives: Conservative management of penetrating trauma has been mainly advocated in centres with a high incidence and large experience with those injuries. Our aim was to assess the preventable death rate in our patient population, and the failure rate of conservative management.
Materials and methods: Retrospective observational study in our Trauma Registry (July 1993–July 2007). We have assessed the demographics, severity, diagnostic approach, TRISS probability of survival (Ps), and outcome.
Results: Of a population of 277 patients with SW, 47% were in the abdomen and 39% in the thorax. Before hospital arrival, 36 patients were in shock, 29 required OTI, and 11 underwent CPR. 97 (35%) patients had an ISS > 15. 81 CT scans, 44 DPL and 23 eco-FAST were performed. 193 (70%) patients underwent emergency surgery, and 84 (30%) were treated conservatively. Overall mortality was of 28 (10%) patients, 10 (36%) of them with a TRISS Ps > 0.5. The failure rate of conservative management in abdominal SW was of 3 (3.6%) patients, and none of them died.
Conclusion: Our preventable death rate from SW seems rather high, although not related to conservative management

382 Effects of Amelogenin Treatment on Normal and Ischemic Colon Anastomosis in Rats

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Introduction and objectives: The data about role of amelogenin that is an extracellular matrix protein, during the healing process of the gastrointestinal anastomosis is lacking. In this study, the effects of amelogenin treatment on normal and ischemic colon anastomosis were evaluated.
Methods: Adult male Wistar Albino rats weighing 200–250 g, were divided into four weight-matched groups: normal colon anastomosis group ($n = 8$); amelogenin treated normal colon anastomosis group ($n = 8$); ischemic colon anastomosis group ($n = 8$); amelogenin treated ischemic colon anstomosis group ($n = 8$). Sufficient equal volume of amelogenin to entirely cover the anastomosis area had been applied. All animals were killed on postoperative day 4. Bursting pressure levels were measured. Peri anastomotic colon tissue hydroxyproline, catalase (CAT), Cu–Zn superoxide dismutase (SOD), glutathione (GSH), malondialdehyde (MDA) and nitric oxide (NO) levels were assessed to evaluate oxidative stress.
Results: Bursting pressure levels of the ischemic colon anastomosis group is significantly lower than the normal colon anastomosis, the amelogenin treated normal colon anastomosis and the amelogenin treated ischemic colon anastomosis groups respectively ($p = 0.003$, $p = 0.05$, $p = 0.011$). Hydroxyproline level of the amelogenin treated normal colon anastomosis group is significantly lower than the normal colon anastomosis and the ischemic colon anastomosis groups respectively ($p = 0.026$, $p = 0.003$). GSH level of the ischemic colon anastomosis significantly lower than the amelogenin treated normal colon anastomosis group and the amelogenin treated ischemic colon anstomosis group respectively ($p = 0.019$, $p = 0.002$).
Conclusions: Amelogenin treatment could support the physical strength of ischemic colon anastomosis and effect oxidant/antioxidant response positively.

383 Meckel's Diverticular Complications in Adults

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Introduction: Meckel's diverticulum is the most common congenital anomaly of the gastrointestinal tract, occuring in 2–3% of the population. In the majority of patients, Meckel's diverticulum is asymptomatic. We report our experience with the management of complicated Meckel's diverticulum in adults.
Methods: Between april 2005 and January 2009, the data of seven patients (5 males and 2 females) aged 17–65 years who underwent surgery due to complications of Mechel's diverticulum was retrospectively evaluated.
Results: Of the seven patients, three presented with acute surgical abdomen, two had abdominal pain mimicking acute appendicitis, one had incarcerated incissional hernia, and one had intussusception. Intraoperative diagnoses were as follows; Littre's hernia in one, ileoileal intussusception due to Meckel's diveticulum in one, diverticulitis in two, perforation of the diverticulum in three patients. While diverticulectomies were performed in five patients, two had small bowel resections. In addition to, appendectomy was performed in four patient. All the patient had an uneventful recovery except one, who experienced a postoperative wound infection. The hospital stay was 4–16 days. Ectopic gastric mucosa was found in two cases. In one case, neuroendocrine tumor was detected in the appendix.
Conclusions: Meckel's diverticulum is an uncommon cause of acute abdominal disease in adults. Meckel's diverticulum presents distinctive challenges to a clinician, as it is prone to varied complications such as intestinal obstruction, diverticulitis, perforation. The diagnosis of Meckel's diverticulum is difficult to establish preoperatively, and index of suspicion is necessary in patients with an acute abdominal illness.

384 A Rare Acute Abdomen Cause Pneomotosis Cystoides Intestinalis

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Introduction: Pneumatosis cystoides intestinalis is a pathologhy which is rarely incidentally seen and is characterised with submucosal or subserosal air cysts. There is no surgical indication in asymptomatic cases. Surgical treatment is needed in the development of complication or the possibility of risk. A patient who is hospitalized with diagnosis of pyloric stenosis and is detected pneumatosis cystoides intestinalis incidentally at the operation is presented.
Case: 54 year old male was admitted our emergency department with vomiting weight loss complaints. Pyloric stenosis was diagnosed by radiologic and endoscopic examination. He was hospitalized and acute abdominal signs developed. Free air was detected in radiologic examination. Surgery was performed. Pyloric stenosis and pneumotosis cystoides intestinalis in jejenum were diagnosed. Biopsy specimen was obtained from the cysts in jejunal serosa. Subtotal gastrectomy, gastrojejunostomy and bilateral truncal vagotomy were performed for the pyloric stenosis.
Result and discussion: There is no surgical indication in asymptomatic cases. Pneumotosis cystoides intestinalis commonly accompony pyloric stenosis and perforation of the cysts may bring out acute abdominal symptoms. Knowing this pathology, we may avoid unnecessary emercent laparotomies.

385 Biliary Stent Poisoning: Ileus Due to Migrated Multiple Biliary Stents

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Introduction and objectives: Biliary stents are used in the management of obstructive jaundice to maintain bile drainage. Biliary stents migrate in 8–10% of patients and are generally eliminated by natural means. Dislodging of a biliary stent into the intestinal lumen might cause some complications such as intestinal obstruction, small bowel perforation and bilio-enteric fistula. Ileus, as a result of multiple migrated biliary stents is a rare clinical entity.
Case: A 42-year-old man was admitted to the emergency surgery unit with complaints of acute abdominal pain, vomiting, abdominal distension and the absence of flatus and defecation. Palpation of the abdomen revealed abdominal distention but no rebound tenderness or muscle guarding. Bowel sounds were increased and digital rectal examination was normal. Chronic alcohol consumption for 15 years and smoking were noticed in his habits. He was being followed for chronic pancreatitis for one year. Prior his admission, he had received repeated endoscopic biliary stent application in five different sessions, because of obstructive jaundice. He had no previous surgical operation. Multiple plastic biliary stents were seen in the plain abdominal X-ray film. Abdominal computed tomography revealed that there were five biliary stents, located in various parts of the small intestine, without a sign of perforation. The ileus resolved with conservative management by nasogastric suction and fluid resuscitation.
Conclusions: Migrated biliary stents should be kept in mind in repeated attempts of endoscopic stenting and such patients must be evaluated before each application.

386 Risk Factors for the Prediction Of Morbidity and Mortality in Perforated Peptic Ulcer

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Aim: In urgent surgical procedures for peptic ulcer perforation, there is considerable postoperative morbidity and mortality. This study aimed to describe and analyze the risk factors that determine beforehand morbidity and mortality in cases with perforated peptic ulcer.
Materıals-methods: Age, sex, co-morbid diseases, symptom duration, abdominal air, amount of intra-abdominal liquid, location and diameter of perforation, operation, and the Mannheim Peritonitis Index (MPI) score were prospectively analyzed in 128 cases. Significant risk factors that cause morbidity and mortality were determined through a statistical study.
Results: The study sample consisted of a total of 128 cases (113 males and 15 females) with a mean age of 37 (range 20–84). Duodenum and stomach perforations were detected in 93 and 5.5% of the cases. In 12 cases (9.4%), a total of 14 complications were detected. The mortality rate was 4.7%. Statistical analyses revealed significant relationships between morbidity and > 50 age ($p = 0.000$), co-morbid disease ($p = 0.006$), perforation location ($p = 0.010$), type of operation ($p = 0.011$), and MPI score ($p = 0.005$). The factors significant for mortality included > 50 age ($p = 0.002$), co-morbid disease ($p = 0.017$), > 8 h of symptom duration ($p = 0.07$), > 500 cc intra-abdominal liquid ($p = 0.047$), a perforation diameter of > 0.5 cm ($p = 0.001$), omentopexy ($p = 0.025$), and a MPI score of > 21 ($p = 0.000$).
Conclusion: Factors such as age, co-morbid disease, prolonged perforation duration, amount of intra-abdominal liquid, perforation diameter, type of surgical operation, and MPI score were significant for mortality. The present study found that primary suture is a safe procedure for cases with peptic ulcer perforation.

387 Safety of Absorbable Surgical Barrier Film Wrapping in Colonic Anastomoses

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Conventionally, stapling or handsewing techniques are employed in intestinal anastomoses. This study compares surgical outcomes of handsewing versus wrapping surgical sealant film, in order to demonstrate the safety of surgical sealant film barrier in colonic anastomoses. 40 Wistar Albino rats were randomized into two even groups. The proximal colon of all subjects in both groups were incised. Handsewing anastomoses were performed in the control group and the incised colon segments were anastomosed via wrapping a self-adhesive absorbable surgical sealant film barrier (TissuePatch™ 3) in the experiment group. Anastomotic bursting pressure measurement, histopathological examination and tissue hydroxyproline level measurement procedures were carried out on the anastomoses taken out from 10 subjects from each group on each of post-op 3rd and 7th days. The mean anastomotic bursting pressures on post-op 3rd and 7th days were 33.0 ± 9.49 mmHg and 146.0 ± 15.06 mmHg in the control group and 58.0 ± 10.33 mmHg and 190.0 ± 25.82 mmHg in the experimen group. The values were analysed with Mann–Whitney

U test and the differences were statistically significant. The histopathological staging was done acording to Ehrlich–Hunt model. The values were analysed with Mann–Whitney U test and the difference between post-op 7th values was statistically significant whereas post-op 3rd day groups was not. The mean tissue hydroxyproline levels on post-op 3rd and 7th days were 88.18 ± 8.04 and 135.0 ± 6.30 mg/l in the control group and 56.31 ± 5.40 and 100.2 ± 15.42 mg/l in the experiment group.The values were analysed with Mann–Whitney U test and the difference between both the po.3rd d. and po.7th d. values were statistically significant.The safety of surgical sealant film barrier in colonic anastomoses in rats was demonstrated.

388 Do D-Dimer Levels Have a Predictive Value in the Acute Abdomen?

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Introduction: Previously we documented that an elevated D-dimer level during admission of the acute abdomen patient had a high sensitivity for intestinal ischemia. Meanwhile, the observation of a decrease in specificity and positive predictive value forced us to question what beyond this major change lies.
Methods: Consecutive admissions presented with non-traumatic acute abdominal gastrointestinal disorders were recruited in a tertiary referral hospital. Patients were classified into 2 different time intervals (Group A = August 2002–April 2004 and Group B = November 2007–December 2008). D-dimer, lactate dehydrogenase, serum amylase and INR levels were tested in the emergency room prior to transport to the surgical ward. For each patient, 15 variables, including D-dimer, were available for analysis.
Results: Plasma levels of D-dimer in Group B were significantly higher than in Group A (1073 ± 104 ng/mL vs. 874 ± 91 ng/mL, $p < 0.05$). Thirty-three (20.7%) of the 159 patients in Group A and 9 (7.4%) of the 122 patients in Group B had intestinal ischemia. Both D-dimer levels in patients with intestinal ischemia in Group A and B were significantly higher than in patients without ischemia (1620 ± 278 ng/mL vs. 669 ± 87.3 ng/mL in Group A and 2390 ± 591 ng/mL vs. 973 ± 98 ng/mL in Group B, $p < 0.05$). Nearly 92% of patients with acute abdominal pain in Group B had D-dimer levels above the reference range.
Conclusion: The existing data suggest that a positive D-dimer result is not always useful to ''rule in'' the diagnosis of intestinal ischemia in the acute abdomen patient.

389 Foreign Bodies in the Rectum with Multivariate Causes: Review of 30 Cases

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Introduction: The presence of foreign objects in the rectum is a rare encountered situation. These objects are usually inserted transanally or swallowed as foreign objects. This study was conducted to investigate the results of patients admitted to our clinic with a rectal foreign body.
Methods: Data of 30 patients who admitted to our clinic between 1980 and 2008 were evaluated retrospectively
Results: Mean age of the population was 51.3. The foreign object was taken out in the proctological position in 18 patients. In 4 patients these methods failed and laparatomy was performed and the objects were taken out transanally without colotomy. In three patients symptoms and signs of peritonitis were significant at admission and all of them were lost because of rectum perforation followed by septic shock. Distribution of foreign objects was: six deodorant lids, five glass bottles, two aubergine, a glass, a salt cellar, a piece of plastic pipe, a vibrator, a plastic cover, a chocolate cover, a chicken bone, a fish bone, needles, a spiral, coins and key, a piece of thermometer, teeth prosthesis and soap. Mortality was seen in three patients.
Conclusions: The presence of foreign objects in the rectum is a rare encountered situation which should always be kept in mind for differential diagnosis. Most of these objects can be taken out transanally. If this fails, all efforts must be shown to take it out without opening the colonic lumen. Because of potential complications, the surgeon must be careful during intervention.

390 Prognostic Factors Effecting Mortality in Fournier'S Gangrene And Treatments

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Aim: Fournier Gangrene is an life-threatining enfection which effects perineal and genital area.Our aim is to determine prognastic factors related to Fournier's Gangrane.
Patients and methods: 21 patients were examined by planning a retrospective clinic study. 21 patients (male:15 female:6 e/k = 5/2 median age: 56 (range 38–78) treated with FG diagnosis between January 2005 and June 2008 in Surgery Clinics of İstanbul Training and Research Hospital were evaluated. Demographic signs, aetiologies, related diseases, lab and bacteriological data, treatment methods and patient stays of 16 alive and 5 dead patients were compared retrospectively.
Results: 5 of 21 patients were died. Other 16 patients survived. Median age of the alive was 54. Median leukocyte number at the moment of appliance was 13.9, median debridement 2.6 and median inpatient stay were determined as 27 days. Median age of the dead 63. Median leukocyte number at the moment of appliance was 31.5, median debridement 2.5 and median inpatient stay were determined as 19 days. The most common reason of the aetiology was determined as perinal abscess. Diversionary ostomy was applied to six patients. Chronic kidney failure, and type 2 diabetes was exist in four patients of dead-group. In addition, in one patient type 2 diabetes and hypertension was observed.
Conclusion: Chronic kidney failure related to hemodialysis and high level of lekucyte number at the moment of appliance are the important prognastic factors of deaths related to FG.

391 The Patients with Diagnosis of Acute Abdomen that Need Gynecologic Consultation Peroperatively in Emergency General Surgery Clinics

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Some gynecologic diseases mimizing acute abdomen can be operated by general surgeons in emergency clinics. We reviewed this patients about the reasons of this conditions and how it can be prevented. We analysed 19 patients retrospectively operated with the diagnosis of acute abdomen that have gynecologic diseases,in Dr. Lütfi Kırdar Kartal Education and Training Hospital during 2004–2008 years. Patients mean ages was 32 years (18–44). Mean preoperatively follow-up time were 2.5 h (1–5). 15 patients were consulted with gynegologıc and obstetrıc clinic preoperatively, but the other four patients were not consultated. Five patient evaluated preoperatuarly with abdominal and pelvic usg. Mean operatuar time was 70 min. Mean hospital stay was 3 days (2–5). Minor complication rate was 30% (wound infection, transient bowel atony) and major complication rate like mechanical intestinal obstruction was 5%. 1 patient has ectopic pregnancy, 1 patient has left ooferectomy and appendectomy because of left over torsion. Five patients have intraabdominal abcess draınage and appendectomy for right tuboovarian abcess, one patient has abcess drainage for right tuboovarian abcess, three patients have intraabdominal abcess drainage and appendectomy for left tuboovarian abcess, four patients have hemorage control and appendectomy for right over cyst ruptüre, one patient has hemorage control for left over cyst ruptüre, three patients have hemorage control and appendectomy for left over cyst ruptüre. 16 patient followed by gynecologic and obstetric clinic, others followed by our clinic.

392 The Late Results of Simple Closure Technique And *Helicobacter Pylori* Eradication in Duodenal Ulcer Perforation

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Introduction and objectives: Simple closure followed by *Helicobacter pylori* (Hp) eradication has become the mainstay of treatment for perforated duodenal ulcers. In our study, the late results of this apporoach were analysed prospectively.
Methods: One hundred and fifty-five patients were operated for perforated duodenal ulcer between 2003 and 2007. All were treated by simple closure followed by Hp eradication. All patients were called for follow-up examination at the postoperative sixth week. Physical examination and gastroscopic evaluation were performed. All the patients were called once a year and asked to answer the standart questionnaire we prepared, The recurrence rate of the ulcer was evaluated. The fisher exact test was used for statistical analysis.
Results: Of the 155 patients, 84 of them turned for follow-up. 25 of these patients fitted to Visick 1, 46 patients to Visick 2, 9 patients to Visick 3, and 4 patients to Visick 4 criteria. Appropriate screening tests (USG, CT) or gastroscopic evalutaion were performed to patients who fitted to Visick 2, 3 and 4 criteria. We detected the ulcer recurrence rate as 4.7% and it was not statistically different than other studies in the literature related with this technique. After all, it was significantly lower than the non-Hp eradication groups.
Conclusions: We conclude that the simple closure technique and Hp eradication in duodenal ulcer perforation has low recurrence rates, and Hp eradication plays an important role in decreasing the recurrence rates.

393 Our Experience with Perforated Peptic Ulcer

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Background: Perforated duodenal ulcer remains a major life threatening complication of peptic ulcer disease. This retrospective study reviews our experience at the Taksim research and teaching hospital.
Methods: Between January 2004 and 2009, 126 patients underwent surgical repair of perforated peptic ulcer disease at the Department of Surgery, Taksim Research and Teaching hospital. Data had Hospital records were analyzed for age, sex, previous history of peptic ulcer disease, main presenting features, operative findings, and type of surgery performed, complications and mortality. After resuscitation, laparoscopy or laparotomy followed by simple closure or definitive ulcer surgery and postoperative *Helicobacter pylori* eradication therapy was given to all the patients.
Results: There were 126 patients with acute perforated peptic ulcer seen over the study period, comprising 107 males (84.92%) and 19 females (15.07%), a male female ratio of 5.63:1, age range of 16–78 years and a mean age of 38.74. After adequate resuscitation, Laparoscopic suturing of ulcer was performed in 4 patients, 122 patients underwent laparotomy and 103 (81,74%) had simple closure of the perforation with omentum (Graham). Definitive peptic ulcer surgery was done in 15 (11.9%) patients, 8 had truncal vagotomy and pyloroplasty, 3 had truncal vagotomy and gastrojejunostomy, 3 had taylors operation and 1 had gastrectomy Roux -en-Y gastrojejunostomy. The major complications included wound infection in 29(23.01%). There were four deaths recorded (3.17%).
Conclusion: Simple omental patch by open method and *Helicobacter pylori* eradication therapy is the standard therapeutic solution in perforated peptic ulcer. Laparoscopic repair of perforated ulcers is also technically feasible.

394 Misfindings of Modern Imaging Technology in Emergency Cases

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Computed Tomography (CT) has become the mainstream of evaluating all hemodynamically stable patients with acute problems when the attending doctor, is urging for diagnosis. Basing a diagnosis solely on radiological data sometimes ignoring medical history and physical examination may lead to unexpected errors. Wrong interpretation of radiological images or images with equivocal findings which may delude the radiologist and technical errors (artifacts) are all potential sources of mistakes. The aim of this study is to draw attention to the danger of the modern imaging diagnostic modalities to misguide the treatment of patients who need emergency care. We present some cases we faced in our clinic where radiological images showed pathologic entities which in fact did not exist (false positive errors) but forced us to inappropriate treatment. Two patients underwent negative laparatomies with imaging diagnosis of a ruptured gallbladder in one case and free air under the diaphragm in the other. A patient with a severe head injury and a CT scanning showing pneumocephalous was transferred to a tertiary centre to be proved on repeated images that initial diagnosis was mistaken due to a wrong

calibration of the gantry. Imaging findings do not necessarily represent reality. Almost always surgeons rely on CT scans for treatment decisions. it is a hard task for a surgeon to question or ignore the pictures to treat a patient based on medical history and physical examination. Experience of radiologist is essential and close cooperation with the attending surgeon is needed to avoid radiological misfindings in emergency cases.
Author to editor: To be presented as a poster. A full text is available on demand.

395 Addicted to Surgery or Insertion of Rectal Foreign Bodies: a Case of Multiple Events

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Intentional own insertion of rectal foreign bodies in a married, claimed to be straight male, using antidepressive medicaments because of sexual orientation disorder, resulted in resurgery with the same reason of mechanical intestinal obstruction after 7 years in the same surgery clinic by the same surgery team as an emergency intervention. Failure of the nonoperative measures under local, spinal and general anesthesia led to the surgical treatment of the 54-year-old patient in 2002 and 2009, who is now 61 years old during the second event. Large bottles were removed through laparotomies and colotomies followed by primary repair to reverse the ongoing ileus, which resolved on the 5th postoperative days in both events. A surgeon who is called to see a patient with retained foreign body should answer whether the patient had rectal perforation and whether the foreign body could be removed transanally without regional or general anesthesia with or without surgical intervention. In case of children; habitually self inserting objects in her vagina or sexually aggressive behaviour with others, e.g. for a boy ''humping'' toys in sexual positions can be a behavioural indicator of child sexual abuse or assault. Hence message is: if in a patient perforation of sigmoid colon or rectum history after anal insertion of foreign body in an otherwise healthy adult becomes habitual,the patient should be send to psychiatric counselling. Discussion of the nonoperative measures to remove rectally inserted objects is also an utmost important opportunity constituting the largest part of the report of the present case.

396 Use of Vacuum Assisted Therapy in Giant Defects on Abdominal Wall Due to Necrotizing Fasciitis: Report of Two Cases

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Necrotizing fasciitis is a highly morbid and mortal condition. As a result of aggressive debridement, wide tissue defects occur. Wound cleaning from infective material, granulation process and grafting of wound requires a long time. Recently, a vacuum assisted therapy system has begun to use for this kind of wounds.
This study discuss the treatment result of vacuum assisted therapy (VAC® Therapy™) in two patients with giant abdominal wall defect in view of current literature.
Case1: A 44 years old man had an operation because of an accident on railway.
At the time of admission there was a wide defect with necrotizing fasciitis on the right lombar region and anterior abdominal wall. There was a full thickness defect about 40×30 cm after an aggressive debridement. It was successfully treated with VAC and the patient has been discharged after tissue grafting on the postoperative day 85.
Case2: A 22 years old man had an operation because of an accident. He was admitted at postoperative day 4. He underwent an aggressive debridement because of necrotizing fasciitis. The skin, rectus abdominus, transversus abdominus, internal and external oblique muscles and some part of quadriceps femoris on the left side was excised. The sacroiliac joint was also broken and pubis was separated. VAC abdomen has been applied on two different sites and the wound has become available for grafting after 65 days of therapy.
As a conclusion, vacuum assisted therapy provides safe and accelerated wound healing, improves proper tissue granulation in patients with giant abdominal defect.

397 Usefulness of Bogota Bag in the Temporary Abdominal Closure in Emergency Surgery

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Introduction: Bogota bag (BB) is a device used for the temporary closure of the abdominal wall (AW). Despite its potential benefits, their use is not widespread and remains controversial in the present.
Aım: To describe our experience in its management for the temporary closure of the AW in emergency situations.
Methods: For a period of 4 years, BB has been used in 10 patients (pts), with an average age of 58.7 years. Six had a secondary peritonitis, one tertiary peritonitis, two haemoperitoneum and one a compartment syndrome established. The technique consisted of the placement of a bag of sterile serum, stitched to the skin with non-absorbable material.
Results: The average of bags placed by year was 2.2. No morbidity was associated with the placement and/or replacement of BB. The average time of hospitalization was 88.9 days and the average time of income in the ICU was 26.2 days. In 5 pts, the bag was replacement one or more times. The average number of surgical interventions by patient during the income was 3.3. The average time of permanence of the patient with the bag was 22.4 days. Sixty percent of patients are alive today.
Conclusions: (1) The technique of the BB is simple, cheap and reproducible by most of the surgeons, specially in emergency situations. (2) Allows direct and continuing observation of abdominal cavity (3) Facilitates the rapid and natural closure of AW, preventing the evisceration. (4) Allows adequate ventilation of the patient and prevents the compartment syndrome.

398 The Role Of Ultrasonography in the Diagnosis of Acute Appendicitis

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Objectıves: The aim of the current study is to assess the role of ultrasonography in the management of acute appendicitis.
Methods: Ultrasonography was performed to 318 patients with acute appendicitis suspicion between 2004 and 2008. Appendectomy was performed to patients with acute appendicitis diagnosis according to clinical examination after ultrasonography. Patients who had a diagnosis different from acute appendicitis with clinical examination were observed. The histopathological findings of patients with appendectomy were compared with their USG findings.
Results: 254 of 318 patients had acute appendicitis diagnosis by ultrasonography. Hystopathological examination showed acute appendicitis in 242 of these patients. 12 patients did not have acute appendicitis. USG showed that 64 patients did not have acute appendicitis. Ten of these patients showed gynecological pathology, and six of them showed urinary pathology, and they were all treated appropriately. In eight patients the appendicitis findings became evident in clinical observation; resulting in appendectomy, and histopathological examination showed acute appendicitis. Forty patients showed improvement at follow up. No spesific treatment was needed. Misdiagnosis rate was determined as 4.58%. The sensitivity, specificity, positive predictive value, negative predictive value and accuracy percentage of ultrasonography in the diagnosis of acute appendicitis was 96.8, 82.35, 95.27, 87.5 and 93.71%, respectively.
Conclusion: Ultrasonography has a high degree of accuracy in the diagnosis of acute appendicitis. However, we also conclude that Ultrasonography results should always be interpreted in combination with clinical findings.

399 Retrovezical Hydatid Cyst Resulting from Rupture of Primary Liver Hydatid Cyst: Case Report

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Background: Hydatid cyst disease is frequent in some regions of the world, including our country Turkey, and is most commonly located in the liver and lungs. The hydatid cysts may rupture spontaneously or as a result of trauma. Herein, we describe a rare case of retrovesical hydatid cyst which was resulted from rupture of spontaneous rupture of liver hydatic cyst intraperitoneally.
Case: Fifty-four years old male was admitted to emergency department with complaints of frequent urination and abdominal pain lasting for 10 days. There was general abdominal tenderness on physical examination. There was no history of trauma or operation. In his abdominal ultrasonography and tomography there were primary cyst (11×6 cm), ruptured cyst (6×4 cm) and retrovesically located cyst (15×13 cm). Indirect hemagglutination test was positive for echinococcus granulosus (1/4,096). Laparotomy was performed and all the cysts were excised by partial cystectomy. There was no postoperative complication. The patient was externalized on postoperative 5th day with albendazol treatment.
Conclusion: Retrovesical localization of hydatic cyst is a very rare. These cysts mostly occur as a result of surgical inoculation caused by inadequate surgery or free intraperitoneal rupture of primary hydatic cyst. In endemic regions, possibility of hydatic cyst should be kept in mind in differential diagnosis of intrapelvic cysts and masses.

400 Wegener'S Granulomatosis With Massive Gastrointestinal Hemorrhage Due to Colonic Involvement: Case Report

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Background: Wegener's granulomatosis (WG) is a systemic necrotizing vasculitis of unknown etiology characterized mainly by involvement of the upper airways, lungs, kidneys and may rarely involve the gastrointestinal tract. Intestinal involvement may be asymptomatic. We herein report a WG with massive lower gastrointestinal hemorrhage due to colonic involvement.
Case: The patient complained of dyspnea which started 2 months ago, fatigue, generalized arthralgia and myalgia together with loss of sensation on right upper extremity was applied to emergency and hospitalized by internal medicine department. Physical examination revealed a very ill-looking patient, there were positive lung findings for WG and c-ANCA was positive. We consulted the patient because of hematochesia with abrupt drop of hemoglobin and platelet count. On colonoscopy whole mucosa was full with fresh blood from sigmoid to anal canal. On angiography multiple foci of bleeding were demonstrated on descending and sigmoid colon. Embolectomy was not performed because of multiple foci. hemoglobin decrease continued and his clinical condition deteriorated; an explorative laparotomy and total left colectomy was performed. His melena persisted for 34 days but hemoglobin was maintained at 9 after 8 units transfusion after operation.
Conclusion: We herein report a case with clinical WG who developed a gastrointestinal hemorrhage and treated by surgery. The uremic state and cytotoxic agents given to patients may detoriated the gastrointestinal bleeding. Immunosuppressive therapy might exacerbate gastrointestinal complications. The clinicians should be aware of this situation, therefore treatment of these must be performed in centers where angiography and endoscopy are available.

401 Correlation Between Severity of Peritonitis and MDA, SOD, Catalase Values in Patients with Generalized Peritonitis

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Background: The aim of this study is to determine the strength and proceeded efficiency of MDA, SOD, and catalase levels that are indicators of oxidative stress in generalized peritonitis.

Material–Methods: This study was conducted as prospective and randomized with patients who applied at Dicle University, Department of General Surgery between March-September 2008. Patients were composed as group 1 (n = 50); generalized peritonitis, group 2 (n = 50); laparotomy under elective conditions and not present peritonitis; group 3 (n = 50) as control group. In order to measure limits of MDA, SOD, CRP and catalase, blood samples were drawn from the patients in group 1 and group 2 on before operation day (BOD), 1st and 3rd days.
Results: The MDA values of group 1 on before operation day, 1st and 3rd days were compared to group 2 and 3, the difference were found statistically meaningful. Statistical differences noticed between group 1 and 2 MDA values on BOD, 1st and 3rd days. Statistical differences were noticed between catalase values measured BOD and 3rd days when group 1 and 2 values compared to group 3. The SOD values of group 1 and group 2 on 0 day were compared to group 3, meaningful statistical difference was found. Statistically meaningful difference was found between the SOD values group 2 and 3 on 1st day.
Conclusion: Values of SOD, MDA and catalase were noticed usable parameters for the following and detection of severity of generalized peritonitis

402 The Effect of Early Cholecystectomy on Morbidity in Patients with Acute Biliary Pancreatitis

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Objectıve: We aimed to evaluate the effects of early cholecystectomy on morbidity and patient comfort in patients with acute biliary pancreatitis.
Methods: 58 patients who underwent cholecystectomy for acute biliary pancreatitis in our clinic between 2004 and 2009 were evaluated retrospectively. The patients were divided into three groups as early, late and elective cholecystectomy cases.
Fındıngs: 20 patients who had undergone cholecystectomy operation in the first 10 days until the administration to hospital were classified as the first group (early cholecystectomy). 12 patients who had undergone cholecystectomy between the 2nd and 10th weeks until the administration to hospital were classified as the second group (late cholecystectomy). 26 patients who had undergone cholecystectomy after 10 weeks were classified as the third group (elective cholecystectomy).
In Group 2, no patient had pancreatitis attacks; 8 of 26 patients in Group 3 had recurrent pancreatitis attack in the preoperative period and treated in our clinic. In order of these data, age, height, weight, gender, SGOT, SGPT, amylase, bilirubin and the time for waiting for the operation were compared and evaluated statistically. The time for waiting for the operation was found to be $p > 0.001$, and it was shown to be significant.
Results: There is a tendency to perform cholecystectomy in patients with acute biliary pancreatitis, after the acute attack is resolved. We believe that the early cholecystectomy prevents the patient from the additional morbidity in patients with acute biliary pancreatitis, by showing this with a statistically significant result in our study.

403 Fournier'S Gangrene – Diagnosis and Principles of Surgical Treatment: Single Centre Experience

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Introduction: Fournier's gangrene is a rare and potentially fatal, rapidly-progressing soft-tissue infection, characterized by necrotizing fasciitis of the perineal and genital region.
Materials and methodss: During 1992–2008 in our unit were operated 32 patients with Fournier gangrene. Patient's mean age was 46.3 ± 2.3 (19–69) years. The primary site of infection: anorectal processes (n = 11), scrotum and penis trauma (n = 12), paraurethral inflammatory processes (n = 8), idiopathic (n = 1). Ultrasound and primary CT demonstrated the extension of the inflammatory lesion in 19 and 14 cases respectively. Repeated CT allowed revealing new areas of infection spread in 3 patients. Overall Fournier's Gangrene Severity Index (FSI) was 2.81 ± 0.5. All patients were treated surgically: (a) debridement of the primary infection site, (b) skin flaps fixation, (c) additional wound treatment with pulsatile jet, (d) wound treatment with water soluble unguentum, (e) vacuum aspiration, (f) closed wound drainage with perforated tubes, (g) secondary wound sutures or skin grafting, (h) continuous or intermittent wound lavage with antiseptic solutions.
Results: Three patients patients died and 29 survived. The mean FSI for the survivors versus non-survivors was 2.4 ± 0.4 and 7.67 ± 2.7, respectively (NS).
Conclusions:(1) Primary and series CT allows appreciating the extension of the inflammatory process; (2) adequate surgical debridement is the main principle of treatment; (3) new techniques (pulsatile jet and vacuum aspiration) allow to reduce the time to the wound closure.

404 Rigth-sided Traumatic Diaphragmatic Hernia: Presentation with Intestinal Obstruction 57 years Later

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Traumatic right sided diaphragmatic hernia is clinically rare and may present with complications in a later period. On the right side presence of liver is thought to be a protective factor for both development of diaphragmatic injury itself and for its complications.
We present a case of right sided diaphragmatic hernia due to blunt trauma, which was asymptomatic for 57 years and has been presented with intestinal obstruction. The patient, 76 years of male, has presented with intestinal obstruction and abdominal pain which has been relieved after nasogastric decompression. Despite conservative treatment patient has not shown further improvement and has been operated on a semi-elective basis. Significant part of small and large bowel, distal portion of stomach, and almost whole of liver had been herniated and reduced by right thoracoabdominal approach. 10 cm wide defect in diaphragm has been repaired with prolene mesh, laparotomy has not been closed and Bogota bag has been applied.
In the early postoperative period transaminase levels have increased 4,000 U, and CT-angiography has revealed patchy areas of low per-

fusion in both lobes of liver. After therapeutic anticoagulation liver function has recovered completely, abdomen is closed and oral feeding commenced.
At the 9th postoperative day respiratory insufficiency has occured after witnessed aspiration of gastric contents, followed by multiple organ failure.
This case represents a quite late presentation of right sided traumatic diaphragmatic hernia, for which treatment was complicated. This case clearly shows the importance of detailed evaluation and timely treatment of all traumatic diaphragmatic hernias.

405 Amyand Hernia: A Case Report

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Introduction: Amyand hernia is first described by Claduis Amyand in London in an 11 year old male. It is a rare condition and described as appendix vermiformis in the hernia sac. We present a case of an incarcerated inguinal hernia with appendix vermiformis inside.
Case: Sixty nine years old male with bulging and pain in the right inguinal region is evaluated. Right inguinal hernia was detected. After opening the hernia sac, the appendix and ceacum were observed. Lichtenstein procedure was performed. The patient was discharged in the second postoperative day.
Discussion: Although the incidence of appendix vermiformis in the hernia sac is 0.5–1%, the incidence of acute appendicitis in the hernia sac is 0.13–0.62% in various reports. The treatment of Amyand hernia is related to the appendix found inside. The application of appendectomy to normal appendix in routine hernia repair procedure is controversial due to infection risk. We do not routinely perform prophylactic appendectomy in such patients. We thought that a patient tailored approach is more acceptable.

406 Hydatic Cyst in Emergency Service

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Introduction and objectives: Hydatid disease is typically asymptomatic. It can become symptomatic due to expansion, rupture or pyogenic infection. Rupture of the cyst is the most common complication, followed by secondary infection, jaundice, and anaphylaxis.
Methods: In this study, we analyzed demographic and clinical characteristics of the cyst hydatic patients who admitted the emergency service due to complications of the cyst hydatic.
The medical records of patients, with a final diagnosis of complicated cyst hydatic were reviewed for demographic information, admission symptoms, laboratory findings, evaluation techniques, and outcome.
Results: Ten patients (7 men, 3 women) with final diagnosis of complicated CE (Cystic Echinococcosis) included the study. All of the patients had abdominal pain. While the pain was diffuse in the entire abdomen in seven patients, it was located in the right upper quadrant in three patients. Patient's complaints were nausea, vomiting, jaundice, ileus and urticaria. The clinical signs and symptoms of HC rupture are not always severe, but hydatid fluid can irritate, which can cause peritonitis as occurred in our series of patients, all of whom had acute abdominal signs. In this study, 100% of the patients with ruptured CE had abdominal pain. Thus, the clinical presentation of CE rupture is not always silent. The severe clinical presentation and infrequency of CE perforation has been held partially responsible for the misdiagnosis by the surgeon.
Conclusion: In conclusion; complicated HC may be admitted to emergency service with different clinical pictures especially in endemic regions and must be considered in differential diagnosis.

407 Management of LatrogenıC Biliary Injuries in a Referral Center: Analysis of 73 Patients

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Background: To evalute the changes in the pattern of Iatrogenıc bılıary injury and consequentıal effects on treatment strategy and outcome.
Methods: Seventy-three patıents treated for Iatrogenıc bılıary injury (IBI) between 2003 July and 2008 November at a tertıary care center In Izmir, Turkey were retrospectıvely analysed.
Results: Underlyıng diseases were; missed tumor (N: 2, 2.7%), biliary surgery (N: 67, 92%) and hydatıc dısease (N:4, 5,3%). In recent years wıth a gradual increase in the avaılabılıty of endoscopıc and radiologial expertise the majorıty of patıents underwent extensıve preoperatıve diagnostic and therapeutıc procodures includıng endoscopıc retrograd panceratography for 26 cases(35.6%) and percutaneus transhepatıc cholangıography for 11 cases(16%). Defınıtıve surgery was performed In all patıents except 9(12.3%) of them. Roux-En-Y hepatıco-jejunostomy was the primary reconstructıon technıque and performed for 35 cases (48%). There was only one (1.36%) hospıtal mortalıty. Restenosıs developed In 2 (2.7%) cases and was reoperated. Percutaneus baloon dilatation was faıled In three patıents as a fırst treatment optıon. None of patıents died of dısease related causes durıng the follow-up perıod.
Conclusion: Increased experınece in laparoscopıc biliary surgery might be caused to attempt more challengıng cases and increased bılary tract injurıes.

408 The Independent Risk Factors of Mortality and Morbidity from Upper Gastrointestinal System Hemorrhages after Surgery

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The aim our study was to determine the independent risk factors affecting patients with upper gastrointestinal hemorrhage who underwent surgery.
Materials and methods: The medical records of 62 patients with upper gastrointestinal hemorrhage who underwent operation were reviewed for variables including age, gender, shock, association with co-morbidity, pulse rate, hemoglobin levels, white blood cell count, serum urea, creatinine, sodium and potassium levels, time of opera-

tion, number unit of blood transfusion, Rockall risk score and length of hospital stay. In order to determine the independent risk factors mortality and morbidity, we carried out Entered logistic regression analysis.

Results: Morbidity and mortality rate were 35.4% (22 patients) and 29.1% (18 patients), respectively. The independent risk factors affecting morbidity were serum albumin level [odds ratio (OR) = 1.442, 95% confidence interval (CI) = 1.060–1.962, p = 0.020] and Rockall score ≥ 5 (OR = 0.027, CI = 0.001–0.690, p = 0.029), and the independent risk factors affecting mortality were advanced age (OR = 1.048, CI = 1.008–1.090, p = 0.0189), and high Rockall score (OR = 0.578, CI = 0.370–0.903, p = 0.016).

Conclusion: To decrease the postoperative morbidity and mortality rates in patients with UGIH requiring surgery, patients preoperative risk factors should be demonstrated. We believe that establishment of interventional indication on time and evaluation of intraoperative surgical region and technique in combination with the patient- and disease-related factors in patients requiring surgery would help reduce morbidity and mortality rates.

409 Treatment Strategy for Respiratory Tract Hemorrhage Associated with Pulmonary Contusion

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Blunt thoracic trauma leads to various clinical conditions, such as hemothorax, pneumothorax, pulmonary contusion, and respiratory tract hemorrhage. Especially, respiratory tract hemorrhage resulting from pulmonary contusion is so critical to require a clinical challenge. Of our experienced survivors, 3 trauma victims (male 3/3, 19–23 years old) with blunt thoracic trauma associated with motorcycle accident were transferred to our emergency departments. They similarly suffered respiratory failure (average respiratory rate of 32) and hypotension (average shock index of 1.2) on arrival. Immediate after the rapid-developing respiratory failure in relation to lung contusion and endobronchial bleeding, bronchial blockade device and extracorporeal membrane oxygenation (ECMO) were urgently introduced at an average of 32 and 104 min, respectively, and achieved rapid resolution of their respiratory crisis. All of them withdraw from ECMO within 5 days. Pulmonary contusion sometimes follows fatal progress, and we consider that quick bronchus blockade and ECMO introduction is the key of survival.

410 Characteristics of Patients Examined in the Surgical Emergency Department of General Hospital of Trikala, Greece, During 2008

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Emergency departments (ED) in Greece are incorporated to the departments of the hospital and are divided in two major areas: one for internal medicine and one for general surgery. Every patient has free access to the (ED). The workload and the conditions treated in ED in Greece are geographically and social – economically depended. The National Health System is represented by one hospital for each prefecture. The General Hospital of Trikala, is categorized as an urban hospital, with 300 beds, and is covering a population of approximately 150,000 people, living in the town and in villages situated in the surrounding mountain area. The department of general surgery is stuffed by 8 general surgeon specialists and seven residences. During 2008, 15,833 patients were examined in the surgical ED. In this study we analyze the characteristics of the patients, the number and causes of admissions in the various departments of our hospital and also the transferals to a tertiary center.

411 Pneumotosis Cystoides Intestinalis Due to Pyloric Stenosis: a Case Report

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Aim: Pneumotosis cystoides intestinalis is a rare entity, and may be associated with pyloric stenosis.

Materıals-Methods: Data of a patient operated for pyloric stenosis and pneumotosis cystoides intestinalis in our institution are presented.

Results: Patient was a 50 year-old addicted male, and his body mass index was 18.5 kg/m^2. He had been suffering from nausea/vomiting, bloating and constipation for a few months. A gastroscopic examination revealed atonic gastric dilatation, duodenal ulcer and related pyloric stenosis, and positive serology for *Helicobacter pylori*. An eradication treatment in conjunction with long term proton pomp inhibitors were given, however the patient readmitted to our department with worsening symptoms including vomiting, pain and weight loss after 2 months. Repeated gastroscopies and gastric meal X-ray examination revealed pyloric stenosis and the patient decided to have an operation instead of repeated medical treatment. During laparotomy, subserosal foamy air bubbles were observed on the serosal wall of ileum. A partial resection of ileum was necessitated for the suspicion of perforation. Vagotomy with Finney pyloroplasty was performed in order to cure the pyloric stenosis. The postoperative period was uneventful and the patient was discharged from the hospital on day 8. The patient has not have a recurrence, gained weight and have no problem since 2 years postoperatively.

Conclusion: Pneumocytosis cystoides intestinalis may be observed in the presence of a pyloric stenosis and necessitates resection if any doubt for perforation is present.

412 Recurrent Hydatid Cyst Disease Presented As Retroperitoneal abscess: Report of a Case

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Background: Echinococcosis, is an endemic disease presenting as cysts in the liver and other organs caused by Echinococcus

Granulosus. In this study, a rare appearance of the disease is presented as an abscess located in the retroperitoneal space.
Results: The patient was 75 years-old male with several comorbidities admitted to our emergency department with fever and left lumbar pain. He had had operated for hepatic hydatid disease 20 years before the admission. Physical examination revealed local tenderness and slight hyperemia on his left lumbar region. His laboratory findings showed leucocytosis, and a computed tomography demonstrated a huge retroperitoneal abscess located between spleen and pelvic entrance and denied any pathological finding regarding to the left kidney or adrenal gland. Since the general condition of the patient did not allow an operation under general anesthesia, the abscess was drained through a 7 cm long incision located on the hyperemic area under local anesthesia. After complete removal of the abscess and daughter cysts, a drain was left behind, and removed on day 7. The patient was discharged out of hospital on day 2, after an uneventful recovery period.
Discussion: To best to our knowledge, this is the first hydatid disease case presented as a retroperitoneal abscess in the literature. Hydatid disease may be kept in mind as a differential diagnosis in the presence of a cystic retroperitoneal mass in endemic regions.

413 Surgical Treatment for Giant True Splenic Artery Aneurism

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Introduction and objectives: Giant true splenic artery aneurism is rare lesions. These aneurisms have risk of rupture and bleeding. We have performed a giant true splenic artery aneurism.
Case: The case is a 38 year old female patient. She applied to hospital with complaints of abdominal pain. At the physical examination, there were a moderate splenomegaly and a pulsatile mass in the left upper abdomen. It was shown a giant splenic aneurism at the abdominal computed tomography and colour Doppler ultrasonography. Colour-Doppler abdominal ultrasonography showed about 50 mm splenic artery aneurism. Computed abdominal tomography showed a hypo dense mass situated anterior and superior to the pancreas tall and corpus extending up to the splenic helium. The diagnosis was confirmed by CT angiography. The patient was performed with general anaesthesia and left subcostal incision. At the exploration, splenic arterial dilatation and aneurismal sac was shown and aneurysmectomy with splenectomy was performed.
There was no complication intraoperatively and postoperatively. The patient was discharged at the postoperative fifth day. There was no complaint at the control examination at the fifteenth day after discharging.
Conclusions: Although giant splenic artery aneurism is rare, but they have risk of rupture and bleeding. There are two options for treatment of these lesions. One of them is aneurysmectomy. It is frequently performed with splenectomy. Other option is embolisation. In our opinion, surgery for giant splenic artery aneurism is performed successfully without important complication.
Author to editor: Saved by LookUs

414 Effect of Intravenous Paracetamol Administration on Systemic Blood Pressure in Critically Ill Patients

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Introduction: An association between the administration of paracetamol and relative hypotension in critically ill patients has been reported by the staff working in the surgical and trauma intensive care unit of Istanbul Faculty of Medicine.
Methods: A prospective, observational study was undertaken to investigate the effect of paracetamol on systemic blood pressure in two groups of critically ill patients. A dose of 500 mg of paracetamol was administered intravenously to both groups in 15 min time. Blood pressure, heart rate were recorded at baseline, at the end of infusion and then at 15, 30, 60 min after administration. The differences occured over the observation period was measured by Friedman analyse.
Results: Twenty-eight patients with sepsis, were enrolled to group-1 (anti-pyretic effect) and 20 postoperative patients were enrolled to group-2 (analgesic effect). Analysis of data from all patients showed that systolic arterial pressure (SAP) and mean arterial pressure (MAP) were reduced significantly over the observation period in both groups (SAP:$p < 0.001$ for both, MAP:group-1 $p < 0.05$, group-2 $p < 0.001$). SAP and MAP in group-1 and group-2 decreased by an average of approximately 7 and 10% respectively. However, no significant decrease in DAP was noted in group-1.
Conclusions: Utilization of the intravenous paracetamol for febrile and/or postoperative patients caused a significant decrease in systemic blood pressure after administration. This drug-induced hypotension was clinically relevant to control the required blood pressure. Thus, clinicians should be aware of this potential effect, especially in critically ill patients.

415 Evaluation of Pain by Nurses in Emergency Departments

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Background: Pain is considered one of the most important symptoms which guide diagnosis, treatment and nursing care in the emergency departments.
Aım: To discuss pain evaluation by nurses in emergency departments and to attract attention towards nurses' responsibility for pain evaluation.
Methods: Qualitative and quantitative data from 18 studies on pain evaluation by 520 nurses were evaluated.
Results: All studies reviewed showed that about three fourths of the nurses in the emergency departments did not make pain evaluation based on the standards (using pain rating scales, reporting the conditions likely to affect pain evaluation etc.). The nurses included in 10 studies assigned significantly lower scores for pain than the researchers($p < 0.05$;$p < 0.001$). All studies revealed the following reasons why triage nurses did not play an effective role in pain evaluation: insufficient knowledge, the idea that doctors are responsible for pain evaluation, doctors not appreciating the value of

pain data provided by nurses, insufficient cooperation among members of the health staff, work overload, time constraints, errors in reporting data on pain evaluation and conflicting attitudes and beliefs concerning pain evaluation.
It has been reported that only 30–40% of the patients presenting with pain to emergency departments received effective pain management. The most important reason for this low rate has been shown to be deficiencies in pain evaluation due to insufficient multidisciplinary cooperation.
Conclusion: It can be concluded that nurses in emergency departments are not efficient enough to use interventions which help to evaluate pain for effective pain management.

416 Necrotising Fasciitis Secondary to Perforated Diverticulitis

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Introduction: Diverticulosis of the colon is a common condition. Complications of diverticulitis often require surgery. Perforated diverticulitis may rarely present with spreading superficial sepsis.
Case: Male, 54 years, history of chronic depression. Admitted in the emergency department after a 15-day history of abdominal pain in the left lower quadrant (LLQ), associated with asthenia, anorexia and weight loss, without diarrhea, constipation or fever. The patient examination showed edema and thickening of the abdominal wall with swelling and redness in the LLQ. Blood chemistry revealed leukocytosis with neutrophilia and elevated C-reactive protein. A diabetic ketoacidosis was diagnosed. The abdominal CT confirmed abdominal necrotizing fasciitis with an abscess, without other intra-abdominal changes. The patient was then submitted to emergency surgery with debridement of the necrotising fasciitis and drainage of the abscess. He was admitted to the ICU. Further debridement was necessary 48 h later. At D6, fecal contamination of the wound was detected, leading to a subsequent laparotomy with identification of a sigmoid inflammatory mass attached to the site of the fistula's external orifice. A Hartmann-procedure was performed (histology confirmed the diagnosis of perforated diverticulitis). The patient developed a SIRS complicated with a right-side necrotizing pneumonia requiring multiple antibiotic treatment and pulmonary decortication. Death occurred at the 54th hospitalization day.
Conclusion: Necrotising fasciitis as a consequence of perforated diverticulitis is an uncommon but potentially lethal condition requiring prompt surgical intervention. When accessing an abdominal necrotising fasciitis without recognisable source, an elevated index of suspicion is necessary to link it to complicated diverticulitis.

417 Trauma Service in a Small Community Hospital

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Introduction: Care of trauma patients may be difficult in small community hospitals. These hospitals are usually staffed by a small number of general practitioners and, perhaps, a general surgeon, and a significant number of trauma cases are brought to them.
Methods: The records of minor and major trauma patients who admitted to Bozkir Community Hospital between June 2007 and December 2008 were evaluated. Mortality and transfer rate were recorded. General surgeon was not present in first 12 months. The rates of last 6 months when general surgeon has been present were calculated separately.
Results: 738 trauma patients were admitted in first 12 months 139 (18.83%) of these were transferred to larger centers. Treatment of remaining 599 (81.16%) patients continued in our hospital. Mortality rate of first 12 months was 0.6%. Three patients requiring immediate surgery died because of absence of general surgeon. 898 patients were admitted in last 6 months. 147 (16.3%) of these were transferred to larger centers. Mortality rate of last 6 months was 0.3%. Three gunshot wound and one penetrating cardiac wound patients were saved with emergent surgery.
Conclusions: Regardless of the sophisticated techniques for dealing with trauma that exist in larger centers, it is the staff of smaller hospitals that often shoulder the initial burden of trauma care. Transfer rate is between 16 and 18% of all trauma cases. Our hospital is 1.5 h away from larger centers. Presence of general surgeon in last 6 months mainly affected the care of patients that requiring immediate surgical attention.

BURNS

418 Early Results of Temporary Fecal Containment Devices in Burn Patients

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Aim: Fecal contamination which may result in septicemia, graft loss and wound healing delay is the most serious problem for burns in perineal, gluteal and upper thigh regions. Temporary fecal containment devices can be used for diverting feaces from burned area. The aim of this study was to evaluate early results of using of these devices in our burn center.
Methods: Twelve patients, who were applied temporary fecal containment devices in our burn center, were retrospectively evaluated in this study.
Results: 7 (58.3%) of the patients were male.The mean age was 37.33 ± 17.34 year.The mean TBSA burned was 32.08 ± 14.05%. 6 (50%) of the patients had burn in all three regions (perine, gluteus and upper thigh). Three (25%) of the patients had burn in upper thigh. And 3 (25%) of the patients had burn in gluteal region. The devices were placed intra-rectally on the first admission days of all patients.The mean application time was 14.25 ± 4.51 days. Except minimal fecal leakage in 2 (16.7%) patients, any complication was not observed in our cases. Local infection confirmed by tissue culture was observed in 4 (33.3%) patients including two patients with fecal leakage. Besides, in one of these four patients, septicemia was developed and managed successfully with antibiotics and supportive treatment in intensive care unit of our center.One patient with 70% burn was died on 5 days of application due to multiple organ failure.
Conclusion: Temporary fecal containment devices aim to protect patients' wounds from fecal contamination by diverting feaces. If the safety of these device is proved in further studies, they may reduce the necessities of diverting stoma operation in burn patient.

419 Evaluation of Reactive Thrombocytosis in Burn Patients

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Aım: Reactive thrombocytosis which develops secondary to infection, trauma, malignancy or surgery is the most common ethiology of thrombocytosis. Although thrombocytosis is a benign and self-limiting condition in most cases, it may result in some thrombotic and hemorrhagic complications. The aim of this study was to evaluate the reactive thorombocytosis in burn patients.
Material: Thrombocyte counts was retrospectively evaluated in 158 consequent burn patients admitted to our burn center between August 2008 and January 2009. The correlations between thrombocyte counts and demographic data, total body surface area burned (TBSA), hospitalization time and levels of some acute phase markers also analysed.
Results: The mean thrombocyte counts were respectively $317.910 \pm 150.380/mm^3$, $379.750 \pm 174.430/mm^3$ on admission day and second day ($p < 0.05$). The number of patients with thrombocytosis was 25 (14.6%) in admission, 21 (84%) of them were children. The rate of thrombocytosis was 21/63 (33.3%) in children,whereas the rate of thrombocytosis was only 4/95 (4.2%) in adults ($p < 0.001$). The mean thrombocyte counts in children and adults were respectively $400.520 \pm 175.920/mm^3$, $250.330 \pm 77.900/mm^3$ in admission ($p < 0.001$). The mean WBC count was significantly higher in patients with thrombocytosis than patients with normal thrombocyte count ($p < 0.05$), but there was not any significant difference in CRP count ($p = 0.58$). And also,we did not find any significant difference between patients with thrombocytosis and patients with normal thrombocyte count in TBSA and hospitalization time ($p = 0.690$ and 0.895, respectively)
Conclusion: Reactive thrombocytosis is seen more frequently in burned children than burned adults and mostly unrelated to degree of burn.

420 An Uncommon Cold Injury Cause by Liquid Petroleum Gas (LPG) Burn

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Introduction and objectives: LPG is a kind of fuel, stored at as liquid under high pressure tanks. Skin defects can occur after spurting out the nitrogen with high pressure current. We would like to present two cases of cold injury because of leakage of liquid nitrogen gas from the valves of LPG tank which caused frostbite.
Methods: Patients had cold damage which caused upper extremity and bullous lesions on face. The physical examination revealed at each patient had circular fashion superficial skin defect on the skin surface of forearm and hand.
Results: Wound care with paraffine gauze was applied to the patients and defects were healed secondarily. In the presented cases wounds healed with minimal scar without functional lost.
Conclusion: This kinds of atypical injury can be encountered, because of misusage of tanks without CE standards; negligence of maintenance, overfilling LPG tanks. Our patients are pretty interesting because of having a different etiology.

421 A Case of Pulmonary Hemorrhage Associated with Electrical Injury

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Background: Electrical injuries are related with multiple organ dysfunction as well as high morbidity and mortality. Pulmonary compromise is rare, if compared to other organ dysfunctions related with electrical injuries. In this study, we presented a case with pulmonary hemorrhage associated with electrical injury.
Case: A 24-year-old previously health man was brought to our Emergency Department (ED), 1 h following the accident, with electrical injury. Initial examination findings were blood pressure 80/40 mmHg, heart rate 79/min, respiratory rate 37 breath /min. Glasgow coma score was 3. Decreased breath sounds, bilateral rales and wheezing were determined. There were small necrotic wounds (typical contact injury) on the first finger of left hand and under the right foot of patient. There was no trauma in thoracic wall. Blood gas analysis revealed respiratory and metabolic acidosis. The INR and platelet levels were normal. When chest radiograph and thoracic computed tomography were assessed, air bronchograms and symmetric consolidations were determined in the both lungs. Patient was intubated and fresh blood was aspirated from endotracheal tube. Mechanical ventilatory support was performed the patient due to lung hemorrhage and respiratory failure. Patient died after 4 h of admission in the ED.
Conclusion: Multiple organ dysfunction and necrotic skin lesions could be occurred in electrical injuries. Electrical injuries on the chest may cause lung infarction because of the direct effect of the electrical current and vascular embolism. Possibility of lung injury should be investigated after electrical injury especially in patients with respiratory failure.

422 Psychological Problems in Burn Patients

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Introduction and objectıve: The outcome of burn treatment is measured not only by mortality and morbidity, but also by post-burn psychological factors. The purpose of this study was to investigate whether difference in length of hospitalization exist between burn patients with and without mental health problems and if so, why.
Methods: The descriptive study was retrospective review of 448 patient with burn injuries who had received care at one burn unit in the Istanbul from October 2004 to December 2008. Socio-demographic features of patients, burn criteria (kind, depth, size, location), duration of hospital stay, and psychological problems were tabulated.
Results: Psychological impairment was found in 69 of 448 hospitalized burn patient. There were acute stress disorder in fifteen patient, anxiety in nine, adjustment disorder together with anxiety in eight, depression in seven, post-traumatic stress disorder in six patient. Fortyone (59.4%) patient had burns which were between I and II degree and 28 (40.6%) patient had burns which were between II and III degree. In 44 patient, burned area has been 21% or more. Patients

with psychologocal impairment were longer hospital stay and intensive care unit than patients without psychologocal impairment. Sixty-four (92.7%) patients with psychologocal impairment had been discharge either getting better or recovering completely but unfortunately 5(7.2%) patients died.
Conclusion: The presence of psychological problems in burn patients have an impact on their burn care. Psychological interventions can contribute towards successful outcomes.

423 Evaluation of Disseminated Intravascular Coagulation which that was Observed at Late Period of Burn

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Introduction and objectives: Major burns can cause disseminated intravascular coagulation (DIC) and is a serious clinical problem. We would like to present 2 DIC cases whose burn rate is 40% according to total body surface area (TBSA) which developed after late postoperative period.
Methods: Two cases over 40%, 2nd and 3rd degree burn injury admitted to our facility. First case who was 9 year old female developed *S. aureus* and second case was 18 years old female developed *P. aeruginosa* sepsis which was confirmed by blood culture. In first case DIC developed at postburn 18 day and in second case at postburn 26 day. In both cases DIC developed after postsurgery day 7.
Results: On patients, bleeding points, as leaking, were detected on all over burn areas. At the same period thrombocyte values decreased sharply (88.9 K/UL). Increase in prothrombin time (PT) (38.2 second) and active partial thromboplastin time (aPTT) (108 second) values, decrease in fibrinogen levels was observed. Cases were discharged from hospital in 35th day, without any problem. Patient was taken for 9 IU erythrocyte suspension and 6 IU platelet suspension in this time totally.
Conclusion: DIC occurs in early period of burning; but it can be formed in later periods, even after defects were recovered by operation. Rapid establishment of DIC table just before the discharging term from hospital is an unusual and interesting situation. The patients in our study can be accepted as an example of the necessity of observing coagulation parameters in every periods of burn damage.

DISASTER

424 Sphere Project: minimum Standards in Disaster Response and Trauma Care

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Introduction and Objectives: Disasters in the early period of the most common health problems encountered are traumas. International Red Crescent and Red Cross movement 400 organizations from 80 countries participated in the leadership of ''Minimum Standards in Disaster Response'' has been identified. Minimum standard of health services, trauma care for the ones after the disaster were determined. Oxfam (UK) with the source organization, Mavi Kalem (Social Assistance and Charity Association, Turkey) were undertaken by the Sphere project in Turkey.
Methods: Sphere Project Handbook reviewed by experts in the field of each section, the terms of our country's adaptation has been made. Within the framework of the project dissemination, Sphere workshops have been organized in various provinces. The PPT Slides were adapted to Turkey's needs. The project's outcomes have been observed through the pre-post tests and the workshop evaluation forms.
Results: Expert review and the end of the first study, with a high risk of disaster in our country, the handbook was understood to be necessary and useful. In addition to this, the control lists in details but useful and also, the summary tables are useful to take a decision in emergencies. It is also understood that preliminary results from the project is compatible with Literatur data.
Conclusions: Developed in each country is adapting to the local experience of the Sphere, significant experience with disasters in our country the right to contribute are welcome. Indeed, the first application of the new approach by the Sphere project's coordination center is monitored with interest.

EDUCATION

425 Integrating Patient Simulation in a Trauma Training Program for Surgical Residents

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Introduction: (1) Initial assessment of trauma patients is a period with a high frequency of treatment protocol deviations and an elevated number of avoidable complications. (2) The majority of medical errors are diagnostic or cognitive, whereas operative technical complications accounted for less than 8%, and (3) general surgery residents (GSR) do not feel well-trained on the management of major trauma patients.
Aim: Describe initial experience with one approach to foster quality improvement in trauma care modifying the method by which we train surgeons.
Methods: We integrated in the GSR Program, simulation based training sessions with other educational tools as lectures and workshops. The scenario objectives were based on research data indicating major deficiencies in trauma care (TC).
We incorporated team training and crisis resource management sessions. To review trauma life support diagnostic and therapeutic standardized protocols we run scenarios to train initial assessment, and head, thoracic and abdominal trauma.
After every clinical case, residents participated in a video assisted debriefing session leaded by a specialized instructor. An evaluation interview was made after the course.

Results: All resident viewed the experience as a ''very good'' training modality. Many of them felt their time was better spent in the simulator session than in the operating room, and wanted to do it more often or in a scheduled way. Some of them complained about evaluating the mannequin and the equipment when compared to the one in their actual work setting.
Conclusions: Integrating patient simulation with traditional surgical training may strength the approach to TC education.

426 Review of First Aid Training Through E-learning

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Introduction and Objectives: In order to be able to provide trauma care with success, first aid should be taught to all members of the population, and refreshment courses should be arranged at certain intervals. This study reviews a first aid training course presented through e-learning.
Methods: This course does not provide practical training, but aims to provide the first aid practicers with the advantage of updating, and to teach bystanders how to help first aid practicers in a more efficient way. The theoretical information given in this training course has been developed in compliance with the content of the Basic First Aid Training Course approved by the Ministry of Health. Consisting of 120 screens, it takes 3 h in average to finish this course.
Results: This course was introduced in 2007, and approximately 13,000 people took it to date. Attendance to this course is provided by two different **METHODS:** an employer asks its staff to take this course (corporate use) or individuals take this course at their discretion (individual use). Finishing ratio is approximately 50% for the individual use and 30% for the corporate use. If the employer maintains a close monitoring of the attendance rate, the finishing ratio can increase to 80%.
Conclusions: The e-learning method provides a considerable opportunity to spread the first aid training (correct first aid practice) across the population. It is understood that the attendance and finishing ratios for this course can be increased by employing methods of encouragement.

EMERGENCY MEDICINE

427 Haemorrhage and Thrombus Concomitantly: a Case Report

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Introduction: Pulmonary embolism is a life-threatening condition and its diagnosis is generally based on clinical suspicion.
Case: A 34 years old male had been admitted to another hospital with acute dyspnea and syncope and after initial evaluation he had immediately been undergone an operation due to epidural hematoma. He was referred to our emergency department with early diagnosis of acute coronary syndrome after operation because intraoperative and postoperative tachycardia could not be controlled. In his physical examination GCS: 15, arterial blood pressure 120/80 mmHg, heart rate 180/min and breath rate 25/min. ECG, Echocardiogram and thorax CT findings complied with pulmonary embolism. Venous Doppler ultrasonograpy findings complied with chronic deep venous thrombosis. Thrombolytic or antiaggregant medication could not be started because of epidural hematoma operation. At postoperative 72 h low molecular weight heparin and at 96 h warfarin was administered. In follow-up period his symptoms regressed and there was no complication due to epidural hematoma surgery. He discharged from hospital at day 15.
Conclusion: In trauma patients, one of the important issues that have to be considered during clinical evaluation is the primary reason leading to trauma. In this case, the investigation for syncope etiology revealed the haemorrhage and thrombus diagnosis concomitantly. These two diagnoses have opposite treatment strategies and due to this condition we had difficulty in management of the patient. Although there are intracranial haemorrhage cases due to pulmonary embolism treatment (thrombolytic or antiaggregant), a similar case report cannot be found in the available literature.

428 Treatment Approaches to Patients with Compartment Sydrome Like Symptoms Following Snake Bite to Their Fingers

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Introduction and objectives: Different societies have different type of snake bites. İn our actually series, two patient from U.K. and seven patients from south-eastern part of Turkey presented with lıke compartment syndrome result of was bitten by a snake to their fingers.
Methods: Four of nine patients applied to our clinic at the day of event, the other five were referred to us after the emergency treatments have been done. All bites were over or distally to the PIP joint. After being bitten by snake, patients admitted to our accident and emergency department because they had like as compartment syndrome on the forearm. Two of the patients were referred to us very late stage and one of them had partial necrosis and the other had total necrosis already. None of patients had signs of systemic envenoming.
Results: Two patients with local swelling and no other symptoms were discharged. Coverage of the defects were performed with full thickness skin grafting in two patients, cross-finger flap in one patient, reverse dorsal digital arter flap in one patient and dorsal interosseous metacarpal flap in two patients. One patient had amputation. None of patients had fasciotomy.
Conclusions: This study represents the clinical effects and current approaches for the treatment of snake bites to distal finger. All patients presented with compartment syndrome like symptoms on the hand or forearm. These patients should be followed-up very closely. Final wounds should be closed either with skin grafts or local flaps. Simultaneously, systemic envenoming should be considered.

429 An Important Geriatric Complain in Emergency Department; Abdominal Pain!

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Introduction: The aim was to evaluate the geriatric patient with abdominal pain in Emergency Department (ED).
Methods: The preliminary retrospective study included the period between January 1 and June 30, 2008, Ankara. Data were achieved from registration notebooks, manually. The patients separated within age to three groups as 65–74, 75–84, 85 and over. The finalization of management, hospitalization, operation rate, mortality were studied.
Results: There were 113 (0.63%, annually) patients. The mean age was 74.8 ± 7.0 (65–100), the mean hospitalization duration was 6 days (1–23). The sex and the age of patients can be seen in Table 1. 46.02% (n = 52) of them discharged from ED. Abdominal CT and USG usage were 33.62% (n = 38), 38.06% (n = 43) in ED. 0.97% (n = 11) patients had both CT and USG. Abdominal CT and USG results are showed in Tables 2, 3. Finalization of patient management was demonstrated in Table 4. The operation rate for all patients was 33.33% (n = 13). General surgery hospitalization and operation rate were 33.63 and 10.62% (n = 38, n = 12). The mortality rate was 7.69% (n = 3) in admission. There were not any significant difference between the groups of 65–74 and 75–84 according to sex, finalization, CT, USG utilization, operation rate (p = 0.866, p = 0.135, p = 0.786, p = 0.822, p = 0.3120) with SPSS 15 X^2 test, while the number of advanced geriatrics was unsuitable for statistics.
Conclusions: Females and the 65–74 age group were common with a complaint of abdominal pain in ED. Most of them had hospitalization indications and the primary yard was general surgery with brid ileus. Mortality rate was lower than 10%

430 Computerized Tomography is a Golden Clue in ED When Indicated!

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Introduction: Nontraumatic epigastric and left upper caudran pain is a common complaint in Emergency Department. It can include life-threatened various reasons as cardiac, respiratory, and serious gastrointestinal problems, rarely.
Case: A 47 year old man had an emesis with recurrent epigastric and left upper caudran pain admitted as second turn to ED in 24 h. Physical examination except a slight epigastric sensitiveness, EKG, urine test and biochemical tests, complet abdominal ultrasonography, X-rays were nonspesific on the first day. WBC was 12.2 on CBC. His complaints relieved with semptomatic treatment with an 50 mg ranitidine, 10 mg metoclopramide, serum sale on his observation and discharged with suggestions. In second admission with nonspecific physical examination findings, computerized tomography (CT) revealed splenic unenhanced parenchymal areas consistent with splenic infarcts. Computerized tomography angiography (CTA) showed a small aneurysm of the celiac trunk, a characteristic pattern of caliber irregularities and arterial wall thickening of the splanchnic arteries-including splenic artery, common hepatic, right and left hepatic arteries-, suggesting splanchnic arterial mediolysis (Figures 1 and 2 are presented with permission of patient's written consent). He was hospitalized to general surgery and started low molecular weight heparin. As clinical and radiologic findings were degrated, he was discharged without an operation.
Conclusions: Splanchnic (segmental) arterial mediolysis is a rare noninflammatory vascular disease of the abdominal splanchnic arteries with slight symptoms. CT for vasculary and internal organs should be performed to diagnose in recurrent complaints beside observing the physical findings.

431 The Factors which Effect Hospitalization Lengths in Gastro-intestinal Bleeding Patients Admitted to ER

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Purpose: Gastro-intestinal (G.I) bleeding patients consist a great number of E.R patients and in most cases hospitalization is neccesary. Long hospitalization periods causes negative results in both patient prognosis and costs. In this study, we analyzed G.I bleeding patinets' hospitalization lengths with CRP, leukocyte,endoscopic findings and socioeconomic factors on admission.
Methods: 30 patients which applied to E.R, during the period of September–December 2008 were taken in to the study. Patinets CRP and leukocyte levels on admission were taken and urgent endoscopic results were taken. Statistical analyzes between the values and hospitalisation lengths were made by SPSS 13 program.
Fındıngs: 10 women and 20 men patients admitted to the study.
The median range for age on women: 63.90 ± 17.75 and on men: 61.60 ± 15.29.
The median range for leucoyte levels: 11.06 ± 4.06
The median range for CRP levels: 35.77 ± 26.56
The median range for hospitalization lengths: 6.40 ± 6.17
Most encountered endoscopic findings in women: according to the forest endoscopic classification 70% stage 3, 20% stage 1b and 10% stage 1a.
Most encountered endoscopic findings in men: 70% stage 3, 5% stage 2b, 10% stage 2a, 10% stage 1b and 5% stage 1a.
Results: There are no relations between hospitalization length and CRP, leukocyte, endoscopic findings on admission, in G.I bleeding patients.

432 Surgical Repair May not be Required for Spontaneously Closed Peptic Ulcer Perforation Diagnosed at Laparoscopy

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Introduction: It is well documented that healing of peptic ulcer perforation (PUP) is possible with conservative therapy in selected cases. Thus a spontaneously closed PUP diagnosed at exploration may not require surgical repair.
Methods: Study included three patients in which diagnostic laparoscopy suggested spontaneously closed PUP between 2007 and 2008. Suggestion criteria were; fibrin cloth on duodenum with or without subhepatic fluid collection, no visible perforation, otherwise

normal exploratory findings. Omentum minus was dissected and cautiously observed. The stomach was filled with 500 ml diluted methylene blue fluid via nasogastric tube, operation table was tilted to right and up, a gentle pressure on the stomach was made with the shaft of laparoscopic irrigator to fasciculate the passage while the descending section of duodenum was compressed with the shaft of a grasper. Duodenum was cautiously observed for 10 min to detect dye leakage in all patients. If no leak was observed, operation was terminated after abdominal irrigation and inserting a catheter to the subhepatic area. Therapy for PUP was given postoperatively.

Results: All patients were male and the mean age was 32 (26–42), no leak of dye was observed at operation. Nasogastric tube was removed and food intake was allowed at postoperative second day. All patients were discharged on third day.

Conclusion: Although the perforation site is almost always identified at operation, to meet a spontaneously closed PUP is also possible. Irrigation and drainage alone may be sufficient for these cases after blue dye test as described in this study.

433 An Update to Etiologic Evaluation for Upper GI Bleeding in Istanbul, Turkey

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Introduction: Recent clinical literature suggests that erosive gastritis is the most common reason for upper GI bleeding. The aim of this retrospective study is to present the most common etiology of upper GI bleeding for the patients living in Istanbul.

Methods: Clinical data and endoscopic diagnosis of 1943 patients admitted to a large community hospital's single Surgical Endoscopy Center between January 2002 and September 2008 with upper GI bleeding were analyzed.

Results: The mean age of the patients was 53.2 (16–109), 69% of the patients were male and 41% female. History of medication with NSAI (48.5%), ASA (38%) and Coumadin (6.9%) was present in 31.2% of the patients. The endoscopic demonstrated reasons for upper GI bleeding were as following; Duodenal ulcer (62.4%), gastric ulcer (14.5%), erosive gastritis (5.4%), esophageal varicose (8%), gastric tumor (4%), other and unknown (5.7%).

Conclusion: Even though erosive gastritis recently became the most common reason of upper GI bleeding in Western countries, duodenal ulcers are yet far more common in our patients. Thus we conclude that main etiology for upper GI bleeding may be variable from one country to another depending on factors worth to investigate.

434 Hybrid Appendectomy for Complicated Appendicitis in Children

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Objectıve: Video-assisted transumbilical appendectomy (VATA) is a hybrid of both laparoscopic and open techniques to remove the appendix with clear advantages compared with either the laparoscopic or the open technique alone.

Methods-Results: We describe our effort to remove a complicated appendicitis in three consecutive cases where the laparoscopic technique was not valid and mandated conver-sion to the open fashion. The complicated appendix with/without abscess was delivered through the umbilical incision for an open technique safely. This gave our patients the maximum benefits of the minimally invasive surgery with better visualization, reducing equipment needs, less postoperative pain, rapid discharge, no postoperative infections, and excellent cosmetic results. All patients were quite satisfied during follow-up.

Conclusions: It is concluded that hybrid appendectomy seems to be feasible and reliable for children with complicated appendicitis not suitable for conventional laparoscopic technique. VATA was successfully accomplished with obvious advantages, and avoided conversion to the open fashion.

435 The Effective Usage of Cyanoacrylate in Emergency Department: Experience with a Series of Children Cases

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Introduction: Ethyl-2-cyanoacrylate (ECA) is a tissue adhesive material applied to close linear superficial wounds. The aim is to explore the benefits of cyanoacrylates in the emergency department on children with current application.

Methods: Retrospective cases conducted in a tertiary emergency department (ED) were evaluated in 2007. Patient age was 0–16 year old. The evaluation based on a total of 9 consecutive wound repairs within 6 h time period (< 6 h), and superficial small wounds ($\leq$ 3 cm). These wounds were cleaned with serum sale and then dried with gauze. ECA was applied to repair the wound after a signed consent obtained from the patient and/or relatives. They were observed for six months to observe the tissue changes. The patient's age, sex, indication, application time, pain score, cost, additional tending (if needed), complication, cosmesis, patients and patients' relatives' satisfaction were recorded.

Results: Except for one, all children were treated without any serious complication. ECA is cost-effective, time saver and provides successful repair along with patient satisfaction.

Conclusion: This report displays effective usage of cyanoacrylates for especially children in emergency departments.

Keywords: Cyanoacrylate, Emergency, Wound

436 Follow Up Post Paediatric Appendicectomy is it a Necessity?

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Background: Appendicectomy remains the most frequent emergency operation. The management of these patients varies between surgeons and hospitals. At our centre, it was a routine to review post operative children at 3 months.
Aims: Is to evaluate the need for a routine follow up in children who had appendicectomy.
Methods: It is a retrospective observational study for 100 consecutive patients between 2006 and 2007. A parallel questionnaire was sent to the parents of all the children.
Results: The average age was 11.6 years. 14% of the patients were found to have normal appendices. 70% of the patients were discharged within 2 days. 37% of the patient had intravenous antibiotics for 1 day and 15% were discharged with oral antibiotics. 94% had a routine follow up appointment in 3 months time. In 88% of cases there was no change in the management. On the questionnaire 85% of the parents thought they were given enough information regarding the procedure. In terms of routine follow ups, 68% of the parents found it very useful while 19% found it a little or not useful.
Conclusion: This study shows that there is no change of the management or a clinical need for the routine follow up. However the patients and their families like to keep a follow up appointment. It is more convenient for the patients and their family to arrange other sorts of follow up like a phone call conversation or a general practitioner follow up.

437 Assessment the Causes of Perforation and Mortality Ratio in Elderly Patients

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The aim of this study was to evaluate the disease profile and mortality ratio of patients presenting with acute abdomen. Four hundred fifty eight patients who underwent surgery with the diagnosis of acute abdomen were analyzed retrospectively. The effects of age, sex, American Society of Anesthesiology (ASA) class, accompany disease, admission time after the onset of the symptoms, follow up interval before the operation on mortality and length of hospital stay were evaluated. Male/female ratio was 0.72, and mean age was 72.3. Main causes were biliary system disease (34.1%), intestinal obstruction (27.1%), peptic ulcer perforation (17%) and acute appendicitis (14.4%). Median ASA class was 2 and 73.6% of the patients had at least one preexisting disease. Mortality ratio was 19.4%. ASA class, age, preexisting diseases other than malignity, period between the onset of symptoms and admission, follow-up time was significantly efective on mortality.

438 Reliability of Ultrasonography for Diagnosing Acute Appendicitis

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Purpose: Abdominal ultrasonography is the most commonly used diagnostic tool for diagnosing acute appendicitis,which is one of the most common causes of acute surgical abdomen.İn this study, we examined the reliability of ultrasonography for diagnosing acute appendicitis.
Method–material: İn this prospective study we performed abdominal ultrasonography on 235 patients admitted to our surgical emergency department and diagnosed as acute surgical abdomen according to the physical examination and laboratory findings during 2007. These patients were surgically treated by appendectomy and the materials were pathologically examined.
Results: 235 patients were admitted to this study.193 of these patients (82.1%) were diagnosed as acute appendicitis, and 42 (17.9%) of them diagnosed differently. 133 (88.67%) of 150 patients diagnosed as acute appendicitis on ultrasonography examinations were reported as acute appendicitis on histopatological examination. 60 (70.58%) of 85 patients diagnosed differently on ultrasonography examination were reported as acute appendicitis on histopathological examination.
Conclusion: The sensivity of abdominal ultrasonography for diagnosing acute appendicitis is high (89%), but the specificity is low ($p = 0.01$). We calculated that the specificity is 0.29, positive predictive value is 0.69, negative predictive value 0.60, accuracy is 0.67. Abdominal ultrasonography is a helpful diagnostic tool for diagnosing acute appendicitis.However, it should not be seen superior to anamnesis and physical examination findings.

439 Acute Pancreatitis Following Mushroom Poisoning: A Case Report

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Background: Mushroom poisoning is an important clinical problem which may cause serious complications and death. Acute pancreatitis is a rare complication of mushroom poisoning. In this study, we presented a case that developed liver damage and acute pancreatitis following wild mushroom ingestion.
Case: Sixty-six years old women admitted to emergency department with complaints of nausea, vomiting and abdominal pain. It was learned that patient was ingested wild mushroom before 24 h of admittance and her complaints were started after 2–3 h of ingestion. In initial examination, general appearance and vital signs of patients were normal and there was epigastric discomfort. Laboratory findings were leukocyte 5,300/μL (4.1–11.2), aspartate aminotransferase 235 U/L (8–46), alanine aminotransferase 193 U/L (7–46), amylase 529 U/L (28–100), lipase 1,090 U/L (13–60) on admission. Liver and pancreas was determined as normal in abdomen ultrasonographic examination. Computerized tomography of the abdomen showed minimal peripancreatic fluid. The patient was observed in emergency intensive care unit and symptomatic therapy was performed. Hepatic transaminases and pancreatic enzymes were decreased progressively during the observation. The patient was discharged from the hospital after 5 days clinical course, without complication.
Conclusion: Mushroom poisoning and acute pancreatitis have similar gastrointestinal symptoms and sings. Therefore, possibility of acute pancreatitis as well as other organ dysfunctions should be investi-

gated in patients with mushroom poisoning. Early recognition and appropriate therapy for acute pancreatitis and mushroom poisoning may lead to an improved prognosis and complications.

440 The Use of Laparoscopy in Abdominal Emergencies

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Diagnostic emergency laparoscopy is very helpful in diagnosing acute abdomen and evaluating abdominal trauma. Parallel to developments in laparoscopic techniques, its emergency applications are increasing. We reviewed our diagnostic emergency laparoscopy procedures applied to patients with acute abdomen and could not be diagnosed after 24 h of follow-up.

We applied diagnostic emergency laparoscopy to 24 patients in Dr. Lütfi Kırdar Kartal Education and Training Hospital during 2007–2008. In 15 patients laparoscopy indication was undiagnosed acute abdomen. There were four acute appendicitis, two peptic ulcus perforation, two small bowel necrosis, one perforated hepatic hydatid cysts, one iatrogenic urinary bladder perforation, one post-laparoscopic cholecystectomy bile fistula and 4 non-surgical adnexial pathologies. Diagnostic emergency laparoscopy was performed in five patients with penetrating abdominal injury. There were small bowel injury in two patients, colonic injury in two patients and no injury in one patient. Diagnostic emergency laparoscopy was performed in four patients with blunt abdominal injury. There were grade 2 splenic laceration in two patients, grade 3 liver injury in one patients and intraabdominal bleeding in one patient.

In conclusion, diagnostic emergency laparoscopy is a suitable technique in undiagnosed acute abdomen patients which could not be diagnosed after physical examination, laboratory, radiology and follow-up and helps surgeon to diagnose the disease. Also diagnostic emergency laparoscopy performed by experienced surgeons prevents negative laparotomy especially in abdominal trauma patients.

441 Acute Appendicitis in Pregnancy

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Introduction: Appendectomy is known as the most common non-obstetrical operative procedure in pregnant women with an estimated frequency of 1/1,500 of all pregnancies.Pregnancy continues to obscure the accurate diagnosis of acute appendicitis due to gestational physiological changes.Diagnostic delay increases the incidence of perforation, hence increasing maternal and fetal morbidity and mortality.

Patients and Results: Four patients of appendicitis during pregnancy were concluded in study between 2002 to May 2008 (Table 1). The mean age was 25 (range 21–36). Three patients presented during three trimester and one in first trimester.The mean time interval of symptoms to the admission is 72 h (range 24–120).Abdominal pain, vomiting, and nausea are the most common complaints.Rebound was the main sign observed in all patients.Fever was noted in two patients. Mean value of WBC count was 18,000 per l (range 9,700–26,900). Ultrasonographic examination was performed to all patients with the diagnosis of acute appendicitis.Three patients were operated under general anesthesia and one under regional anesthesia. Paramedian incision was applied to three patients and McBurney to the other one. The exploration findings were two perforated, one phlegmonous appendicitis and a normal appendix. No maternal or fetal mortality occured. Cesarean section was performed on 37-week pregnancy during appendectomy due to early onset contractions. Adhesiolysis was performed in same case because of postoperative ileus.

Conclusion: The accurate diagnosis of appendicitis during pregnancy requires a high level of suspicion and clinical skills. Delay of operation correlates to more inflammatory changes in the appendix and to higher maternal and fetal complication rates. Early laparotomy with appropriate preoperative diagnosis will reduce the fetal and maternal morbidity and mortality.

442 Incarcerated Paraesophageal Hernia Associated with Perforation of the Fundus of the Stomach: Report of a Case

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Introduction: Paraesophageal hernias occur most commonly in elderly and account for 5% in all hiatal hernias [1]. Although the fundus or corpus of the stomach are most commonly the contents of a paraesophageal hernia, we reported a case in which the gastric fundus and corpus incarcerated in the paraesophageal space, followed by perforation.

Case: 64-year-old woman admitted to state hospital following sudden onset of abdominal pain.Previously she was diagnosed as esophageal hiatal hernia. On physical examination, abdominal distension with mild tenderness was recognized. Pulse rate and blood pressure were 120 per min and 80/50 mmHg. The initial laboratory investigations revealed WBC 3,700 per ml, urea 230 mg/dl, creatinine 6.3 mg/dl. Chest graphy revealed unusual gas shadow in the left thorax (Fig. 1). CT demonstrated intraperitoneal free air, ascites, and the prolapsed stomach in the left thorax (Fig. 2). An urgent laparotomy was performed revealing dirty ascites.The gastric fundus and corpus were incarcerated in paraesophageal space (Fig. 3). A perforation 15 mm in size was recognized in the fundus. The perforation was sutured primary and crurorraphy was performed. The patient required respiratory support and died on the 14th postoperative day due to multiple organ failure and septic shock.

Conclusion: The contents of paraesophageal hernia commonly include the gastric fundus or corpus. Paraesophageal hernias can cause lethal complications, including gastric obstruction, strangulation, perforation, and hemorrhage. Paraesophageal hernias can usually be repaired easily, even using the most recent laparoscopic technique (2). Thus, because of the very serious potential complications inherent in cases such as ours that can result from an untreated paraesophageal hernia, we recommend that elective repair be carried out, even in asymptomatic patients.

443 Solitary Fibrous Tumor of Lesser Omentum: Report of a Rare Case

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Introduction and objectives: The solitary fibrous tumor (SFT) of peritoneum, especially arising in lesser omentum is extremely rare. We report a case of lesser omentum soliter fibrous tumor, causing pain and abdominal fullness with its mass effect.
Case: A 56-year-old male was admitted to our hospital, due to an intraabdominal mass lesion, epigastric pain, abdominal fullness and vomiting episodes. On physical examination, a hard, non-tender mass was palpated in the epigastric region. Computed tomography (CT) showed, an approximate $11.5 \times 8.5 \times 7.5$ cm sized solid mass with fibrous capsula between left liver lobe and stomach. At laparotomy, a yellowish brown solid tumor with hard consistency was found on the lesser omentum. The tumor was not adhered to the adjacent structures and could be resected completely. Postoperative course was uneventful and no recurrence was determined during follow up.
Results: Histopathologic examination diagnosed the mass as a SFT. The tumoral cells were spindle-shaped and did not present mitotic activity or atipies and showed very low proliferation index with Ki 67 (<1%) and immunohistochemical positivity for CD 34 and negativity for c-Kit (CD 117), actin, and S-100.
Conclusion: Although SFT are rare, especially in the abdomen of adults, are generally benign but malignant cases have been reported. In our case, the tumor has a benign character shows neither mitotic activity nor nuclear atypical. This is the third case of soliter fibrous tumor of the lesser omentum described in the English literature.

444 A Very Rare Case of Duodenal Ulcer Perforation and Gastric Hamartoma

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Introduction and aims: A single hamartomatous adenoma of stomach is rare. Gastric hamartomatous polyps are usually multiple, familial and assosciated with other syndromes. They are also associated with chronic *Helicobacter pylori* infection, acid hypersecretion and predisposition to gastric cancer. This is the first case of gastric hamartoma which is coexistent with duodenal ulcer perforation.
Case: A 59-year old male admitted to our hospital with complaints of stomach ache, nausea and vomitting. Because there was free air under right subdiaphragmatic surface on chest X-ray, an emergency operation was performed. There was a perforated ulcer on the first part of duodenum and a large quantity of bile mixed with blood in the abdominal cavity. On further exploration a tumoral mass which was about 3 cm in diameter was found on the stomach corpus. Because of possibility of malignancy, a subtotal gastrectomy including the perforation zone was performed. Histologically the tumor was well circumscribed and it consisted of uniform, clear cells. At first, it was thought to be metastatic lesion from kidneys or other organs. In this context, all body was scanned however no pathology has been identified. Later on, the tumor was approved to be hamartomatous adenoma and *Helicobacter pylori* was positive. Postoperative course was entirely uneventful.
Conclusion: Gastric hamartomatous adenomas, despite of their rarity, can play a role in developing duodenal ulcer.

445 Investigation of Apoptotic Index and P53 Expression in Livers of Rats in which Obstructive Jaundice was Generated

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Objectıve: The aim of this work is to determine the level of apoptosis, which is believed to hold an important role in septicemia process that affects mortality and morbidity in obstructive jaundice, in lingers of rats that were experimentally subjected to obstructive jaundice.
Materials and methods: The experimentals were separated into two goups of eight. Choledoch was isolated in each group and while surgery was ended at this level in the control group, choledoch was tied with 4–0 silk from two different places and cut between ligatures full fold. Experiment animals were operated for the second time in the postoperative seventh day for liver sampling and sacrification-aimed histological analysis through the old incision with anaesthesia provided. To exhibit the p53 expression immunohistochemically, anti-p53 Clone DO-7 was used as the primer antibody and HRP as the secondary antibody. Samples taken for the determination of apoptosis were painted by the TUNEL method.
Fındıngs: In the evaluation of apoptotic cells in liver cells, apoptotic cells were observed to widely exist in the liver tissue and it was determined that they exhibited dense accumulation in some regions. In the immunohistochemical evaluation made for evaluation of p53 expression in hepatocytes, p53-positive hepatocytes were determined to exist quite widely in the tissue samples taken from the livers of rats in the experiment group.
Result: Consequently, in this study we determined that in the obstructive jaundice group, both apoptotic index and, as a result of the immunohistochemical studies, p53 expression increases in the liver.

446 The Effects of Trimetazidine in the Experimental Model of Acute Pancreatitis Formed by L-Arginine

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Introduction: Acute pankreatits (AP) has a high morbidity and mortality. Its physiopathogenesis has not been enlightened obsolutely. In acute pancreatitis; interstitiel edema, hemorrhage and necrosis develop in pancreas and adjacent tissues with vascular damage. Trimetazidine is an antiischemic, antioxidant and cardioprotective agent. This study aims to investigate trimetazidine effects on acute pancreatitis.

Methods: Three groups are formed with 45 male Wistar-Albino rats weighed 180–200 g. 0.9% NaCl in injected intraperitoneally to the group 1 (n = 15). Acute pancreatitis is formed in group 2 (n = 15) and group 3 (n = 15) via injection of L-arginine. In group 3, 30 min and 12 h after the formation of AP trimetazidine 5 mg/kg/day in two equal doses injected intraperitoneally. In all groups amylase, TNF-alfa, IL-1b, IL-6, LDH, AST and ALT levels and histopatologic changes of pancreas were examined.
Results: Amylase, TNF-alfa, IL-1b, IL-6, LDH, AST and ALT levels and histopatologic changes; tissue edema, hemorrahgia, aciner cell necrosis and perivascular inflamation levels showed significant decrease in the treatment group compare to control group ($p < 0.001$).
Conclusion: trimetazidine protects pancreas tissue by via decreasing the biochemical and histopathological changes in the early stages of acute pancreatitis.
Keywords: Acute pancteatitis, L-arginine, Trimetazidine

447 Effects of Different Suture Materials on Safety of Colonic Anastomosis in an Experimental Model of Peritonitis

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Introduction: The risk of leakage from an anastomosis is higher in large intestine. In emergent colon operations primary anastomosis is avoided especially on the left colon, and multi-step procedures are preferred if there is a dirty abdomen. The aim of this experimental study was to compare different suture materials in left colonic anastomosis in presence of peritonitis.
Metods: This study was conducted on 21 Wistar-Albino rats by dividing them in 3 groups of equal numbers. After median laparotomy, the whole layer of left colon was cut 2 cm over the pelvic peritoneum and fecal contamination was performed. One day later, the abdomen was opened again under general anesthesia. The abdomen was washed with SF before starting colonic anastomosis. For colonic anastomosis; vicryl + silk was used in the 1st group rats, PDS was used in the 2nd group rats, and coated vicryl plus antibacterial suture and silk was used in the 3rd group rats.
Results: Tissue hydroksiproline, anastomosis bursting pressures and histopathologic findings on the anastomosis line were evaluated on the 10th postoperative day. The highest anastomosis bursting pressure was found in Group III ($p < 0.05$). The highest tissue hydroksiproline level was found in Group III ($p < 0.005$ Group I-III, Group II-III). When histopathologic findings were evaluated by comparing three groups, the healing of the intestine tissue score was found to be highest in Group III ($p < 0.005$, Groups I–III).
Conclusion: Consequently, it was observed that using antibacterial suture increased resection safety in the presence of peritonitis and anastomosis safety in primary anastomosis.

448 Amyand'S Hernia: two Case Reports

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Introduction and objectives: The chance of finding the vermiform appendix within an inguinal hernia occurs in approximately one percent of the cases, and is known as amyand's hernia. Appendicitis within an inguinal hernial sac is rare.
Materials and methods: We present two amyand's hernia cases: one with a vermiform appendix and one with a perforated appendicitis. Case 1: An 86-years-old man presented with a 20 years history of bilateral inguinal mass. Ultrasound examination described a hernia which contains mobile bowel segments inside, on the right side. The appendix was obsereved edematous and hyperemic in the hernial sac. An appendicectomy was done. Further exploration of the bowels revealed a meckel diverticulitis which was managed by a wedge resection. Case 2: A 57-years-old woman presented with one week history of an inguinal mass, pain and anorexia. Abdominal computerized tomography demonstrated an incarcerated right-sided inguinal hernia.The hernia sac was filled with the perforated appendix. Appendicectomy was carried out.
Results: Postoperative recovery was uncomplicated, the patients were discharged without any complication.
Discussion: Acute appendicitis or perforation of the appendix within the hernia sac simulates perforation of the intestine, and does not have specific symptoms or signs. Preoperative clinical diagnosis is very difficult and the diagnosis is made intraoperatively. Since the absence of any pathognomonic radiological features, the value of preoperative computed tomography is limited. Treatment of hernial appendicitis is an appendicectomy with suture hernial repair. The management of a non-inflamed appendix is debatable. The usual practice covers reduction of the appendix, and mesh repair.

449 Restoration of Intestinal Continuity in Acute Mesenteric Ischemia. Use of an Old Method in a New Age

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Background: Acute mesenteric ischemia frequently requires extensive bowel resection. Primary anastomosis is unsafe necessitating exteriorisation of proximal small bowel and distal colon. Inevitably, therefore, patients are left with high output stomas with concomitant fluid and nutritional problems.
Methods: We present two cases of acute mesenteric ischemia both of which required extensive bowel resection. In both patients we re-established intestinal continuity early by fashioning a Bishop Koop type of reconstruction.
Results: Case 1: A 47 years old female was found to have ischemic bowel at laparotomy and needed extensive small and large intestinal resection. On day seven after primary surgery intestinal continuity was re-established using a Bishop Koop type reconstruction. This markedly improved the fluid and electrolyte balance and reduced net losses. By day 14 we were able to wean the patient off adjuvant parenteral nutrition and six months after primary surgery colostomy was closed. Case2: A 71 years old male underwent extensive small and large bowel resection secondary to ischemic bowel with exteriorisation of both ends. In the immediate post-operative period the patient had a high output jejunostomy and was dependent on total parenteral nutritional support. A Bishop–Koop procedure was performed on day 11 and by day 37, the patient was completely independent of any adjuvant nutritional therapy. Five months from primary surgery colostomy was closed.

Conclusion: Bishop–Koop procedure may be used safely in selected group of patients, with potential advantages of early restoration of intestinal continuity, better metabolic and nutritional management and easier closure.
Author to editor: This abstract is report of two cases of short bowel syndrome as a result of extensive mesenteric ischemia. Use of an early Bishop-Koop anastomosis in place of primary anastomosis resulted in much easier metabolic and nutritional management of this patients. Authors hope this report attracts the interest of sceintific committee and will be looking forward to participating in 10th Europaen Congress of Trauma and Emergency Surgery.

450 The Management of Traumatic Pancreatic Pseudocysts in Children

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Introduction and objectives: The management of pancreatic pseudocysts which occur after blunt abdominal trauma in children is still controversial. In this study, we present our experience therapeutic approach of pancreatic pseudocysts that occur after trauma.
Methods: We evaluated 9 patients with traumatic pancreatic pseudocysts who admitted to our clinic between 2003 and 2007. We performed ultrasonography, computerize tomography (CT) and blood amylase level for all patients.
Results: There were eight males and one female. The average age was 9.2 years (range 6–15 years). The mechanism of injury was bicycle handle bar injury in four, falls in three, assault in one and motor vehicle accident in one patient. Abdominal pain was the most common symptom. The median size of cysts was 10.3 cm (range 5–17 cm). The time interval between trauma and pancreatic pseudocysts was 17 days (range 9–30 days). Of the nine patients, four (44.4%) occurred in less than 2 weeks. All patients were initially followed up conservatively. Three patients (33%) were successfully treated conservatively, while 6 patients (66%) required intervention either by percutaneous radiological drainage (4), cystogastrostomy (1) and external drainage with laparotomy (1). Complication developed in two patients (septic shock, persistent hyperamylasemia). No patient died.
Conclusion: Traumatic pancreatic pseudocysts may occur short after traumatic injury in children. All patients with traumatic pancreatic pseudocysts should be managed by conservative approach initially. However, if the cyst is cause of gastric outlet obstruction or the size of cyst is bigger than 6 cm, interventional management may be required.

451 Factors Effecting Mortality in Patients with Gunshot Injuries

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Purpose: We planned this study in order to determine the effective factors on mortality on the patients exposed to gunshot injuries with more than one organ.
Methods: We retrospectively reviewed the hospital records of 714 patients admitted to Emergency Department of Dicle University, between January 2000 and December 2004. The reasons that we thought to be effective on mortality between alive Group (Group 1) and dead Group (Group 2) such as old age, sex, aimed of suicide, long barreled injuries, pellet injuries, contact/near contact shot, delayed admission time, serious anemia during admission, presence of shock during admission, more than four entrance wound, injury areas, serious cranial injury, serious thorax and abdominal injuries, extremity vascular injury, femoral artery injury, administration of multiple transfusion, hospitalization time and trauma scores as Glasgow Coma Scale revised trauma score, penetrating abdominal trauma index were analyzed.
Results: Of patients, 616 were males and 98 were females. 84.9% of the patients were alive, while 15.1% died. Mortality rate was 15.1%. The mean age was 27.5 years. As a result of unvaried statistical analyzes, we determined that aimed of suicide, presence of serious anemia during admission, presence of shock, presence of serious cranial trauma, serious thorax injury, serious abdominal injury, femoral artery injury, multiple blood transfusion, GKS 0–7, GKS 8–12, low RTS were significant factors on mortality.
Conclusion: Multivariate analysis showed that serious anemia during admission ($p = 0.001$), serious cranial injury ($p = 0.000$), serious abdominal injury ($p = 0.012$) and low RTS ($p = 0.000$) were independently significant in predicting mortality.

452 Lesions of Bile Ducts During Laparoscopic Cholecystectomy

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Aım: To improve results of surgical treatment of patients with bile ducts lesions.
Materials and methods: There were observed 14 patients with ''fresh'' bile duct lesions while performing laparoscopic cholecystectomy, being treated between 2000 and 2008.
Results: Six cases of lesions, diagnosed during operation. To three of them were performed recovery of bile duct using drainage; to another three – hepaticojejunostomy without transhepatic drainage.
Eight cases of lesions, diagnosed in early post-operative period. To three of them, there were performed external drainage of bile duct, presiding hepaticojejunostomy after 2 months. To 2 patients, with complete clipping of hepaticobiliary duct – external drainage, using T-form tube. To 3 patients with diffused biliary peritonitis were acted hepaticojejunostomy with loop of Roux.
Conclusion: In case of intra-operation lesions of part of bile ducts, there can be performed stitch and drainage using T-form tube through stump of cystic duct. In case of complete cut of bile duct primary plastic operation in most cases lead to stenosis. Operation of choice is hepaticojejunostomy without transhepatic drainage.

453 A Case of an Ileus by a Gastrointestinal Stromal Tumors of the Small Intestine

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Introduction: Small-bowel tumors account for 1–5% of GI tumors. The most common lesions are small bowel tumors and vascular anomalies. They may involve any segment of the small intestine but are most often located in the jejunum or ileum. The main symptoms are bleeding and obstruction which is caused by the growing tumor. Acute small bowel obstruction is relatively rare in small bowel tumors.
Case: A 59-year-old woman presented to the emergency department with abdominal pain, and distention. Her medical history was unremarkable. Physical examination revealed tenderness and rebound in right lower quadrant diagnosed as acute appendicitis previously. Initial laboratory values indicated an elevated WBC count as 16,700/L. Computed tomography revealed a $5 \times 7 \times 8$ cm mass in lower right quadrant (Fig. 1). The patient was subsequently referred for surgical evaluation. A $9 \times 9 \times 4$ cm ileal mass which had an intraluminal component but predominantly extramural was observed at exploration (Fig. 2). Segmenter ileal resection and primary anastomosis were performed. The specimen contained spindle cells that stained strongly for C-117, consistent with a diagnosis of malign GI stromal tumor.
Conclusion: We conclude that jejunoileal lesions are a rare cause of obstruction but can be associated with substantial morbidity. Many GIST tumors when smaller are asymptomatic or have vague non localizing abdominal symptoms. Malignant GIST tumors which are endophytic may present with evidence of obstruction or bleeding. Exophytic tumors present as a large mass lesion or if perforation has occurred with evidence of peritonitis. The only effective therapy is surgical removal, and the long term survival is 50% at best. Chemotherapy and radiotherapy do not increase the salvage rate.

454 Hemodynamic Instability Due to Intratumoral Hemorrhage in a Giant Retroperitoneal Alveolar Rhabdomyosarcoma in Adult: Case Report

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Introduction: Rhabdomyosarcoma (RMS) is a malignant soft tissue tumors related to myogenic lineage. Alveolar rhabdomyosarcoma (ARMS) is one of the main histopathologic patterns and must be differentiated from other small round cell tumors.These pediatric tumors are approximately 5% of all childhood cancers and nearly 50% of soft tissue sarcomas.In contrast, RMS is detected 2–5% in adults.
Case: 37-year-old male presented with subacute onset of abdominal distension.On physical examination, an abdominal giant mass fully filled left hypochondrium had palpated with tenderness. Initially hemodynamic parameters were stabile. During follow up hemodynamic instability occurred with hemoglobin were 8.7 g/dl and TA: 90/40 mmHg, heart rate 142 per m. An abdominal computed tomography (CT) revealed a large,left sided abdominal mass extending between renal hilus and pelvis. The mass was 30×20 cm with internal septation and semisolid property (Fig. 1). Urgent operation was performed due to hemodynamic instability due to intratumoral hemorrhage. On exploration a giant cystic mass with 30×30 cm in size originated from left psoas muscle was found. Tumor resection with anterior abdominal wall was performed (Fig. 2). Abdominal wall defect was repaired with PTFE mesh. Pathologic examination revealed alveolar rhabdomyosarcoma with CD99, vimentin, myoglobin positive reaction. The postoperative course uneventful and the patient was discharge on the 19th postoperative day. The patient had adjuvant radiotherapy, chemotherapy and 8 mouths follow up without recurrence.
Conclusion: RMS of the psoas muscle in adults is diagnosed rarely. Multimodal therapy, including adjuvant chemotherapy and radiotherapy after curative surgery is the most proper treatment modality. Intratumoral hemorrhage is a rare clinical entity that can present as a life-threatening event. The spontaneous form is the most infrequent,causing significant morbidity and representing a diagnostic challenge. Urgent surgical intervention is indicated when the hemodynamic instability occurs.

455 Splenic Abscess a Diagnostic Challenge in Emergency Surgery

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Introduction: Splenic abscess is a rare entity,with a frequency of 0.14–0.7% in autopsy series.Mortality rate is still high, up to 47%, and can potentially reach 100% among patients who do not receive antibiotic treatment.
Case 1: 63 year-old woman presented with fever and left upper abdominal pain for 15 days. Hepatomegaly and tender splenomegaly were present.CT of the abdomen revealed 5×8 cm hypoechoic lesion in the spleen (Fig. 1). Initial laparoscopic approach was performed but failed due to inappropriate anatomy. Conventional splenectomy was done and at exploration there was 6×8 cm abscess in spleen. The patient was dischared on the eighth day of operation. Case 2: 43 year-old woman admitted with femoral artery thrombosis.Thromboembolectomy and leg amputation was performed by cardiovascular surgeons.She was consultated with fever and left upper abdominal pain on the second day of operation. CT of the abdomen revealed a 14×8 cm mass with air fluid levels in the spleen (Fig. 2). Splenectomy was performed and a 12×10 cm abscess was observed in spleen.The patient died on the second day of operation due to sepsis.
Conclusion: Splenic abscesses have diverse etiologies. The most common is hematogenous spread originating from an infective focus

elsewhere in the body. The most isolated microorganisms are gram-positive cocci, Gram-negative bacilli but up to 50% case the pathogens are polymicrobial. The signs and symptoms of splenic abscess are not very specific. The classical triad of fever, left upper quadrant pain, and splenomegaly is seen in only about one third of patients.Percutaneous drainage is a minimal invasive method alternative to surgery. Depending on available expertise, laparoscopic or open procedures can be considered.

456 Temporary Ileostomies in the Emergency Abdominal Procedures

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Temporary fecal diversion may be desired after many emergency abdominal procedures.Indications:
A defunctioning loop ileostomy to protect the anastomosis of the distal small bowel;the colon in case of intra-abdominal sepsis,ileus,anastomotic dehiscense.
A proximal stoma after resection of the perforated small bowel and colon, closure of the distal stump in case of severe generalized peritonitis without the possibility to perform a primary anastomosis.
A loop ileostomy to prevent bacterial translocation in case of pancreatitis.
Retrospective analysis of clinical data of patients admitted between 2004 and 2008 for emergency operation requiring laparotomy and the construction of one or more small-bowel stomas. 32 patients had ileostomies created for temporary fecal diversion after emergency surgery including bowel obstruction was the most frequent cause of peritonitis (11 cases),followed by anastomotic leakage and peritonitis (7), acute mesenteric infarction (4 cases), intestinal perforation (3 cases), strangulated incisional hernia (3 cases), acute abdomen of Crohn disease (2 cases), peritonitis carcinomatosa and frosen pelvis (2 cases), Mean age was 57.5 years (range 23-87), being 16 males and 16 females. Overall mortality was 62% (20 patients). 11 patients died on the first 7 days postoperatively.
Indications, morbidity, mortality and problems involving the ileostomies in emergency abdominal surgery urgency are herein discussed. In the majority of patients with acute abdomen doing ileostomies,lacking of vital capacity of bowel wall as well as insufficiency of previously laid sutures were revealed, which forced a surgeon to resort to resection; in such cases the method of choice for decompression should be the application of ileostomy.

457 Closed Efferent Loop Syndrome Mimicking Cholestatic Jaundice after Whipple Procesure. Case Report

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Postoperative jaundice is often multifactorial. A precipitating or causative factor may be identified but seldom can a specific therapy be offered. The late complications were mainly presented by the biliary ducts cicatricial stricture, the jaundice and cholangitis recurrency.
In this report, we described an extremely rare case of a 29-year-old woman presenting with pain in the right upper quadrant, jaundice, and weight loss in whom a Whipple procedure was performed. USG and MR cholangiography showed that dilatation of intrahepatic and extrahepatic bile ducts and hepaticojejunostomy line. MRCP also showed that, there was a closed jejunal loop related with hepaticojejunostomy. Obstruction by local tumor recurrence and infiltration of the efferent jejunal conduit between the proximal hepaticojejunostomy and the duodenojejunostomy led to closed loop syndrome and jaundice. Frozen sections by direct incisional biopsy revealed a recurrent tumor invasion.
A previously unreported late complication after Whipple resection of the head of the pancreas was recognized as ''closed efferent loop syndrome'' mimicking obstructive jaundice. The case was accepted as inoperable because of tumor invasion to the jejunum, transverse colon, and surrounding tissue. Roux-en Y type jejunojejunostomy was performed. The patient had an uneventful postoperative course.

458 Preventing Delay of the Diagnosis in Acute Abdomen

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Acute abdominal pain is the most frequent reason for admission to emergency clinics. Delay in operation increases morbidity and mortality at surgical acute abdominal patients. We reviewed mortality and morbidity rates in delayed acute abdomen operations and preventing delays.We analysed 64 patients operated with delayed acute abdomen in Dr. Lütfi Kırdar Kartal Education and Training Hospital during 2004–2009. Delayed acute abdomen was defined as 3 days or more delay in operation after appearance of first symptom. Mean delay time to operation was 5 days (3–12). There were 28 female and 36 male patients. Mean age was 42 years (17–76). Of 37 patients operated due to perforated appendicitis, cecal fistula developed in 5 patients (two required right hemicolectomy), intraabdominal abscess developed in eight patients. Of 12 patients operated due to peptik ulcus perforation, three developed duodenum fistula. They closed with conservative treatment. Four patients were operated due to colonic diverticulitis perforation, six patients due to small bowel perforation and 5 patients due to colonic tumour perforation. Mortality rate was 12% (8), morbidity rate was 24% (16). By examining reasons for delays, 87% (56) of patients were hospitalized by a different health centre and transferred to our hospital because of unsuccessful treatment. Applying medical therapy to undiagnosed patients delays appearance of clinical signs. We frequently face such late presenting patients. To prevent delay in diagnosis of acute abdomen, a detailed and suspicious physical examination is necessary. Undiagnosed patients should be referred to tertiary hospitals and treated immediately. This way, morbidity and mortality rates will be decreased.

459 Emergency Surgery Interventions in Patients Equal to or Older than 70 years

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Mean life expectancy is increased in both men and women with the growing up of health care servics and preventive medicine procedures. Diagnosis and treatment of the diseases differs in patients equal to and older than 70 compared to younger patients. We aimed to investigate our emergency surgery interventions in the patients equal to and older than 70. We aimed to investigate, retrospectively, the patients equal to and older than 70 who had been treated in Dr. Dr. Lütfi Kırdar Kartal Education and Research Hospital II. General Surgery Clinic, according to age, gender, surgery type, and mortality. 72 cases are investigated between 2003 and 2008. Mean age of the cases was 78.2 years (70–91 years). Forty patients were male and 32, female. Twenty two cases were operated due to mechanical intestinal obstruction because of malignancies, and 32 cases because of benign diseases. Twelve cases were operated due to intraabdomibnal abscess and six cases due to gastrointestinal bleeding. Our mortality rate was 30.5% (22 cases). In patients equal to and older than 70, besides the primary disease, additional pathologies as diabetes, hypertension, atherosclerosis are found. These problems that can cause mortality during and after general anesthesia should be carefully evaluated preoperatively. In gastrointestinal malignities, by treating the conditions aggrevating the morbidity such as nutritional status or respiratory functions of the patients, anastomotic leaks can be prevented. We believe that, in preventive medicine, in the patients of this age group, performing surgical interventions electively after necessary preparations will lead to a decrease in mortality and morbidity.

460 Traumatic Asphyxia: an Autopsy Case

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Introduction: The form of mechanical asphyxia where respiration is prevented by the external pressure on the body: a large weight compressing the chest or abdomen, wedging of the body within a narrow space death in large crowds is traumatic asphyxia.
Case: A 19-year-old man was found compressed by a motorboat in the garage while he was working for installation of the boat. The face, neck and upper part of the chest were congested and many petechiae were observed on the conjunctivae. Ecchymotic bruises were observed on the right cervical, lower chest, upper abdominal regions and open fracture of the right humerus, ecchymotic abrasion on right anterior superior iliac spine line were detected. Subcutaneous haemorrhages in the chest wall and bleeding without subcutaneous haemorrhage in the inferior part of the right sternocleidomastoid region were observed during the internal examination. Fractures of the right third and fifth ribs which were accompanied by bleeding in the surrounding soft tissues and muscles, and ecchymoses over the right sixth rib without any fracture were also observed. Macroscopic examination of the lungs revealed congestion, subpleural superficial bleeding areas and histopathological examination showed hemorrhagic alveolar oedema. All the internal organs and big vessels were intact. There was no hemorrhage in the thoracal and abdominal cavity. Toxicological analysis was negative.
Conclusions: In the presented case, the impact cause of the chest compression was distinctly determined by the autopsy and criminal investigation. Death was reported as asphyxia by the thorax compression without other lethal factors.

461 Management of Animal Bites with Tissue Injuries

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Purpose: The purpose of this prospective study was to evaluate safety of early surgical interventions in the repairment of animal bites with tissue injuries.
Materials and methods: Tissue repairment and/or reconstruction were done, total in 34 patients. 20 of them were dogs', 14 of them were horses' or donkeys' biting between the years 2003–2007. Wound sterilization and debridement were made before repairment. Rabies and tetanus prophylaxis were done for all patients. Tissue repairments after animal biting were made early and promptly. Patients having animal injuries, apart from biting were not included in the study.
Results: 22 of the patients were male and 12 of them were female. The minimum age of the patient was 1.5 and the maximum was 84, and the average age was 39. In 24 cases head-neck, in eight cases extremities and in two cases body were biting areas. Horses' or donkeys' bitings were seen particulary in ears. In these animals' biting tissue lose was emphased. We prefered primary saturation in 20 cases, skin greft in ten cases and repairment with flap in five cases. Finger amputation was required in one of the patients. Total ear reconstruction was done gradually in a patient. No infections observed in patients after the surgical interventions.
Conclusion: We concluded that, early tissue repairments may done after wound sterilization and debridement, safely.

462 The Role of MDCT in Craniocervical Junction Pathologies: Pictorial Review

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Introduction: Craniocervical junction pathologies are seldom pathologies having a vital importance because of their location. That's why preoperative correct evaluation and detection of relation with adjacent tissue of this area pathologies is important for proper

treatment plan. Multidetector computed tomography (MDCT) imaging is an improving and being a widely used method recently in many areas of medicine. It is possible to evaluate the peripheric vascular structures, anatomic variations or vascular pathologies with MDCT angiography (MDCTA).
Methods: The arcuate foramen is an anatomical variant of the atlas vertebra: anterior and posterior osseous bridges or ponticles can arch over the vertebral artery, to a greater or lesser degree, transforming the arterial groove into a canal. Dissection of the vertebral artery leading to thrombotic occlusion or ischaemia from narrowing of the arterial lumen has been described in trauma. There are fistula between a dural branch of the spinal ramus of a radicular artery and an intradural medullary vein in spinal vascular malformations. MDCT angiography is feasible and is an alternative technique in diagnosis spinal vasküler malformations. The craniovertebral junction (CVJ) is a funnel-shaped structure comprised of the clivus and foramen magnum and the upper two cervical vertebrae. The most frequent neoplastic lesions of the craniovertebral junction are meningiomas, neurinomas, chordomas, paragangliomas, epidermoids, dermoids and chondrosarcomas.
Conclusion: In this presentation, pathologies seen in craniocervical junction (congenital variation, trauma, vascular malformation and tumor) were discussed with figures and compared with the literature.

463 Incomplete Small Bowel Obstruction Misdiagnosed as Depressive Anorexia

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Introduction and Objectıves: Small bowel obstruction (SBO) is very rare. Although the diagnosis is straightforward, some patients with intermittant and low-degree symptoms could be misdiagnosed as psychiatric disease. We presented here a patient with intermittant symptoms of ileus treated as psychiatric disease
Case: A 44 year old male patient was referred from phsyiciatry clinic to our department with complaints of weight loss, nausea and malnutrition. His medical history revealed a laparoscopic appendectomy 6 months ago. He emphasized that his complaints started shortly after the operation and increasingly got worse. He was admitted to hospital 3 days after operation with symptoms of ileus and managed conservatively. The intermittant abdominal pain and nausea continued. Since the pain was intensified after meals, patient refused eating. During the period of 6 months he lost 20 kg of weight. After numerous radiological and endoscopic investigations patient was referred to psychiatry due to persistent anorexia. After short psychiatric medication, he was referred to our surgical unit. Multislice abdominal computerized tomography and and enteroclysis of small bowel clearly demonstrated an obstruction in the jejunal segment of the intestine. At laparotomy, small bowel obstruction was detected and segmental resection was performed. Postoperative period was uneventful and patient was discharged from hospital on postoperative day 6.
Conclusions: The diagnosis of anorexia and nausea due to SBO is relatively difficult. The patients were sometimes misdiagndosed as having psychiatric disease. Before starting psychiatric medication, they must be reevaluated for all putative causes of SBO.

464 Duodenal Perforation due to Biliary Stent Migration

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Introduction: Endoscopically placed biliary stents are a well-established procedure for the treatment of benign and malignant biliary disease. Duodenal perforation may occur at the time of insertion of a biliary endoprosthesis or following endoscopic manipulation of such a stent.
Methods: We report a case of duodenal perforation complicating stenting for biliary fistula in surgery for hepatic hydatid cyst.
Case: A 74-year-old man was admitted to a local hospital following the sudden onset of abdominal pain,distension with nausea and vomiting. He developed a biliary fistula after surgery for hepatic hydatid cyst 2 months ago. Endoscopically placed biliary stent was performed for the treatment of biliary fistula at the same hospital 2 months ago.On examination, marked abdominal distension with mild tenderness was recognized. His pulse rate and blood pressure were 120/min and 80/50 mmHg, respectively. Abdominal X-ray showed two foreign body images and subdiaphragmatic free air. Emergency laparotomy revealed dirty ascites and perforation of the third portion of the duodenum by the plastic stents. The second stent was found at pericecal area. After extraction the plastic stents and irrigation with isotonic sodium chloride solution, the site of perforation in the duodenum was primary reparing and triple tube placement performed.
Conclusion: Endoscopic retrograde cholangiopancreatography (ERCP) is considered to be the most difficult endoscopic procedure in gastrointestinal endoscopy, and is associated with potentially severe and sometimes life-threatening complications such as duodenal perforation. Surgical statistics indicate the importance of early diagnosis and treatment for duodenal perforation.

465 Tick Bites in Emergency Service

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Introduction and objectives: Ticks play an important role in transmitting several infectious agents, such as viruses, bacteria, spirochetes, rickettsia, and parasites. In this study, we analysed the demographic and clinic characteristics of the patients who admitted to emergency service due to tick bite.
Methods: In this study, patients were selected from cases of tick bite admitted to the department of emergency medicine of Ankara Numune Hospital during the 2007–2008 periods. Detailed histories and some blood tests of patients were taken, and the body of the tick grasped gently avoiding to inject more salivary toxins.
Results: Totally 301 patients admitted to hospital in this period. The most frequent symptoms at administration were malaise, myalgia, and fatigue. Hemorrhagic manifestations were observed in 28 patients and bleeding was from multiple sites in 15 patients. Other symptoms were watery diarrhoea, skin eruption, macular rash, and petechia–ecchymosis. In the comparison of the clinical features and laboratory results of the surviving and the patients

who died, we found that the rates of fever during hospitalization, confusion, neck stiffness, bleeding from multiple sites and presence of petechia/ecchymosis were higher in the patients who died than in the surviving ones. Additionally, the mean values of ALT, AST, LHD, CK, PTT, international normalized ratio (INR), and urea were also higher and mean PLT counts were lower in the patients who died.

Conclusion: The acute tick-bite reactions show special histologic features, which are unquestionably related to the particular morphology and physiology of the mouthparts of these arthropods.

466 Degos' Disease (Malignant Atrophic Papulosis): cause of Nontraumatic Perforations of the Small Bowel

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Introduction: Malignant Atrophic Papulosis or Degos' disease is a very rare vasculopathy affecting multiple systems.

Objectıve: When associated with the gastrointestinal tract or central nervous system, patients with Degos' disease have a poor prognosis and a high mortality.

Materıals and methods: We report a case of Dego's disease with gastrointestinal involvement, which ultimately caused peritonitis, sepsis, and death, despite all treatment measures. A 29-year-old man was admitted in june 2008 on the surgical yard of our hospital with acute generalized abdominal pain and multiple skin lesions of the penis. The patient underwent appendicectomy 6 weeks before presenting at another hospital unit. The exploratory laparotomy showed two perforation sites of the ileum. After the procedure, the patient suffered spontaneous recurrent perforations of the small bowel and another three reinterventions. Neuroradiologic reports describe central and peripheral nervous system involvement who presented with progressive clinical deterioration and a meningovascular pattern at cerebral MRI. Despite aggressive treatment with he died in 3 months after his first surgical intervention.

Conclusion: In a patient with acute abdominal pain and typical atrophic papules, clinicians should retain a level of suspicion for Degos' disease with gastrointestinal involvement, even though it is rare.

467 Results of Prosthetic Graft Repair of Strangulated Hernias

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Introduction and objectives: To determine the outcome of prosthetic graft repair of patients with strangulated hernia in the early postoperative period and their follow ups.

Methods: Patients with strangulated hernias who were treated by prosthetic graft repairing in our hospital's emergency service between 2002 and 2008 were evaluated retrospectively. Morbidity, mortality and recurrence rates were determined.

Results: Totally 46 patients (33 men and 13 women) were evaluated. The mean age was 55.7 (20–97) years and the mean follow up period was 38 (7–68) months. The localization of the hernias were as follows: 33 inguinal hernias, seven femoral hernias, two umblical hernias, two paraumblical hernias, one epigastric hernia and one inguinal + femoral hernia. All of these strangulated hernias were treated with prosthetic graft repairing. In addition to these hernia repairs, in the same operation sessions three hydrocele repairs, three omentum resections, two partial small intestine resection and anastomosis, one lymphadenectomy, one orchiectomy and one laparotomy were done when necessary. In the early post operative period four patients died because of other diseases not related with the surgical procedures or hernia itself. Wound infections were observed in three patients and they were treated with antibiotics and anti inflammatory drugs.- Wound haematoma was observed in one patient and healed with drainage and drug treatment. Neither in the early post operative nor in the follow up periods there were no complications that we need to excise the graft material.

Conclusions: Prosthetic graft repair can be used for the treatment of strangulated hernia patients who addmitted to emergency services.

468 Emergent Surgery in a Patient with Incarserated Rectal Prolapse: a Case Report

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Rectal prolapse describes the protruding of the entire rectum or some parts of the rectum from anus. It is caused by the weakening of the ligaments and muscles that hold the rectum in place.It is associated with advanced age, long term constipation or diarrhea, childbirth, previous surgery, and sphincter paralysis. Trauma may cause sphincter paralysis and can be associated with rectal prolapse. It usually begins with prolapse of the rectum during defecation or Val Salva movement and usually progresses to a chronic stage. Long term prolapse can cause ulcerations, bleeding and in some cases perforation if not reducted.

A 51-year-old male presented with rectal prolapse, bleeding, abdominal pain. He stated that he could not replace the prolapsed segment for 2 days and has been suffering for 20 years since after he fell from a tree and he had massive bleeding during the last 8 h. Physical examination revealed that a 15 cm segment of the rectum was prolapsed with the whole layers. There were ischemic and necrotic areas and active bleeding from the mucosa. Reduction trial was not successfull. Emergent laparotomy was performed. Bimanual reduction failed.Thus transanal intervention, with sigmoid resection was performed. End colostomy was preferred. No complications occurred the following 6 months and colorectal anastomosis was performed with a preventive ileostomy.

Although rectal prolapse is usually a benign condition it may cause fatal complications such as perforation, necrosis if not reduced for a long time and surgery should be performed promptly in these cases.

469 A Case of Acute Mesenteric Ischemia Due to Rheumatoid Vasculitis

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Introduction: Systemic or localized vasculitis can occur during the course of rheumatoid arthritis. Involvement of gastrointestinal vessels by rheumatoid vasculitis is rare; however, it may lead to acute mesenteric ischemia and subsequent intestinal necrosis that is associated with a high morbidity and mortality.
Case: A case of acute mesenteric ischemia due to rheumatoid vasculitis is presented. The patient was a 41-year-old white female with a 2-year history of rheumatoid arthritis. She was admitted for severe abdominal pain. Physical examination was consistent with acute abdomen. Abdominopelvic CT scan revealed dilated bowel segments with thickened walls, and intraperitoneal diffuse free fluid. Massive intestinal necrosis was encountered during explorative laparotomy, and resection of necrotic bowel segments was performed. The patient was discharged without any major complications.
Conclusion: Surgeons should keep in mind that patients with connective tissue diseases may have acute or chronic forms of mesenteric ischemia due to gastrointestinal vasculitis.

470 An Unusual Presentation of Fork Ingestion with Perforation

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We report a rare case of ileal perforation caused by an ingested 15-cm long fork. A 43-year-old man presented to the emergency department with exhaustion, weight loss and abdominal pain. He had been having pain in the abdomen, nausea and vomiting for the previous 2 days. The patient had received psychiatric treatment, and started to experience weight loss and exhaustion 3–4 months previously. No conclusions could be drawn from physical examination for abdominal tenderness and defence. Direct X-ray showed an appearance conforming to a fork in the intestine and subdiaphragmatic free gas. The patient was sent for emergency surgery, with a diagnosis of ileal perforation and foreign-body ingestion. Most of the ingested foreign bodies that reach the stomach pass through the alimentary tract without complication. Perforation occurs in, 1% of all cases of foreign-body ingestion, usually in the oesophagus. Other sites where perforation can occur are the pylorus, the duodenum, the duodenojejunal flexure, the ileocaecal region and any site of congenital anomalies. Long, thin or sharp objects, as seen in our case causing ileal perforation. Foreign-body ingestion is a possibility to be borne in mind at presentations to the emergency department, especially those with symptoms described in psychiatric cases.

471 Gallbladder Perforations

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Introduction: Perforation of the gallbladder is a rare complication that occurs in 2–11% of all cases of acute cholecystitis. It represents a surgical challenge because of the delay in diagnosis and treatment. Niemeier classified into three categories. We aimed to present our clinical experience with Gallbladder perforations in this study.
Methods: Records of 596 patients with the diagnosis of acute cholecystitis in our clinic between 2004 and 2008 were reviewed retrospectively. Twenty-three (3.8%) of those patients had a perforated gallbladder. The records of age, gender, main symptoms, physical examination findings, radiological and operative findings, type of the surgical procedure performed, postoperative complications, mortality, and the duration of hospital stay after surgery were reviewed for all patients. Perforations due to trauma, iatrogenic causes were excluded.
Results: The diagnosis of gallbladder perforation was made preoperatively in only 8 of 23 patients (35%). Cholecystectomy was performed in 21 patients and partial cholecystectomy and drainage was performed in two patients. Primary closure of duodenum was performed in 4 patients had a cholecystoduodenal fistula. One patient was found to have ischemia of right colon and right hemicolectomy with cholecystectomy was performed.
The average discharge time was 10 days (3–19 days). Four patients (17%) died due to sepsis and multiple organ failure. The morbidity was 26%.
Conclusion: Gallbladder perforation remains as a complication which is difficult to diagnose and it is associated with a considerable morbidity and mortality rates. Early diagnosis and emergency surgical intervention can only improve the outcome of this patients.

472 Negative or Non-therapeutic Laparotomy Ratios

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Objectıve: In this study,our objective was to determine the negative or non-therapeutic laparotomy rate in the cases of trauma patients except for the ones with burn exposure and to compare that rates with previous studies in the Emergency Department of Okmeydanı Training and Research Hospital.
Methods: We retrospectively analyzed the cases of our Emergency Department in 2007 and 2008. We found the negative or non-therapeutic laparotomy ratio and compared it with the results of two other relevant studies we had performed in 1997 and 2003.
Results: In 2 years, 8,988 trauma patients visited our Emergency Department in total, 70% of whom were males and the rest (30%) being females. 8,091 (90%) of these patients were suffering from blunt abdominal traumas, such as motor vehicle accidents, motorcycle accidents and the ones fell from heights and, etc. 712(8%) patients having stab wounds, 185(2%) patients having firearm wounds. Thirty-two of these patients underwent surgery and ten of these operations had negative or non-therapeutic results. Seven patients underwent surgery because of blunt abdominal trauma, two of which had negative or non-therapeutic results; overall ratio being 29%.
Conclusion: In 1997 and 2003 the ratio of negative or non-therapeutic laparotomies were 29% and 11% respectively. The ratio of negative or non-therapeutic laparotomies in our hospital seems to have increased to 29% again in 2007 and 2008. We believe that the reasons of this increase could be the lack of proper registration in our national health system, legal concerns and inadequate number of professional experts of Emergency Services.

473 Transvaginal Evisceration as a Result of Chronic Vaginal Pessary Usage

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Introduction and objectives: Transvaginal evisceration is a rare event and usually occurs after pelvic surgery. In this case we present a spontaneous transvaginal evisceration of distal jejunum and ileum.
Methods: A 89 years old woman admitted to our clinic with transvaginal evisceration. The patient had known weakness of her pelvic structural support. For this reason she was using vaginal pessary. She did not undergo surgery for any reason before. In the exploration at the anterior wall of vagina 4 cm defect was found probably due to decubitus of vaginal pessary. We used a combined abdominal and vaginal approach to examine the small intestines and mesentery for trauma. After reposition of prolapsed bowels we performed total abdominal histerectomy, bilateral salpingoophorectomy, colposuspension.
Results: The patient discharged from hospital postoperative fourth day without any complication.
Conclusions: Transvaginal evisceration is uncommon disease which occurs in elderly women however rarely it can be seen related with vaginal pessary usage.

474 Postoperative Schloffer Tumor and Late Enterocutaneous Fistula: rare Complications of Appendicectomy

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Appendicectomy is a common emergency operation, its major complications are uncommon. Most complications of appendicectomy occur in the early postoperative period and easy amenable to treatment with conservative medical therapy. Appendicitis, usually a benign disease, can have its prognosis worsened in case of postoperative fistula. The latter occurs rarely after open appendicectomy but accounts for 10% of the morbidity rate. Schloffer Tumor (inflamatory granuloma or abscess in the abdominal wall at the operative scar) is rare complication that usually develop months to years postoperatively and late postoperative enterocutaneous fistula has been described in literature as a rare complication of acute appendicitis.
We describe one such case where the patient presented with a tender mass under the incision site six months later after appendicectomy. Findings of computed tomography were demonstrated thickening in the abdominal wall and abdominal wall abscess like Schloffer tumor. Abscess was drained. There were not produced any microorganisms in the wound culture. After conservative therapy healing was completed in a short period.
One year later, the patient was admitted with complaints. On the examination, passage of undigested food particles through a sore in the appendicectomy incision site. Computed tomography were demonstrated fistula tract extending from appendicectomy site to skin. Enterocutanous fistula was occured at the appendicectomy incision 1 year later after operation and successfully treated with en-block fistulectomy and right hemicolectomy.
Postoperative course was uneventfull. Patient discharged from hospital at seventh day after operation.

475 Isolated Cecum Necrosis in Hemodialysis Dependent Patients: Presentation of 3 Cases

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Objective: Vascular insufficiency may lead to hypoxic injury in intestines. The lesions in the colon are called ischemic colitis. Mesenteric ischemia is more prevalent in patients getting hemodialysis. In this study we report 3 hemodialysis patients admitted to the emergency department because of acute abdominal symptoms.
Case 1
39 year old woman was chronic hemodialysis patient admitted to the emergency room with acute onset abdominal pain.The initial diagnosis was acute appendicitis and she underwent laparotomy. Peroperatively isolated cecum necrosis was seen. Right hemicolectomy and ileotransversostomy was performed. She died 43 days after surgery because of sepsis.
Case 2
38 year old man was chronic hemodialsysis patient admitted to the ER because of abdominal pain persisting for 24 h. With an initial diagnosis of acute abdomen a median incision was performed. Peropertively widespread peritoneal adherences and isolated cecum necrosis were seen. Cecum was resected and side to end ileocolostomy was performed.He died 12 days after his first operation.
Case 3
77 year old man was chronic hemodialysis patient admitted to the ER with pain localizing to right inferior abdomen. With an initial diagnosis of acute appendicitis laporotomy through a Mc Burney incision was performed. There was 2×3 cm cecum necrosis. Cecum resection and end colostomy and ileostomy was performed. The patient was discharged 9 days after the operation without any problem.
Discussion: Ischemic necrosis of cecum is a rare variant of ischemic colitis. In hemodialysis patients requiring colon resection due to ischemic colitis, primary anastamosis should be avoided, diversion stomies should be preferred.

ICU

476 The Management of Agitated Trauma Patient

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Agitation is a non-specific constellation of comparatively unrelated behaviours that possess a risk to the safety of the patient or caregiver, impedes the process of care giving or impairs a person's function.

The management of agitated trauma patient contains hospital, prehospital, in emergency department and inside of the hospital transports.
The reasons of the agitation hypoxia, hypoglycemia, hypovolemia, pain, traumatic brain injury, anxiety disorder, drug and alcohol abuse, psychiatric disorders.
Pain management has had a limited role in the management of trauma patients, primarily because of the concern that side effects (decreased ventilatory drive and vasodilatation) of narcotics may aggravate preexisting hypoxia and hypotension. Health professionals should monitor pulse oxymetry and serial vital signs if any narcotics are administered to a trauma patient.
Small doses of benzodiazapine sedatives should be titrated cautiously because of the potential side effects of hypotension and ventilatory depression.
To control agitated patients with traumatic brain injury include haloperidol, midazolam, and propofol. In the emergency setting, they are most often indicated to control agitated or psychotic behavior that constitutes an imminent danger to the patient or others.
To control agitated patients should be a part of the trauma management. We present a protocol for trauma team.

477 Study of Risk Factors of the Nosocomıal Pneumonıa Infectıons in Trauma Patients who are Transferred to the Intensive Care Unit of the Emergency Surgery Department

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Introduction and objectıve: The aim of this study is to determine the risk factors for nosocomial infections in the trauma patients, who are transferred to the Emergency Surgery Intensive Care Unit.
Methods: The investigation is based on the patients who are transferred to the Trauma and Emergency Surgery Clinic of Istanbul Faculty of Medicine in the University of Istanbul. 90 patients, who are older then 18 years, did not have symptoms of pneumonia at the admission, who are treated in the Intensive Care Unit of the Emergency Surgery Department for at least 48 h, were selected for this study.
Results: According to the results achieved in this study, conditions such as, blunt trauma, low Glaskow Coma Index (GCI < 9), high trauma severity score (ISS > 30), prolonged stay in Intensive Care Unit, prolonged ventilation, prolonged endotracheal entubation, prolonged antibiotic therapy, tracheostomy, nasogastric intubation, monitorisation of the intracerebral pressure, brain surgery, use of sedatives, enteral feeding are significant risc factors ($p < 0.05$).
Conclusion: Nosocomial pneumonia is detected in 33.3% of the patients, who were transferred to the Intensive Care Unit of the Emergency Surgery Department

NEUROSURGERY

478 Extradural Hematoma: Analysis of Factors Influencing the Courses of 355 Patients

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Introduction: Traumatic extradural hematomas (EDHs) comprise 1–3% of all head trauma admissions. In general, 73% of patients with EDH have a good outcome. (The outcome figure of our patients was consistent with those in the literature) We reviewed the records of patients with EDH in order to determine the prognostic factors and measures that can be taken to reduce mortality rate.
Materials and methods: From January 1995 to December 2002, 5,743 patients with head injury were admitted to the Department of Neurosurgery İzmir Atatürk Training and Research Hospital. 355 patients with surgically treated EDH were included in this study. There were 294 males (82.8%) and 61 females (17.2). Eighty percent of the patients were between 5 and 45 years of age. The overall mortality was 11.5% (41 patients). Eighty percent of deaths occured in comatose patients ($p < 0.000$). Comatose state, precence of focal motor signs, respiratory irregularities and Hypertansion-Bradycardia, pupillary changes were determined as the bad prognostic factors. A midline shift greater than 10 mm, hematoma volume greater than 150 ml, accompanying intracerebral and extracranial traumatic pathologies significantly increased the mortality rate. There was no significant statistical correlation between the outcome and the age, sex of the patient, trauma-to-operation interval, thickness, localization and origin of EDH and aetiology.
Results: The primary factor on outcome is Glasgow Coma Scale Scores of the patients at the time of surgery. Therefore early surgery is crucial in the management of EDH which is a dynamic process.

479 Coagulopathy in Traumatic Brain Injury: a Retrospective Study

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Introduction: In this study, we have evaluated the incidence and clinical characteristics of the patients for traumatic brain injury (TBI)-associated coagulopathy after TBI retrospectively.
Methods: Retrospective study of all patients admitted to the Trauma and Emergency Surgery Intensive Care Unit (ICU) from January 2005 through December 2008 with TBI. Criteria for TBI-coagulopathy (TBI-C) included a clinical condition consistent with coagulopathy in conjunction with a platelet count $< 100{,}000$ mm3 and/or international normalized ratio (INR) > 1.2 and/or activated partial thromboplastin time (aPTT) > 29 s and/or prothrombin time (PT) > 14.5 s. The following potential risk factors were included to identify independent risk factors for TBI-C and its association with mortality, age, mechanism of injury (blunt (B) or penetrating (P)), Glasgow Coma Scale (GCS), Injury Severity Scale (ISS), presence of polytrauma, ICU length of stay (ICU-LOS).
Results: A total of 82 patients met study criteria. TBI-C occured in 86.5% (n: 71) of all patients (B: 66.1%, P: 33.9%). In patients with TBI-C, mean age was 36.42 ± 17.03 years. The averages of GCS was 7.9 ± 2.74, ISS was 33.14 ± 14.12, ICU-LOS was 11.51 ± 6.77 days, polytrauma was considered 57.7% (n:41) and the overall mortality was 21.1%(n: 15) in patients with TBI-C.
Conclusions: In our study, TBI-C occured more frequently among patients sustaining blunt versus penetrating injuries. To our knowledge, TBI patients are at considerable risk of developing coagulopathy and anesthesiologists should be aware of this life-threatening syndrome, especially in TBI patients with blunt injuries.

480 Neuroprotective Effect of Recombinant Human Erythropoietin (RHuEPO) in Spine Injury

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Erythropoietin (EPO), glycoprotein hormone, is a mainly produced by the kidney that stimulates proliferation, growth and differentiation of erythroid precursors in the bone marrow. Recently, anti-inflammatory, neuroprotective, antiapopitotic, angiogenic and vasodilatator effects of EPO have been also determinated.
The purpose of this study was to investigate the effects of rHuEPO in reducing the severity of experimental spinal cord injury (SCI).
Ninety adult Sprague-Dowley rats weighted 200 g (± 15) were used for the study. Through a dorsal incision, T6-9 laminectomies performed in prone position and clip compression had made for ischemic injury as Tator method. The rats divided in three groups. Systemic 200 μ (1,000 U/kg) rHuEPO had given 24 h before the trauma in the first group, 30 min. later after the injury in the second group and the third was the control group. The rats were killed with high dose intraperitoneal ketamin 24 h later after the injury.
The histological examination of injured spinal cord specimens for the potential neuroprotective effects of rHuEPO was done. Further more the axial spine sections stained with TTC (triphenyl tetrazolium chloride). The ischemic areas were evaluated with a imaging calculation program. We use wet–dry method for determination of ischemic tissue edema.
We concluded that administrating a single dose rHuEPO (1,000 U/kg) has potential neuroprotective effect on experimental spine injury by reducing severity of inflammation and tissue edema in the secondary ischemic area.

481 Unusual Neurological Results at Late Spinal Surgery of Serious Traumatic Burst Fracture of Thoracic Vertebrae

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It has known both early surgery and high dose steroid treatment prevents the neurological function and viability caused of the traumatic secondary spine injury.
We present surgically treated a traumatic rotation-compression spinal cord injury caused by a motor vehicle accident. The patient referred to our clinic 45 h after the injury. At the time of admission, he had a localized pain at the thoracic 10–11 vertebrae level, loss motor and sensorial function under the level T10 classified as ASIA grade A. He was incontinent. In the radiological evaluation we found loss of height at the thoracic 10th and 11th vertebrae body, serious spinal column injury include T10-11 burst fracture, laminas and facet joints fractures with three colon damage (Denis F). We detected the spinal instability criteria in T10-11 (Mc Afee et al.). We did not see penetrating injury or primary spinal cord injury signs but spinal canal tightness for 30 percent in CT and MRI scans.
We took the patient to surgery in unusual classical surgery timing. First, decompressing surgery applied to the T10-11 laminas and posterior stabilization with transpedicular screw-rot system. One day after the first operation, T10 and T11 corpectomy applied for anterior stabilization with cage-screw system. Mega dose steroid had given also before the first surgery.
Postoperatively early neurological evaluation, he had ASIA grade C, after second month ASIA grade D without incontinence. In our opinion the decompressing surgery that applied in 48 h in the patients without complete primary spine injury, has a positive neurological feedback.

482 The Rare Presentation of Cyst Hydatic: Intradural Extramedullary Cyst Hydatic

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Introduction: It is a rare occurrence with the rate of 1% in the subjects with spinal infestation cyst hydatic *Echinococcus granulosus*. Intradural hydatic cyst is relatively rare when compared with other spinal hydatic cysts. We are presenting here a 68-year-old female case who applied to emergency service with backache and paralysed legs and was diagnosed with spinal intradural extramedullary hydatic cyst.
Case: A 68-year-old female patient applied to emergency service with complaints of a backache started two days ago, paralyses in both legs and being unable to walk. In her neurological examination, a complete motor power loss in the lower extremities and bilateral sensation loss compatible with T11 dermatoma were detected. In the torako-lomber spinal Magnetic Resonance Imaging (MRI), multiple cystic characterized nodular lesions having peripheral contrast with regular contour including right neural foramen and paravertebral zone at the level of T11–T12 and L1 in the intradural distance were determined. The patient was diagnosed with common spinal intradural extramedullary hydatic cyst exhibiting bone involvement. As the lesion was very broad had paraplegia, we did not consider operation.
Conclusions: Hydatic cyst infestation is a benign disease. If it is not diagnosed early and treated when it involves in some systems rarely as it did in this study, the results can be serious. Diagnosis should be confirmed quickly with increasingly common advanced radiological diagnosis methods. The aim in these cases is to eradicate the cysts surgically, however, chemo-therapy and percutaneous drain methods have become more significant recently.

483 Posterior Wall Fracture is Not a Contraindication for Percutaneous Balloon Kyphoplasty

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Balloon kyphoplasty was initially developed for osteoporotic compression fractures of vertebral bodies, but with the spread of the technique the indication has now been extended to tumors and traumatic fractures. The contraindications have changed as the result of increasing experience. Only a few years ago a vertebral fracture with involvement of the posterior vertebral wall was an absolute

contraindication for percutaneous balloon kyphoplasty. There are hardly any strict contraindications against the operation at present. Between August 2007 and November 2008, eight patients with posterior vertebral wall fracture and spinal canal compramise to some degree have undergone percutaneous balloon kyphoplasty. There were neither neurological complications nor any leakage into the spinal canal. Patients were ambulated the same day.
In conclusion percutaneous balloon kyphoplasty is applicable in the traumatic vertebral fractures even in the case of posterior vertebral wall fracture and spinal canal compramise if the appropriate technique is carefully and meticulously followed.

484 Spontaneous Spinal Epidural Hematoma During Pregnancy

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Purpose: Spontaneous spinal epidural hematoma is a rare phenomenon that has no distinct etiology. Spontaneous spinal epidural hematomas are commonly associated with coagulopathies, tumors, or vascular malformations. Spontaneous spinal epidural hematoma during pregnancy is extremely rare. We report here the case with spinal epidural hematoma during pregnancy.
Materials and methods: 28-year-old woman, without previous history of relevant medical disorder, who presented with acute paraplegia at 37 weeks of gestation. Spinal MRI was performed.
Results: Magnetic resonance imaging study (MRI) demonstrated ventral epidural compression and acute epidural hematoma in the thoracal and cervical region. Follow-up spinal MR-angiography was negative for any vascular malformation. An urgent cesarean section was performed followed by evacuation of the epidural hematoma. The decompression was performed. The patient gradually recovered lower extremity function. MRI findings were normal at one month follow-up.
Conclusion: Spontaneous spinal epidural haematomas are quite rare with pregnancy. Prompt diagnosis and following may be made with MRI. Also, MRI may be useful to search etiology such as tumors, and vascular malformations.

485 Burr Hole Evacuation of Chronic Subdural Hematoma at Younger Ages Needs Additional Precautions for Preventing Acute Epidural Hematoma

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Ipsilateral development of acute epidural hematoma after evacuation of chronic subdural hematoma is not common. Because chronic subdural hematoma is observed especially in elderly patients and the adherence of the dura to the inner table of the skull does not let the blood accumulate in the epidural space. But the happenings may not be similar for younger patients. Between November 2002 and February 2009, 87 adult (older than 16 years) patients with unilateral chronic subdural hematoma were underwent burr-hole craniostomy. In addition another 35 patients with bilateral chronic subdural hematoma were treated in the fashion in this period. After evacuation acute epidural hematoma required reoperation was developed in one patient with unilateral chronic subdural hematoma. This patient, is 19 years old, was youngest in this series.
In conclusion when operating a young patient with chronic subdural hematoma additional precautions for preventing acute epidural hematoma such as to avoid detaching the dura mater from skull by kerrison punch and tenting it to the skull in the and of the operation might be good idea.

POLYTRAUMA

486 Routine Repeat Chest Radiograph Before Leaving the Trauma Room: is it Useful?

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Introductıon: Several guidelines advocate multiple chest radiographs during primary resuscitation of trauma patients. Several local hospital protocols include a repeat radiograph before leaving the trauma resuscitation room (TR). The purpose of this study was to determine the value of routine repeat radiograph.
Methods: One year data of all radiological imaging in our TR were prospectively collected for all patients presented to the TR of the hospital. We counted and assessed the radiographs and classified our findings as either 'new injury detected', 'presence of intervention equipment', or 'deterioration of previously detected injury'.
Results: In total, 674 patients were included. More than 75% had two radiographs. Eight (2.1%) new injuries without clinical relevance were found on the repeat radiograph after an initial normal radiograph. In total 61 patients (9%), had a repeat radiograph to verify the effect of an intervention or position of equipment. In 28 patients (22%) with two abnormal radiographs, newly diagnosed injuries (n = 9) or deterioration of known injuries (n = 19) were found. In 411 patients (81%) the results of the repeat radiograph had no clinical consequences.
Conclusıon: Our study supports a strategy of omitting a routine repeat radiograph in trauma patients whose initial radiograph is normal.

487 The Retrospective EvaluatıOn of Our Multitrauma Cases

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Introduction: Afyon Kocatepe University Hospital is settled on the crossroad of main intercity roads. The region has the third highest rate of traffical accidents in the country. The aim of the study is to evaluate multitrauma cases who were accepted to the intensive care units, between the years of 2006 and 2008.
Material-Method: the multitrauma cases who were accepted to the Anestesiology and Surgical Intensive Care Units, evaluated accord-

ing to the age, diagnosis, treatment results, mortality rates between the years of 2006 and 2008.
Results: Summarised in the Table 1.

Table 1 Multitrauma cases in intensive care units.

	N	Exitus	Externed	Age
Traffical Accidents	64	23	42	35
Pedestrian	26	9	17	38
Gunshot wound	16	6	10	36
Penetrating trauma	4	1	3	36
Fall	8	2	6	54,5
Total	118	41	78	39,9

In conclusion, the most of our multitrauma cases caused by traffical accidents, were young. The mortality rate 34% for multitrauma cases, the percentage of multitrauma cases were 8.8% of all intensive care patients. Preventing the accidents is as much important as treatment strategies for multitrauma cases.

488 Our Experiences in Management of Self-inflicted Gunshot Injuries to the Total Face

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Introduction and objectives: As personal problems dealing with health, jobs, financial status and the family problems increasing, more suicide attempt subjects are consulted in emergency rooms day-by-day. Although gunshots to the oro- facial region form 4–12% of the total victims, it is important that seconder deformities resulted with aesthetic, functional and psychological problems were usually encountered after primary surgery. This study reviews 11 cases of self-inflinct gunshot injuries of face and our experiences in early and late managements over a 5-year period.
Methods: This study is based on 11 subjects who attempted suicide resulting in extensive facial deformities, not in death between 2000 and 2008. Demographic details, mechanism and direction of injury, early and late management and seconder deformities were recorded.
Results: After establishing the airway control and completing the primary survey, all patients underwent debridement and bleeding control. Reconstruction of maxillofacial fractures were performed in 8 patients on the day of admission and the remaining 6 within 5 days of injury. Following procedures as scar revisions, rhinoplasty, mandible reconstruction, ectropion operations or coverage of palatal defects etc. were performed after earliest 6 months from primary operation.
Conclusions: After stabilization of life-threatening injuries, the goals of early management are regenerate of anatomic form and function to include dental occlusion and mouth opening to prevent scarring, contractures of mobile structures and ankylosis. Seconder operations required for aesthetic and functional problems should be performed earliest after 6 month from primary operation that all the scar formations and wound healing's were completed.

489 Influence of Maxillofacial Trauma in Polytraumatized Patients on Long-term Treatment Results

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Background: Injuries of maxillofacial region in patients with polytrauma are frequent but are rarely treated primarily. In order to achieve satisfactory treatment results trauma treatment team must include a maxillofacial surgeon.
Material-Methods: The study shows treatment results of 29 polytraumatized patients with maxillofacial injuries. Dominant trauma was: maxillofacial in 17%, craniocerebral in 38%, locomotor in 17%, thoracic in 14% and abdominal in 14% of cases. Treatment of maxillofacial trauma was in 28% of cases surgical and in 72% conservative. Treatment of other traumas was operative in 17% and conservative in 83% of patients.
Results: Early mortality rate was 21%. Four exitus were recorded during the first 24 h, 1 exitus on the 4th day and 1 exitus on the 6th post-trauma day. Dominant trauma was in 4 exitus craniocerebral, in 1 exitus thoracic and in 1 exitus severe locomotor. Long-term treatment results in remaining 23 patients were: for maxillofacial region – good in 16 patients (70%), satisfactory in 3 patients (13%) and poor in 4 patients (17%); for other regions – good in 20 patients (87%), satisfactory in 1 patient (4%) and poor in 2 patients (9%).
Conclusion: Existing maxillofacial trauma in polytraumatized patients usually directs treatment toward conservative methods. Reasons for this are insufficient number of maxillofacial surgeons in trauma teams and delay of surgical treatment of other present traumas due to difficult anesthesia application. Unfortunately, conservative treatment approach induces inadequate treatment results from both functional and esthetic point of view.

490 Multidetector Computer Tomography in Trauma Patients – Significance of Active Bleeding Detection

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Introduction: Currently, the sensitivity for detection of active hemorrhage has significantly improved, the clinical implications of multidetector computer tomography (MDCT) findings may need to be reconsidered.
Methods: Authors evaluated consecutive trauma patients examined between March 2004 and December 2008 who underwent whole-body or abdominal MDCT, and were performed 286 examinations. We retrospectively reviewed MDCT images for the presence of extravasated contrast material, a findings that represents active hemorrhage. The site, density and size of the hemorrhage was noted.

Results were compared with clinical follow up or intraoperative findings.
Results: Active bleeding was detected in 52 (18.2%) of 286 patients. A total of 78 sources of active extravasation were identified. Twenty five (48%) of 52 patients underwent immediate surgical intervention. Twenty two of 25 (88%) of intraabdominal bleeding sites requiring intervention, in other locations intervention was needed in 35.8%. Important is differentiation between arterial and venous bleeding by multiphasic imaging. The size of extravasation was significantly higher in patients who underwent operative intervention ($p = 0.017$). Density and size of active extravasation were significantly higher in patients who died ($p = 0.0001$ and $p = 0.02$).
Conclusions: The contrast enhanced MDCT revealed active bleeding in 18.2% of trauma patients in abdominal and thoracic cavity. It could distinguish between arterial and venous bleeding and played crucial role in the diagnostic protocol of those patients. Clinical implications of active bleeding are highly dependent upon location and imaging characteristics.

491 Analysis of Hospital Mortality and Epidemiology in Trauma Patients: a Multi-centre Experience

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Objectıves: Many patients, who have damages due to traumas, admit emergency departments everyday. Even appropriate interventions and rapid tansportation of the patients from the trauma place is observed vital for preventing mortality and morbidity. The objective in this retrospective hospitals based study is to determine the frequency, mortality and clinical characteristics of trauma patients in our region (Southeast coast of Turkey).
Materıals-Methods: All patients admitted for trauma to emergency departments of Harran and Gaziantep Medical Schools, also emergency services of hospitals in Sanlıurfa city centre between June 2008 and December 2008 were included in the study. All medical records and the follow-up data were reviewed in each patient.
Results: Approximately 140,000 patients admitted to emergency departments during these 6 months period. Amoung these patients 15,120 (10.8%) who were suffered from trauma evaluated. Adults and children constituted 73.7 and 26.3% of the patients, respectively. Types of trauma were 38.7% motor vehicle accidents, 36.8% falls from height, 7.8% burns, 8.1% knife and gun shots, 6.5% homocides and 2.1% accidents at a work place. The most common areas of injury were head-neck and upper extremity (both in adults and children). Admission to the hospital was 16.3%. 79.9% of the patients discharged from the emergency departments and 3.8% followed mortal.
Conclusıon: Frequent causes of trauma in our region are traffic accidents and falls from height. Type of trauma, rapid arrival to the hospital, hospital procuderes and interventions, age and trauma scores found as effective factors of mortality in trauma patients.

492 Isolated Neck Trauma as a Cause of Disability And Preventable Deaths in our Area

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Introduction and objective: The neck region is affected in only about 5–10% of all trauma cases, and isolated neck injuries, especially from a blunt mechanism, is even more rare. Our objective was to assess the incidence, disability from spinal cord injuries, and preventable deaths in our patients with isolated neck trauma.
Material and methods: Patients were identified at the Severe Trauma Registry of our hospital, between 1993 and 2006. The TRISS method was used to assess preventable deaths.
Results: We found 117 (7.4%) patients with neck injuries out of 1.575 patients included in our registry, 70 (60%) from blunt (BNT) and 47 (40%) from penetrating trauma (PNT). Only 9 (13%) BNT and 19 (40%) PNT were isolated. The mean ISS of the BNT and PNT groups was of 25 ± 7 and 14 ± 9.5, respectively. In the BNT group, 6 (67%) patients had spinal fractures (with 2 spinal cord injuries with permanent disability), 3 had airway injuries and 1 a vascular injury. In the PNT group, 1 patient had a spinal fracture, 7 had vascular injuries and 4 airway injuries. Overall mortality was of 4 (14%) patients, 2 in each group, and only one of them was deemed preventable.
Conclusions: Isolated neck trauma is a rare cause of disability and preventable death in our area. Most penetrating injuries have a low-to-moderate degree of anatomic severity ($AIS \leq 3$).

493 Time of Application to Hospital with Trauma

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Introduction: Data on the time of trauma at our country is less than at western countries. To obtain new data from Turkey on this subject is aimed in this study.
Methods: Detailed forensic reports recorded at emergency department(ED) of a state hospital in eastern Turkey between January 2006 and December 2007 were investigated. Time was separated into four groups of hours as 00–06 h (group I), 06–12 h (group II), 12–18 h (group III), 18–24 h (group IV).
Results: There were 6178 patients of whom 84.7% was men. Mean age was 25.6 (1 month–84 years) years. Patients applied to ED, most frequently in May, June, September, and October each month comprising ≥10% of whole. There was less application of 5.5% in each winter months. From midnight to midday, ED was quite silent

for each group. However about applications increased gradually with a peak at 17 o'clock in all groups. Patients treated at ED were mostly stricken (58.5%) and the busy period was between 12–24 h with two peaks at 17 and 22 o'clock. Totally, 231 patients were hospitalized mostly in group III (48.9%) regardless of cause ($p < 0.01$). Patients referred to another hospital were frequently in group III (39.9%) and also in group IV (32.3%). Mortality was slightly high in group III. However higher rate (1.1%) was seen among patients in group II.
Conclusion: Midnight hours seemed safe in terms of mortality and severity of trauma. Whether the reason for a higher transportation rate at night hours is the severity of trauma or sedation of ED staff is not clear.

494 Trauma in Relation to Gender

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Objectives: This study is aimed to investigate how trauma characteristics differ with gender among Turkish people.
Methods: Reports of trauma patients admitted to emergency department (ED) of a state hospital in eastern Turkey between January 2006 and December 2007 were investigated. Data were analyzed based on gender.
Results: There were 5,255 (84.7%) men and 946 (15.3%) women, out of 6,201 patients. Mean ages were 26.1 (1 month–80 years) years for men and 23 (2 month–84 years) for women. The rates of injuries caused by motor vehicle (MVI), strike, and fall were 81.3, 90.4, 76.8% for men and 18.7, 9.6, and 23.1% for women, respectively. Suicide (68.1%) and poisoning (64.6%) were significantly high among women. Both groups had pathologies at similar sites of body which were extremities and head, so orthopaedic and neurosurgical consultations were required. Of men 86% were discharged after treatment at ED. Hospitalization rate for women with injuries from fall and firearm was slightly higher than men. Among the transported 382 patients, women had a higher rate (30.1%) and were transported for poisoning (66.6%), MVI (23.8%), and fall (21.7%). Mortality of women was 22.9% (totally 48 patients) frequently because of MVI and poisoning.
Conclusıon: Men were under high risk of trauma, especially of strike. However, as revealed by hospitalization, transportation, and mortality data, women were exposed to more severe trauma. In addition, poisoning and fall caused more death. The rate of mortality of women seems to be less when compared to literature.

495 Epidemiology of Pediatric Trauma in Turkey

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Introduction: There is little data on pediatric trauma in Turkey. This study aimed to obtain data on the epidemiology of trauma in eastern Turkey.
Methods: Among the patients admitted to emergency department (ED) of a state hospital between January 2006 and December 2007, with trauma, pediatric patients (0–18 years) were selected. Data from the detailed forensic reports were analyzed.
Results: Out of 6,202 patients, 1,986 (32.0%) were pediatric, and 79.8% were boys. The mean age was 12.29 (1 month–18 years) years. The rates of strike, and motor vehicle injury (MVI) were 48.9% and 19.2%, respectively. Mostly, pathologies were observed on head (36.9%) and extremities (27.8%). Pediatrician and pediatric surgeon consulted in only 3.7% of patients. Significant number of patients (75.1%) who were mostly stricken were treated and discharged from ED without consultation. Hospitalization was needed in 113 (5.7%) patients, particularly for fall (30.9%) and MVI (30%). However, hospitalization rates for fall and piercing/cutting injury (P/CI) were higher among the groups ($p < 0.01$). There were 187 (9.4%) patients transported for MVI (29.9%), fall (28.3%), and poisoning (20.3%). Mortality was seen in 12 (0.6%) patients with MVI (66.6%) ($p < 0.01$).
Conclusion: Strikes were significantly high, consistent with discharge rate. MVI was less as compared with literature; however, had high mortality. Fall and P/CI had remarkable percentages of hospitalization. Patients transported were mostly those with burn, fall and poisoning. Rate of firearm is not remarkable as it is in western countries.

496 Bicyclist Injuries and Mechanisms in Non-fatal Crashes into Car Fronts

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Background: Crashes, even at low speed, involving unprotected road users, may result in severe injuries.
Aım: To analyse non-fatal injury patterns in bicyclists hit by car fronts.
Method: Data regarding kinematics and mechanisms from 100 injured bicyclists 2002 to 2006 were collected. Injuries were analysed according to point of impact (car front, bonnet, windshield and street).
Results: There were 40 men and 60 women (median age 28 and 25 years, respectively). In 62 incidents the velocity of the car was 50 km/h or below. A total of 187 injuries were recorded. Five of eight persons with Maximum AIS 3+ injuries, suffered head injuries. Nineteen bicyclists used helmet with no AIS 3+ head injury. First impact at front (100 patients with 46 injuries), resulted in 43 injuries (5 AIS 2+) to the lower extremities. Second impact (98 patients with 105 injuries) resulted in 33 head and neck injuries (at bonnet seven AIS 2+ or street 16 AIS 2+). Third impact (37 patients with 33 injuries) yielded ten head injuries (at windshield four AIS 2+ or street five AIS 2+). Fourth impact (12 patients with two injuries) were all in street, with no AIS 2+ injury.
Conclusıon: Bicyclists in non-fatal frontal crashes with cars suffered the most serious injuries from the impact to bonnet and windshield, likely due to highest energy transformation. Bicycle helmets, collision mitigation system that alerts the driver or automatically brakes the car, and external airbags protecting the bicyclists from hitting bonnet and windshield, may reduce injuries.

Author to editor: This is a complete analysis of mechanism of injury in crashes carfront versus bicyclist. Journals were completed with traffic notes from police at scene, patents own history of the crash from the injury database and furthermore interview. The catch area is welldefined with no other hospitals in the area and total cover of all injuries in the database. This gives a good picture of the dynamics of the the crash and mechanism of injury.

497 Kinematics and Mechanism of Injury in Non-Fatal Frontal Pedestrian Versus Car Crashes

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Background: Injury panorama previous seen in pedestrians struck by passenger cars may have changed due to modern car-fronts.
Aim: To analyse non-fatal injury patterns in pedestrians hit by passenger cars seen at different points of impact.
Method: Data from 107 crashes, 1997 to 2006 were collected. All injuries were analysed according to the defined point of impact (carfront, bonnet, windshield and street).
Results: Included were 55 men and 52 women (median age 23 and 35 years, respectively). Forty-two persons were hospitalized (range 1–60 days; median 3 days). The velocity of the car was below 50 km/h in 76 cases. A total of 177 injuries were recorded in 107 patients, of witch 21 patients sustained MAIS 3 + injuries. First impact at front in 107 patients yielded 71 injuries (25 AIS 2 +), of which 66 in lower extremities. Second impact in 99 patients resulted in 73 injuries localised to the head/neck and upper extremity at bonnet (12 AIS2 +) or street (11 AIS2 +). Third impact in 42 patients gave 29 injuries (16 head/neck) at windshield (9 AIS 2 +) or street (4 AIS 2 +). Thirteen persons, who hit the street as the fourth impact point, sustained three injuries (zero AIS 2 +) as contusions of the pelvis and lower back.
Conclusion: Pedestrians in non-fatal frontal crashes with a car suffered the most serious head injuries at second impact in bonnet, windshield or street. Safer passageways for pedestrians might preclude the crash. Mechanisms preventing the pedestrian of hitting the bonnet and windshield, may reduce the injuries.
Author to editor: This is a complete analysis of mechanism of injury in crashes carfront versus pedestrian. Journals were completed with traffic notes from police at scene, patients own history of the crash from the injury database and furthermore interview. The catch area is welldefined with no other hospitals in the area and total cover of all injuries in the database. This gives a good picture of the dynamics of the the crash and mechanism of injury.

498 Trauma Patients in Extremes in Emergency Room

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Introduction: There is increasing amount of patients with severe trauma in Emergency room delivered by Rescue Service. This fact forces us to adapt our acting in Emergency rooms and demands training our skills in prompt life saving procedures.
Method: The authors evaluated the list of patients with severe trauma, who died in Emergency room in level I Trauma center by retrospective method. They compared findings of medical team acting in life saving procedures and definitive finding of autopsy.
Results: 25 patients died in Emergency room for extreme trauma during period of last 5 years. The most frequent cause of death was severe brain injury, following by chest trauma. 22 patients had injury incompatible with life confirmed by autopsy. Three patients died for potentially avertable causes and authors discuss possible steps, which could lead in saving life in such extreme situations.
Conclusion: Severe injured patients demand perfect teamwork of all components acting in their salvage. Rescue service and Emergency room play crucial role and we need to revalue process of all diagnostic and medical methods for trauma patients ''in extremes''.

499 Is Clinical Guidelines Important in Trauma Nursing Practice?

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One of the primary characteristics which professions possess is to make the members of a profession have autonomy in decision making and practice. Nursing practice is evaluated in relation to professional practice standards and guidelines, rules, etc… Application of professional standards requires that nurses use critical thinking for the good of individuals or groups. Critical thinking also requires the use of scientifically based and practiced-based criteria for making clinical judgments. These criteria may be practice based on standards developed by clinical practice guidelines developed by individual clinical agencies. For example, intensive care units (ICUs) are designed to meet the special needs of acutely and critically ill patients. A patient is generally admitted to the ICU for one of three reasons. The patient may be physiologically unstable, at risk for serious complications and require intensive and complicated nursing support.
Despite the emphasis on caring for the patient who can survive death is common in ICU patients. It is reported that 10% of patients admitted to ICUs will die, and another 20% may leave the ICU but will not survive to discharge. This suggests a need for caution and coordination of care when transferring patients from ICUs to general units.
In this article, the practice guideline which titled ''Patient Appropriateness for Adult ICU Admissions and Discharge'' will be discussed.

500 Analysis of Preventable Deaths According to Postmortem Reports in Traumatic Deaths

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Introduction: In this study, we aimed to investigate the preventable death of the cases to whom autopsy and postmortem examination are performed, because of trauma in Diyarbakır

Materials-Method: In this study, which have been planned retrospectively descriptive, demographic data, type of injury, cause of injury, locations of injuries, cause of death, and scene of death data have been withdrawn through the reports of the deaths due to trauma in Diyarbakır Council of Forensic Medicine in 2008. Medical errors in these deaths and preventable death causes have been analysed with this data. The criteria of American College of Surgeons Committee on Trauma have been taken into account while developing the preventability criteria for the definition/ clasification of these medical errors.
Main Results: It has been stated that of the 747 cases taken into consideration, 4.15% (n = 31) were preventable 16.20% (n = 121) were potentially preventable and 79.65% (n = 595) were unpreventable. Suboptimal care in 49.34% (n = 75), delay in treatment 41.45% (n = 63), delayed or missed diagnosis in 10.53% (n = 16), clinical judgment error in 10.53% (n = 16), inappropriate or missed medical administration in 7.23% (n = 11), and other mistakes in 3.95% (n = 6) of the cases have been found.
Conclusion: When the results have been compared with the studies performed in the areas where modern trauma care and trauma centers are located, preventable death ratio have been found high. As a result, it has been evaluated that forming modern trauma system and trauma centers have a significant role in decreasing the preventable death ratios.

501 Child and Adult Bicycle Injuries: analysis of 4 years

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Introductıon: In this study we aimed to investigate and compare the features of child and adult injuries due to bicycle accidents admitted to our emergency department.
Patients and Methods: The study was carried out retrospectively by searching the files of patients admitted to the emergency department due to bicycle accidents, in the emergency department and archive records between the dates of January 2005 and December 2008. The patients were divided into two groups as adults and children. Age and sex of patients, season or month of injuries, place and mechanism of injury, injury site of the body, diagnosis and treatment modalities, discharge and hospitalization rates were evaluated.
Results: Totally 150 patients were included in the study. 79% of the patients were in child age group, 21% were adults. It was determined that number of accidents increased especially in the summer months. 71.4% of accidents concerning children and all of adult accidents occurred in the streets. Falling down from the bicycle was the most common injury mechanism in children (91%) and adults (90%). Head and neck region was the most common body site subjected to the injury both in children (32%) and adults (40%). 78% of child patients and 84% of adult patients were discharged after emergency department follow up and treatment. There was a significant difference between two groups with respect to injury severity.
Conclusıon: As a conclusion most of the injuries due to bicycle accidents happen in children, in the streets, in summer months and school vacations.
Editor to self: kabul sonrasi iptal. pelin mail

PREHOSPITAL CARE

502 Establishment of a Road Traffic Collision Injury Registry in Al-Ain City

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Objectıves: To design a Road Traffic Collision (RTC) Injury Registry and study RTC injured patients in Al-Ain city.
Methods: Data were collected prospectively on all RTC patients admitted to Al-Ain and Tawam Hospitals over one and a half year. A web-based database has been established to enter the data. Data were analyzed.
Results: 1,008 patients were studied (80% males) having a mean age of 28.7 years and a mean ISS of 9.3. 44% were UAE nationals. 53% of collisions took place inside cities. 78% of patients were car occupants; 44% drivers, 18% frontseat passengers, and 15% backseat passengers while 12% were pedestrians, 6% motorcyclist and 3% cyclists. Primary crash mechanism was front impact in 26% of cases, rollover collision in 24%, and 17% were side angle collision. 17% of patients were thrown away from the vehicles. Only 15% of the vehicle occupants used seatbelts. Air bags were released in only 6% of the vehicles. 30% of motorcyclists were helmeted while none of the cyclists was helmeted. Only 35 (3.5%) collisions happened during abnormal weather condition. Ambulances brought 76% of the patients. 70 (16%) drivers were not attentive because of sleepiness, using mobile phones, or driving under influence of alcohol.The mean hospital stay was 9.2 days. 18% needed ICU admission and 30 (3%) patients died.
Conclusıons: Road traffic collision is a major cause of trauma and death in Al-Ain city. Seatbelt compliance is alarmingly low and should be enforced.

503 Prehospital Care in Patients with Severe Traumatic Brain Injury

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Introduction and Objectives: The controversy between the ''scoop and run'' versus the ''stay and play'' approach in severely injured trauma patients has been an ongoing issue for decades. The present study was undertaken to investigate whether changes in prehospital care for patients with severe traumatic brain injury in the Netherlands, have improved outcome.
Methods: In this retrospective study, files were analysed for all patients admitted to one of six hospitals in the Limburg region in the Netherlands with a GCS < 8 on admittance over the period January 2006 – December 2008. All patients had proven traumatic brain damage on CT or MRI. Relevant prehospital and clinical data from a similar study conducted 20 years ago were compared to data from the present cohort. The main outcome was mortality.

Results: The two research groups had similar characteristics. In the historic cohort, Basic Life Support (BLS) and the 'scoop and run' method in patients with major traumatic brain injury (TBI) was common, with an average time on scene of 7.5 min. Nowadays, prehospital care is performed mainly on the level of prehospital Advanced Life Support (ALS), with average time on scene about four times as long as in the historic cohort. However, the overall mortality rate for the current cohort compared to 20 years ago has not decreased.
Conclusion: Despite more on-site ALS in major TBI nowadays, there was no reduction in mortality.

504 Evaluation of Bites by Animals Suspicious of Being Rabies at Kars Distinct

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Objectıve: Epidemiological evaluation of bites by animals suspicious of being rabies at a rural region.
Method: Medical records of 487 cases admitting to Kars State Hospital for animal bites between June 2007 and May 2008 were retrospectively reviewed. Cases were analyzed with regard to age, gender, type of residence (at village or town), type of biting animal, season, and site of injury.
Fındıngs: Of all 487 cases, 366 (75.2%) were male and 121 (24.8%) were female. The mean age was 25.2 years (range: 1–90 years) and most patients were younger than 20 years old (52.6%). Half of the cases were living at villages (52.3%). Dog bites were the most frequent type (89.3%), followed by cat bites (5.9%), cow bites (1.6%), horse bites (1%), bear and fox bites (0.8%). Incidences were most frequently seen at June (16%) and July (12.5%). Most frequently injured sites were lower extremities (46.7% legs, 12% foot) and upper extremities (39.1%). Injuries to other sites including head, neck, thorax and abdomen constituted 2.2% of all cases. Of all animals, 61.1% were private property and 8% had received vaccination. Vaccination schedule was completed in 98.5% of cases bitten by suspicious animals.
Conclusion. Animal bites still remain to be an important health problem at rural regions. Since most of the animals are not vaccinated, there seems to be a considerable rabies risk. Vaccination program should be strictly followed for all suspicious animal bites.
Editor to author: Kasim Caglayan adini sildirmistir.

505 Effects of Exercise Platforms in Disaster Medicine Education

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Entry: UMKE converts knowledge to agility by making exercises after getting medical disaster educations.
The team is provided to be ready all the time by making monthly and yearly national education exercises.
These exercises are planned with two Methods:

(1) As demonstration during education
(2) By creating extraordinary condition simulations

Aim: İnterpret the support of exercises plans on UMKE operational agility and to accomplish next plans through this way.
Material – method: 16 UMKE teams are divided into two parts after geting their basic educations. First group is planned to exercise in education room with demonstrations. The second is planned to exercise the extraordinary situation simulations in which people(not from the groups) made up and acted as injured and moulage is also used in this group. After the exercises, results are compared according to the criteria for assessment. In the first group's demonstrations it is worked by giving roles to team members in the education atmosphere with existing equipments (Chair, table, ladder…). In the second group, worked with the moulaged volunteers and extraordinary situation simulations just like the real(Wreck, avalanche, fire…) The results are considered statistically by t test.
Findings: According to the assessment criterias the first group's average point is 5.5 and the second is found as 8.38. ($P < 0.0001$).
Discussion and result: Exercises in a form of extraordinary situations effected team's performance, operational success and involvement positively. Planning the exercises with this data will increase the quality of the educations which planned in the future.

506 Assessment of National Medical Rescue Team's Exercises

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Entry: UMKE designed as serving medical rescue in extraordinary circumstances. They carries their approaching skills to the top by managing regional and national exercises. The teams in different cities coordinate and share their knowledge and agility by this exercises.
Aim: After the workshop oriented educations, criteria are needed to improve and decide the affect of the exercises as numerical which supplies standardization of the teams.
Material–method: 17 teams are evaluated according to 10 criteria and graded from 1 to 10. After the exercises, results and the importance of criteria shared with teams. 1 month later same teams evaluated again in exercises.
Criteria:

(1) Equipment
(2) Team accordance and work discipline
(3) Security and to define work risks
(4) Approach to the injured
(5) Evaluate the injured people
(6) Convert the theory to practise
(7) Usage of materials correctly and in proper place
(8) Packaging
(9) Taking out the injured safely
(10) Cleanness of the materials and control of medical bag

Findings: After Antalya UMKE basic education, 17 team's evaluated and average score was 7.82. This results shared with teams and in next exercises in Isparta mean score founded as 9.00. ($P < 0.0001$)
Discussion and result: When the evaluation criteria and results shared with the teams, it is confirmed that the teams react better in ongoing situations. It is considered that it will also increase the

quality and effectiveness of the education. The criteria for evaluation going to help standardization which can be used by all medical rescue teams will provide a common manner between the groups.

507 National Medical Rescue Team

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UMKE teams are established in 2004 in 81 cities in order to act in disasters and extraordinary circumstances as a medical rescue team. Members are chosen among the volunteered medical crew. The team's mission is to support the search and rescue teams medically in extraordinary circumstances. Team starts with the first intervention and maintain the stabilization of the injured person before the transport so that prevents the second insult. Working principles was not obvious during the establishment phase and this caused chaos at the beginning. By designating the teams responsibilities work distribution reached to the standard. National medical rescue team is consisting of 5 medical personnel who are named as 1 leader, 1 logistic, 1 pigeon, 1 squirrel and 1 courier. The team leader who is chosen from doctors who has experienced in disaster medicine and have knowledge about leadership, provides a common manner and motivation among the team. Also directs the intervention to the injured person and coordinates with search and rescue teams just after the fast arrive in extraordinary circumstances. Squirrel communicates with injured at first and starts his intervention with the direction of the leader. Logistic is responsible for all equipment (spin board, medical bags…). Courier provides the equipment transportation between logistic and squirrel. Pigeon is responsible for photographing, recording and communicating with the center. This organization type performed in regional and national practises from 2006 to 2008 and also in train accident in Kütahya. İt helped maintaining standardization and acquired successful results.

Author to editor: Bu yazıyı Ulusal Medikal Kurtarma Ekiplerini (UMKE) tanıtmak amacıyla hazırladık. Eğer uygun görürseniz, Umke yi tanıtıcı bir stand açıp medikal çantamızı ve diğer kullandığımız malzemeleri tanıtabiliriz. Ayrıca bu güne kadar katıldığımız (Pakistan depremi, Isparta uçak kazası, Kütahya tren kazası) afet, tatbikat ve eğitimlerimizi(ameliyathane konteynırımızı) power point olarak sunabiliriz.

508 Helicopter Use as a Part of Trauma Care

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Introductıon: Rapid transport and persistence of prehospital care is crucial to decrease the mortalities and morbidities of combat related injuries. Hence, helicopters are effectively used by the military although they are austere environments that offer limited space, equipment and resources for the crew and requires higher level of skills for prehospital trauma care.

Materıal-Method: The data were collected from 60 consequent casualties, by the helicopter medical team (a surgeon, anesthesiology technician and a paramedic). During the flight, we triaged the casualties according to wound characteristics (severity, mechanism, location), physiological parameters, and provided basic life support stated by trauma resuscitation course (TRK). We transmitted these findings to the military trauma center to provide hospital preparedness.

Result: Injury mechanisms were 70% explosives and 30% high-velocity weapons. Time to hospital admittance was < 50 min after the injury. Most frequent sites of injury (AIS 1–5) were extremities (75%) and thorax (38.3%); the frequency of ≥ 2 anatomical site injury was 35%. Capillary refill rates were; < 2 seconds 74.3%, > 2 seconds 25.7%. Mean SaO2, GCS, HR, Respiratory Rate values were 97.2 ± 3.2, 14.1 ± 2.34, 87.6 ± 20.5, 17.5 ± 3.1, respectively. During uninterrupted care, 6 (10%) intubations were performed and 67% of casualties were operated upon admittance without any onboard mortalities.

Conclusion: The high energy and lethality of the wounding agents in combat render the helicopter evacuations indispensible. Additionally, civilian major trauma patients may benefit from expeditious transport to the closest trauma centers or from rural inaccessible areas within the 'golden hour of trauma'.

509 Simple Method to Make IV Procedure Easier for the Forward Medical Team Personal

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The most important steps for the treatment of the combat injury causalities are to stop or reduce bleeding and to start fluid resuscitation. Peripheral intravenous (iv) line placement is one of the most important procedure in the battlefield conditions. Most of the time, fluid resuscitation would be the only available medical treatment for the injured combatant because of the prolonged evacuation period in the battlefield. Also, this procedure would be very difficult and time consuming especially under hostile gunfire. Excessive blood loss and hypotension may cause the peripheral venous collapse and makes the procedure more difficult.

Here we described a simple method to make this procedure easier. We offer the forward medical team personal to perform the upper extremity peripheral venous mapping of the combatant before the operation. The medical providers (doctor or paramedic) who would perform the first medical intervention would examine the upper extremities of baddy just before the operation. The medical care provider should determine the suitable situations for the iv line placement. Then he should remark the both site of the appropriate vein by camouflage paintings, leaving the probable angiocath insertion sites non-painted.

We believe that this method would make the peripheral iv line placement easier and faster for the forward medical team personal in the war conditions. One probable disadvantages of this method is the negative psychological effect on the combatant that makes them to estimate the risk of wounded in a few hours.

510 A Study On Work Anxiety States of Students in Ambulance and Emergency Care Technicians Department and in Radiology Department, Vocational School of Health Services, Marmara University

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Introduction and objectives: Ambulance and emergency care technicians are the key personnel for pre-hospital care of trauma. This study reviews the work anxiety states of some of the students in Ambulance and Emergency Care Technicians Department, Vocational School of Health Services, Marmara University by comparing it with those of the students in Radiology Department of the same school.
Methods: This study was developed as a sectional type of study and was conducted on 94 volunteer students from the above mentioned departments. The data were analyzed using the SPSS 16.00 software and employing the frequency distribution, t-test for individual groups, and unidirectional variance analysis methods.
Results: The study group of subjects was 81.9% female and 18.1% male. 57.4% of the subjects expressed anxiety over their employment in the future; 42.6% of them expressed no work anxiety. The work anxiety points of the subjects were compared in terms of their genders, academic years and departments, and said comparison did not reveal any statistically significant difference ($p > 0.05$).
Conclusions: The work anxiety state is one of the major factors having an impact on professional success, and is a negative state having an impact on one's performance, success and, in turn, psychological state. It would be proper to study the issue of work anxiety by obtaining psychological support, and to cooperate with the actors in this sector to develop solutions. It is concluded that further studies should be conducted on work anxiety and its reasons.

511 Trauma is The Neglected Disease of Modern Society; is Your City Prepared to Respond to Trauma?

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In general, emergency patients should be transported to the closest appropriate hospital. If the emergency medical services have identified a specific hospital with better resources to treat seriously injured patients, the patient should be transported to that institution, bypassing closer hospitals.
The cooperation is expected between the hospitals, and the development of formal transfer agreements, describing all of the legal, economic, and medical aspects of the relationship are encouraged. Ideally, the entire trauma system in a city should be designed on the basis of need and existing resources, with all affected parties involved in the planning, development, and implementation.
The goal of the system is to match the needs of an injured patient to the resources of the available facilities so that optimal and cost-effective care is achieved. We conduct six essential questions for the preparation of trauma.
Is there a legal authority to formally designate hospital's trauma response in your city?
What sources were used as a basis for standards of the trauma response in your service area?
Were the number of hospitals identified for your service area limited based on the results of needs assessment?
What type of transport practice occurs in your service area when a field assessment identifies a trauma patient with severe injuries that threaten loss of life or limb?
Is a trauma registry present in your service area?
Is there a designated trauma advisory committee that evaluates the performance of trauma care delivery within your service area?

512 Motorcycle, Motorbike and Bicycle Injuries at Emergency Department: an Epidemiologic Study

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Objectıve: Traffic accidents involving motorbike, motorcycle and bicycles have higher mortality and morbidity rate than the other accidents. In this study, the epidemiologic features of the cases that had these accidents and applied to emergency department.
Methods: The subjects, who applied to emergency service between May and November 2008 due to accidents caused by motorbike, motorcycle and bicycles, were evaluated prospectively. Properties such as age, gender, the way the accident happened, having a driving license or not, protective precautions, severity of trauma, most commonly affected systems, hospitalization duration and mortality rates.
Results: Fifty-seven subjects were included in the study. Of all the cases, 91.23% were male, mean age 26.8 and median value was 25. None of the subjects had protective precautions (helmet, knee-guard, gloves, etc.) and only 29.82% had licenses. The first three systems exposed to trauma most were head–neck (56.14%), skin (42.10%) and lower extremities (28.07%). While 37 cases were discharged from emergency department, 20 were hospitalized at the clinics. The mean duration of hospitalization was 132.92 h (5.5 days), and the median value was 48 h. Eight of the cases (14.03%) were exitus.
Conclusions: This study is remarkable since it exhibits that the males in young age group are affected more from motorbike, motorcycle and bicycle accidents, individual protective precautions are never paid attention, over 2/3 of the accidents are caused by the riders without a license and head trauma is an significant cause of mortality and morbidity.

SKELETAL TRAUMA

513 Skeletal Trauma

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A study of 37 neglected per-trochanteric fractures from 2 institutions was done. Per-trochanteric fractures have conventionally been

treated with either Dynamic Hip screws or the IMHS (Intra medullary Hip Screw) systems. Both these procedures have shown poor result in severely osteoporotic bones and in presence of severe comminution. We evaluated the role of primary hip arthroplasty (consisting of both total hip replacements and hemiarthroplasty) in these comminuted, osteoporotic or neglected fractures. These patients at-risk were in need of a single definitive surgical plan for early ambulation and preventing complications. Typically these patients were elderly with poor mobility and had multiple other medical condition to be able to withstand multiple surgeries. There was a need to obtain the best results with the single, rapid procedure for pain relief and early ambulation. Excellent to very good results were obtained in about 77% of these patients. Good results were obtained in about 19% of these patients and poor results in about 4%. Most of the poor results were the outcomes of complicated medical conditions rather than the failure of the orthopaedic procedure itself. We advocate arthroplasty in neglected, osteoporotic or severely comminuted per-trochanteric fractures for immediate mobilization and optimising outcomes.

514 Safety and Efficacy of Intra-articular Injections in Patients Waiting for Total Knee Arthroplasty

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The role of intra-articular steroids or hyaluronic acid injections in early arthritis may be warranted and perhaps safe. But for patients waiting for a knee replacement these can prove positively dangerous. A meta-analysis has revealed that intra-articular injections given in patients waiting for a knee replacement procedure is fraught with dangers. Apart from a high risk of post-operative infection and failure of the procedure, several other side-effects or complications make this risky. There is a higher-than-average chance of quadriceps tendon rupture, delayed wound healing, superficial infections and slower rehabilitation. In comparison hyaluronic injections have been found efficacious in the short term and do not contribute to complications normally attributed to steroids. Thus intra-articular injections should be used with caution, repeated injections are best avoided and are certainly contraindicated if a procedure is anticipated to be performed within six months.

515 Open Tibial Fractures Treated by the External Fixation Method

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Introduction: The external fixation of the open and closed unstable tibial fractures is good and effective method for everyday traumatology praxis. The external fixator according to Mitkovic enables unilateral fixation with convergent pins orientation, without any guidance. There is also possibility for compression, distraction and varus/valgus corection of the deformation.
Methods: The result of external fixation in 42 patients with open tibial fractures (Gustilo Type II, IIIA, IIIB), average age 42.59 years old (19–69), are presented in this work. All fractures are treated with Mitkovic external fixator type M29, M20CD and M20CDV.
Results: The results applied external fixation method are excellent and good. Union rate was 81%. Nonunion rate was 12%, malunion 7%.
Conclusions: External fixation of open tibial fractures is a simple and effective method, that enables the safe healing of the fractures, early mobilization of the patients, early weight-bearing, as well as early rehabilitation.

516 Management of 5Th Metacarpal Fractures: a Survey of Current Practice Among Upper Limb Surgeons in United Kingdom

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Aim: Our study was aimed at investigating the current practice of management of little finger metacarpal fractures among upper limb surgeons in United Kingdom.
Methods: We conducted a web-based survey between June 2006 and June 2007 consisting of 10 multiple-choice questions that was e-mailed to 278 upper limb surgeons.
Results: 43% upper limb surgeons prefer neighbour strapping alone for non-operative management of little finger metacarpal fractures. Ulnar gutter cast or splint was the next choice among 19% surgeons while 13% respondents apply neighbour strapping to ring finger along with a splint. There was mixed response regarding period of immobilisation. 40% of surgeons were in favour of 3 weeks of immobilisation, 23% for 2 weeks while 28% do not immobilise these fractures at all. For surgical intervention, rotational deformity was the most common indication (84%), followed by open fracture (70%), intra-articular fracture (44%), associated 4th metacarpal fracture (26%), shortening > 5 mm (21%) and volar angulation – (15%). Follow up one visit was suggested at 3 weeks by 40% while 36% thought that no follow up is required.
Conclusion: Many clinical studies have demonstrated that in the conservative care of boxer's fractures (casting, with or without reduction), between 20° and 70° of dorsal angulation is acceptable. The indications for operative intervention are open fracture, rotational deformity, intra-articular fractures and shortening. We conclude from our survey that there is no consensus even among the upper limb surgeons with regards to management of little finger metacarpal fractures in United Kingdom.

517 Early Ankle Fracture Fixation Can Lead to Reduced Length of Stay: the Window of Opportunity

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Introduction: The aim was to compare the results and length of stay of patients of early ankle fracture fixation with conventional fixation in a hospital in UK.
Methods: We collected data from case-records, clinical coding information and clinic letters. 200 patients who underwent ankle fracture fixation from July 2004 to June 2005 were included. We looked into age, place of living, Weber classification, mechanism of injury, comorbidities especially diabetes and peripheral vascular

disease, smoking, anticoagulation, delay for theatre with reasons, length of stay in hospital and complications if any. Other things to look were overlying skin condition, the amount of swelling, talar shift needing reduction, injury types-open or closed or with associated neuro-vascular injury. In operative management – what method of fixation was used.
Results: There were 200 ankle fractures that required surgical intervention. Only 22 of these had surgery within 12 h (mean length of stay, 3.3 days), and 67 of these had surgery within 48 h (mean length of stay, 4.9 days), and 111 had surgery after 48 h (mean length of stay, 9.4 days). Finally we calculated the cost (784 bed days – £235 thousands pounds) incurred to the trust in terms of extra bed occupancy and treating the complications as a result of wait.
Conclusıon: This study shows that early operative intervention for ankle fractures reduces the length of hospital stay. We want to emphasise on the 'Window of Opportunity' ie initial 12 h to fix ankle fractures to decrease overall morbidity & cost.

518 The Conservative Treatment of Upper Cervical Spine Fractures in Children

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Background: The treatment of the upper spine fractures without displacement and neurological damage in children and adolescents is generally conservative.
Material and method: From 01/2002 to 01/2007 12 upper spine fractures were treated. 1 patient with occipital condylar fracture, 5 with C1 fractures without displacement, 6 with C2 without displacement. The fractures were caused by a traffic accident in 6 cases, sport accidents in 4 cases, 2 the others. In 2 patients cervical fractures were accompanied by polytrauma. After accommodation in hospital XR, CT and MRI were used. All the patients were treated conservatively using the cervical spine brace for 85 days (66–125).
Results: CT scan and XR cervical spine in flexion and extension 3 month after the treatment were used. In 1 patient XR shows the cervical instability C1_2 after C1 fracture needed the surgical procedure.
Conclusion: The orthopedic treatment of the upper spine fractures without displacement is a save method with good results.

519 Angulated Distal Forearm Fractures in Children: Closed Reduction by Pronation or Supination of the Hand

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Introduction: Pediatric forearm fractures are common. The majority has satisfactory outcome. But poor results do occur and malunion can compromise rotation. We belief that the angulation of the fracture depends on the action of the body and that we can reduce the fracture by completing the action. This way we can perceive a stable anatomic reduction without internal fixation.
Methods: We undertook a prospective study of distal forearm fractures in children. We included 21 children with a non-displaced angulated metaphyseal distal forearm fracture. The angulation was between 15° and 42°.We all reduced them by completing the action of the body. This means a volar angulated fracture is reduced by pronation of the hand and a dorsal angulated fracture is reduced by supination. After the reduction they were casted in an upper-arm cast in pronation or supination depending of the reduction manoeuvre. Afterwards the all received 3 weeks of upper-arm cast and 3 weeks of lower-arm cast.
Results: They all healed without loss of reduction and without further treatment. They all had full recovery of function.
Conclusıon: Non-displaced angulated metaphyseal distal forearm fractures in children can be treated conservatively by closed reduction and plaster cast.

520 Percutaneous Pedicular Screw Fixation Technique in the Treatment of AO Type a Fractures of the Vertebra

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Posterior enstrumentation was applied to 10 patients due to thoracal, thoracolumbar and lumbar AO type A fractures with percutaneous pedicular screw fixation technique. The clinical results of these cases were discussed in this study. All the patients were treated with minimally invasive technique without soft tissue dissection. Multi system trauma was observed in four patients. Posterior ligamentous injury was seen in three patients. All the cases were neurologically intact. The operations were performed by an experienced spinal surgeon without any complication. The average follow-up of the patients was 18 months. The local sagittal angles of all cases were measured preoperatively, postoperatively and at last follow-up. We found that postoperative adequate sagittal correction was obtained. We did not observe a significant increase in kyphosis at last follow-up measurements. With this technique, the well-known disadvantages of open surgery like, hemorrage, detachment of muscles and instability secondary to mucle insufficiency could be avoided. In suitable patients with AO type A thoracolubar fractures posterior instrumentation with percutaneous pedicular screw technique ia an effective treatment modality with advantages of minimal invasive surgery like, less pain compared with bracing, early mobilization without the need of a brace for multitrauma patients, using the advantages of posterior instrumentation in the prevention of postoperative kyphosis. As a result percutaneous pedicular screw fixation technique is a new and effective treatment option in spinal surgery as a minimal invasive method.
Author to editor: Minimal invasive surgery is increasing its popularity over time. In spinal fracture fixation we have new mini invasive techniques. In this study the results of this technique was discussed.

521 VEGF Serum Concentrations in Patients with Long Bone Fractures

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Background: Vascular endothelial growth factor (VEGF) plays an important role in the bone repair process as a potent mediator of angiogenesis and influences directly the osteoblast differentiation. Inhibiting VEGF suppresses angiogenesis and callus mineralization in animals. However, no data exist on systemic expression of VEGF with regard to delayed or failed fracture healing in humans so far.
Methods: One hundred fourteen patients with long bone fractures were included into the study. Serum samples were collected over a period of 6 months following a standardized time schedule. VEGF serum concentrations were measured. Patients were assigned to 2 groups according to their course of fracture healing. The first group contained 103 patients with physiological fracture healing. Eleven patients with delayed- or non-unions formed the second group of the study. In addition, 33 healthy volunteers served as controls.
Results: An increase of VEGF serum concentration within the first 2 weeks after fracture in both groups with a following decrease within 6 months after trauma was observed. Serum VEGF concentrations in patients with impaired fracture healing were higher compared to the patients with physiological healing during the entire observation period. However, statistically significant differences were not observed at any time point between both groups. VEGF concentrations in both groups were significantly higher than those in controls.
Conclusion: The present results show significantly elevated serum concentrations of VEGF in patients after fracture of long bones especially at the initial healing phase indicating the importance of VEGF in the process of fracture healing in humans.

522 The Combined Osteosynthesis of the Children's Humeral Bone Diaphyseal Fractures

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Introduction and objectives: The osteosynthesis of humeral bone fractures remains as a topical problem, quantity of these injuries reaches 14.5–16.2% among all fractures of long bones of extremities. Diaphyseal fractures reaches 13–25% cases of all injuries of a humeral bone (Klimovitsky V.G. 2003). The methodic of the combined osteosynthesis has been applied on 9 children with fractures of a humeral bone at the age of 6–13 years. 6 children had a radial nerve injury.
Methods: In the department of children's traumatology of our clinic we applied the methodic of combined osteosynthesis: the combination of intramedullary osteosynthesis by Bogdanov's nail, and fixation of compressive-distraction Ilizarov's apparatus (hereafter CDA). First we place Bogdonov's nail intramedullary after an open reposition of bone fragments. After that we put on Ilizarov's devise consisting two half rings that fixate the pins which are taken through bottom and top third of humeral bone.
The compressive-distraction Ilizarov's apparatus and Bogdonov's nail have been taken off on 24th–32nd day, after radiographic examination.
Results: The healing of wounds passed with primary intention, the disordered innervations has been recovered within 1–2 weeks. We often observed restoration of the circulation immediately on an operating table within 30–40 min after stabilization of fragments. The recovery of elbow joint function has observed in the next 1–2 weeks after taking off the CDA.
Conclusion: The combination of intramedullary osteosynthesis by Bogdonov's nail and CDA fixation allows to get stable osteosynthesis, and receive best results.

523 Predicting Value of Different Commercial Quick Tests for Fracture Risk Assessment in Elderly Patients with Already Prevalent Proximal Femoral Fragility Fracture

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Cohort study of patients above 65 with prevalent proximal femoral fracture. We checked the predicting value of different commercial quick tests for risk assessment in elderly people.
We used quick test for predicting risk for fragility fracture of the Slovenian patient oriented society for osteoporosis, 2 commercial tests of the pharmaceutical industry and SF36 in elderly with fresh femoral fracture.
The test of the Slovenian patient oriented society for osteoporosis does predict higher risk powerfully. Only 5 out of 20 patients were not recognized to be at higher risk for fracture. The two commercial tests did not confirm their validity. The patients with prevalent fracture were not estimated to be at higher risk for fracture! The SF36 test showed strong impact of prevalent fracture on life quality. The analysis shows fair predicting value of so called quick tests of RR in patients with prevalent osteoporotic fracture of the proximal femur. Their main benefit is to warm the elderly patient of osteoporotic fracture, but do not estimate the proper individual risk.

524 Outcome of Intracapsular Femural Neck Fractures Treated with Cannulated Screw Fixation

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Introduction: Femoral head-preserving treatment for femoral neck fractures with cancellous screws is a method widely performed. Treatment of intracapsular fracture varies according to the pattern of the fracture, patients age, bone quality, and comorbidities.
Methods: We evaluated the surgical outcome following cannulated screw fixation of femoral neck fractures in 70 patients (Garden type I–IV fractures). All patients were treated between may 2003 and may 2007 by the same surgical equipe. The mean age was 44.3 years (range 25–65 years). Mean follow up was 49.8 months (range 12–64 months). Mean preoperative time was 49.2 h (range 2–220, median 24). WOMAC questionnaire and clinical documentation was used to evaluate patients outcome.
Result: The mean pain, stiffness and physical functional score was, respectively, 77.3, 76.4, and 75.9 (best score:100, worst score:0). Eight patients undergone femural head necrosys, two patient had femural neck collapse, one developed pseudoarthrosis.

Conclusıon: A significant correlation was found between WOMAC score, patients age and comorbidity. There was no correlation between treatment outcome, follow-up time and preoperative time.

525 Supracondylar Fractures of the Humerus in Children – Results of Surgical Treatment

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Introductıon: Supracondylar humerus fractures in children are common. Fractures without displacement usually undergo conservative treatment, but the one displaced usually require surgery with open or closed reduction. The purpose of this work is to analyze the fracture characteristics and compare the outcomes of the methods of treatment.
Methods: This study was conducted from January 1998 to December 2007 and included 70 patients of Guimarães Hospital, who had type IIa, IIb or III according to the Wilkins modification of the Gartland system and underwent surgical treatment (closed reduction and percutaneous fixation with 2 k-wires or open reduction and fixation with 2 cross k-wires). Outcomes were measured according to Flynn criteria. Elbow motion and carrying angles were compared according to the surgical technique and fracture type and the data were analyzed.
Results: There were 53 males and 17 females between 2 and 12 years (medium age 5,7); 3% were type IIa fractures, 32% IIb and 65% III. 95% had extension type fracture and 5% flexion. The medium charging angle were 4,46º in open reduction and 7,6º in closed. According to Flynn criteria the results in open reduction were excellent in 64% and good in 22%; and in closed were excellent in 34% and good in 33%.
Conclusions: Closed reduction should be tried even in type III because it permits a good outcome, but the reduction is not anatomic and had compromised carrying angles. Open reduction had worse outcome, lost of extension, but is indicated when the fracture is irreducible by closed methods.

526 A New Distal Interlocking System for Tibia Intramedullary Nailing

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Along with advantages of intramedullary nailing (IMN) of tibia but it has still some problems. One of the most problematic step during IMN is distal interlocking (DI). In this in vitro study we present a new distal interlocking system (Distal Supportive Bolt Locking Screw-DSBLS) for tibia. Tibias of 45 dry cadavers are used. Standard AP-Lat X-rays are taken. The diameter of isthmus and the lengTh of each tibia is measured and the suitable nail is selected accordingly. Five tibias are excluded from the study because of extreme anterior bowing.
First, DSBLS is applied to 2.5 cm proximal to most prominent point of medial malleol of tibia. The DSBLS was inserted parallel to the joint surface in frontal and horizontal plane.
After the DSBLS is applied the selected nail is inserted. Reamed IMN is used for the tibias with narrow isthmus (6). The success of DI is checked following the insertion of nail with set screw on the DSLBS. The unsuccessful attempts are repeated after the reason is removed. The DI of 36 tibias were successful and 4 were unsuccessful at the first attempt. In unsuccessful cases, the nails were at the posterior (2), anterior (1) and lateral (1) of DSBLS. Second attempt were successful in all of them.
A problematic step of tibia IMN is DI and is solved with DSBLS. The need for flouroscopy is minimized, and external guide is not required in this system.

527 Pediatric Collum Femoris Fractures

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Collum femoris fractures accounts 4.5-5% of all fractures. However it is very rare in children (1%). In this study we evaluated 12 pediatric patients who were operated due to collum femoris fracture in terms of avascular necrosis and functional outcome. Age of the patients ranged from 3 to 14. There were seven girls and five boys. Two of the patients were admitted to the emergency department due to a fall from height, therefore they had multi system trauma. The remaining ten patients had isolated collum femoris fracture. Fractures was classified according to Delbet classificaion; seven transcervical and five cervicothrochanteric. Locking plate-screw fixation was applied to one patient, other fractures were fixed with two or three cannulated screws. Open reduction was applied to four patients and closed reduction to eight. Five of the cases were operated in the first 24 h of the fracture, however the remaining seven patients were operated after the first 24 h (2–10 days) due to late admission. Range of motion of the hip joint was limited in only one patient who had polytrauma and operated after the first 24 h. There were three avascular necrosis as acomplication. All of them operated after the first 24 h and all the fracture types were cervicotrochanteric. Open reduction was applied to two patients and closed reduction to one.
Pediatric collum femoris fractures are rarely seen in children but treatment is challenging and open to complications. Fracture type, surgical methods, did not effect the outcome, but timing of surgery did.
Author to editor: In this study we discussed the outcome of pediatric collum femoris fractures, which is a very rare fracture in orthopaedic experience.

528 Treatment of Humerus Fractures. Conservative or Surgical Methods?

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Surgical management of humerus shaft fractures is an increasing interest nowadays. We want to discuss the outcome of conservative, open reduction and internal plate fixation (ORİF) and intramedullary nailing (IMN) methods in adults (22–80 years old). 10 patients had conservative treatment with modified custom made Sarmiento brace and 9 of them had union with 5°–20° of malunion. None of the nine have complains and the avarage union duration is 10 weeks (8–12). One patients did not tolerate bracing and undergone surgery. 14 Patients had ORİF and 2 had gone second operation for nonunion and 4 had elonged wound drainage. All the fractures healed eventually with in

10 weeks (6–16). No neurovascular complication was observed. 18 Patients had IMN treatment and 4 had delayed union up to 6 months, 2 had undergone reoperation with ORİF for non-union, 1 had intraoperative fracture of elbow and 6 had shoulder problems with impingement and rotatory cuff problems. Avarage union duration was found 9 weeks (7–12). Surgical treatment is getting more popular for long bones nowadays. Early return of work and social life, anatomic reduction, using no sling or such devices and easy follow up protocols are the facts that popularising the surgical management. But in our series, we had seen multiple types complications that are as high as they are mentioned in literature. With the experience of those 42 patients that had been treated with in this year, conservative treatment methods have to be conserned firstly in suitable and tolerable patients for us.

529 Posterior Ligamentous Complex Length Used as Reduction Parameter in Thoracolumbar Burst Fractures

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Intoduction and Objectives: Correction of sagittal deformity is important in thoracolumbar burst fractures. The clinical maneuvers needed for reduction and the assessment of correction of the fractured vertebra is not well described. In this prospective series we used the length of the interspinous ligaments as reduction parameter. Our aim was to evaluate the efficacy of this assessment technique in achieving good correction.
Methods: From 1999 to 2005 25 patients (M/F 14/11, mean age 34.7) with unstable thoracolumbar burst fractures were treated by posterior fusion with a standard construct by a single surgeon. All patients were treated with segmental posterior instrumentation with two levels above and two levels below the fracture level fixation by means of pre-contoured rods and distraction technique. With these maneuvers the length of the injured level was tried to be equalized to the mean of upper and lower levels. Anterior column was assessed by radioscopy. Preoperative and postoperative radiographs were analyzed and local kyphosis (LK), Farcy's sagittal index (FSI) and compression percentage (CP) were measured.
Results: The preoperative LK decreased from 18.96° to 3.44°, FSI decreased from 18.2° to 3.8° and CP decreased from 28 to 46.8. After a minimum follow-up time of 2 years all patients continue to do well with no statistically significant decrease in these parameters.
Conclusions: Assessment of thoracolumbar burst fracture reduction with pre-contoured rods and distraction technique can be made safely by intraoperative measurement of the length of the interspinous ligaments.

530 Our Experience in the Surgical Treatment of Patients with Pelvic Fractures

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Aım: To present our results in the surgical treatment of patients with pelvic fractures.
Materıal-Method: we studied the patients admitted in the Politraumatology Casa Austria with pelvic fractures between 01.08.03–15.09.08. We assessed the following parameters: trauma cause, associated lesions, type and location of the fracture, method of treatment, complications.
Results: studied group: 45 patients (p) – 27 male (60%) and 18 female (40%) with a mean age of 38.28 ± 13.15 years. The car accidents were the most frequent trauma cause–80%. ISS: 11p with ISS 1–15, 7p with ISS 16–24, 17p with ISS 25–40 and 10p with ISS over 40. We used Judet–Letournel classification for acetabular fractures – 23p and Tile classification for pelvic ring fractures – 22p. We noticed the high frequency of hip dislocations associated in these patients – 52%.
Methods of treatment: open reduction and internal fixation (ORIF)–17p, external fixateur (ExFix)–14p and skeletal traction – 14p.
Complications: Traction-stiffness and hypotrophia of lower limb muscles (100%) and malunions (50%); ExFix-complications in 36% of cases; ORIF-complications in 29% of cases. We had 5 deaths in our group (11%) due to severe associated lesions, all these patients having an ISS score over 40.
Conclusions: the traumatic lesions of other systems were frequent in our group – 75% of the cases, due to the high energy injury mechanism. ORIF have the lowest rate of complications, with the best functional results in well selected cases, but it is a method rare applied in emergency.

531 Fatal Pulmonary Fat Embolism During Shoulder Hemi-arthroplasty

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Case: An 85-year old lady was admitted in our emergency department with a Neer 3-part fracture of the right proximal humerus caused by a fall. She was operated on and received a shoulder hemiarthroplasty. During cementation of the stem the patient became bradycard and acute respiratory arrest occurred. She was resuscitated, but eventually died 9 h postoperatively. Postmortem examination revealed embolic bone marrow occluding the pulmonary capillaries.
Comment: Pulmonary embolus after upper extremity surgery is a rare complication. Fatal pulmonary embolus is even more rare. When reviewing literature there is no previous case of fatal pulmonary embolus caused by fat emboli described. Fat embolism syndrome was first described by Zenker in 1861, but its frequency today is still unclear. Usually it presents as a multisystem disorder. The most often and most seriously affected organs are the lung, brain, cardiovascular system and skin. It is a self-limiting disease, therefore treatment should be mainly supportive.

532 Treatment of the Extraarticular Knee Arthrofibrosis after Femoral Diaphyseal Fracture

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Purpose: Lack of knee flexion is a possible complication in severe femur fractures. Two different techniques for the treatment of this problem were applied.
Materıals-Methods: From 2006 to 2008, 3 patients with severely arthrofibrotic knees were managed with two different operative techniques. The mean age of the patients at the time of the operation was 45 years. We recorded the clinical outcome of 1 patient using Judet quadricepsplasty with a follow-up of 28 months, and of two patients using extra-articular mini-invasive quadricepsplasty and intra-articular arthroscopic lysis of adhesions during the same anesthesia session with a mean follow-up of 14 months. All patients were evaluated according to the criteria of Judet and The Hospital for Special Surgery knee-rating system.
Results: The average maximum degree of flexion increased from 33° preoperatively to 65° at the time of the most recent follow-up. According to the criteria of Judet, the result was good for 2 knees, and fair for one. The average Hospital for Special Surgery knee score improved from 48 points preoperatively to 58 points at the time of the most recent follow-up. A superficial wound infection occured in one patient.
Conclusions: If you select the appropriate cases, the Judet procedure and mini-invasive operation for the severely arthrofibrotic knee can be used to increase the range of motion and enhance functional outcome.

533 Surgical Treatment of Floating Joints

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Purpose: Floating Knee and Elbow injuries are complex injuries. The types of fractures, soft tissue and associated injuries make this a challenging problem to manage. We present the outcome of these injuries after surgical management.
Materials and Methods: Two patients with floating knee injuries(classified by Blake and McBryde) and one patient with floating elbow injuries were managed over an average of 22 months. Both fractures of the floating knee injury and the three fractures of the elbow injury were surgically fixed using different modalities. The associated injuries were managed appropriately. Assessment of the end result used the Karlström criteria after bony union.
Results: Mechanism of injury was road traffic accidents in two patients (floating knee) and falling from height for one patient (floating elbow). There were 2 associated injuries, patient 1 was TipIIA, patient 2 was TipIIB. Both these patients had intramedullary nailing for femur fractures. Patient 1 had ilizarov external fixation for segmenter tibia fractures, patient 2 had a proximal medial plate for proximal tibia fracture. Patient 3 had plates afıxed to all fractures.Complications were knee stiffness and delayed union of femur in a patient (second operation required). The bony union time average from 32 weeks for femur fractures, 18 weeks for tibia, 12 weeks for upper extremities. According to the Karlstom criteria the end results was acceptable. The average elbow score was 85/100 (good).
Conclusions: The associated injuries and the types of fractures (open, intra-articular, comminution, nerve damage) are prognostic indicators in floating joint injuries.Intramedullary nailing of the femur fractures, ilizarov external fixator of the open segmentar tibial fractures, plates of the proximal tibial and upper extremites fractures and postopertive rehabilitation are necessary for good final outcomes.

534 ACL Reconstruction in Skeletally Immature Patients with Tibial Bio-screw Fixation

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Introduction: The tibial screw fixation of the reconstructed ACL in skeletally immature patients was in former days not very recommended due to the possible damaging of the epiphyseal plate. In this prospective study our results with this uncommon technique are presented.
Materıals–Methods: From January 2006 until December 2007 there were 17 patients operated with this technique. Inclusion criteria were intraligamentary ACL lesions with open physes Tanner stadium I-III. Excluded were bony ruptures of the eminentia. A preoperative X-ray of the knee as well as an MRI were available for all patients. Tegner, Lysholm and IKDC scores were evaluated. After that the autologous ACL reconstruction with semitendinosus tendon was performed. Femoral fixation was done with a flip button, on tibial side with a bioabsorbable interference screw after direct scoping of the tibial tunnel with measurement of the epiphyseal plate. At follow up all scores were evaluated again and all patients were clinically examined.
Results: Mean time to follow up was at 20.4 months (12–28 months). The mean age of the patients was at 13.8 years (9–15 years). All patients had excellent to good results in the scores used. There was no damaging of the epiphyseal plate until now.
Conclusion: ACL reconstruction with autologous semitendinosus tendon and tibial fixation with a bioabsorbable interference screw at skeletally immature patients is a good alternative to the common procedures. Though this technique is more demanding for the surgeon.

535 Our Experiences with Reversed Shoulder Prosthesis in Proximal Humeral Fractures

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There is insufficient evidence from randomized trials to determine the optimal intervention in patients with displaced four-part fractures of the proximal humerus: head preserving surgery with problem to obtain and maintain reduction until bone healing, implant failure, AVN of the head, HA with > 50% tuberosities related complications- resorption, displacement, RSA with high complication rate, moderate function due to restricted rotation and insufficient long-time follow-up.
In our presentation we will discuss:

- New RSA designs, which improve function and lessen complication rates
- Question of tuberosities fixation to RSA in proximal humeral fractures
- Literature overlook of RSA in proximal humeral fractures

- Our experiences with RSA in proximal humeral fractures compared to RSA in RCA (27 procedures between Dec 2004 and Sept 2007)

The goal of RSA is to minimize shoulder immobilization and to start functional rehabilitation immediately. Indications are same as for HA + tuberosity osteoporosis and comminution + week or absent RC. Decision for IF, HA or RSA is often intraoperative. Tuberosities fixation is debatable (prolonged immobilization, prosthesis dislocation). Functional results are more consistent than in HA, but complication rate is higher (it may be lowered by new prosthesis designs).

536 Frequent CT Scanning Due to Incomplete 3-View X-ray Imaging of the Cervical Spine

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Background: Conventional C-spine imaging is still widely used, despite increasing replacement by CT scanning. The aim of this study was to analyze the frequency of incomplete C-spine X-rays (3-view series) in blunt trauma patients.
Methods: During a 2-year period we analyzed the frequency and value of 3-view series of the C-spine. Secondary we assessed the reasons for subsequent CT scanning after the 3-view series according to the following classification: inevaluability, incomplete 3-view series, evaluation of findings on 3-view series or for unexplained, persistent clinical symptoms. Furthermore we evaluated predictors for incompleteness.
Results: 88 C-spine injuries were diagnosed in 1283 blunt trauma patients (6.9%). 159 patients (12%) had their C-spine cleared based on the NEXUS criteria. 717 patients were primarily evaluated with 3-view series and 395 patients primarily with CT scanning. Within the population with primarily 3-view series 249 (35%) were repeatedly incomplete and 16 (2%) were inevaluable. In the major part of the incomplete 3-view series no apparent reason could be determined. However, the presence of clavicular fractures (resulting in incomplete radiographs in 68 vs. 43% without a fracture; $p < 0.001$) and rib fractures (56 vs. 34%; $p = 0.008$) were associated with incomplete 3-view series.
Conclusion: In more than a third of the patients primarily assessed with 3-view series, the results are incomplete or inevaluable necessitating CT scanning. Therefore, the diagnostic value of 3-view series is questionable. In patients with clavicular and rib fractures 3-view series can be omitted and primary CT scanning is advised.

537 Treatment of Metacarpophalangeal and Interphalangeal Joint Luxations

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Introduction: Luxation of the metacarpophalangeal (MCP) and interphalangeal (IP) joints are frequently occurring traumatic hand injuries, which is a disabling trauma. In order to gain more insight in the epidemiology and current treatment of these injuries this study was conducted.
Patients and Method: Approximately 2,000 patients with hand injury were treated at the Emergency department of a level-2 trauma-centre in the last 3 years. The number of luxations at the MCP and IP joints was registered. Information of the trauma-mechanism and patient characteristics was collected.
Results: Approximately 5 percent of all hand injuries involved traumatic luxation at the MCP and IP joints. A total of 94 patients were included in this study. In this population the most frequent luxations were located at either the 1st MCP or the 5th MCP and PIP joint. The majority of the cases where due to fall or sport injuries (55%). Overall the vast majority was treated with a plaster splint. Patient remained for 6 weeks under control. Patients were also evaluated by a short clinical exam after treatment. Patients who suffer from poor to moderate disabilities had flexion less than 60° and no ability for extension in MCP and IP joints. Normal function was restored in 49 patients, 45 were left with moderate to poor disability. and 12 patients were left with very limiting disability who where treated with surgery intervention.
Conclusion: To date no standardized treatment exists for this common injury. Prospective and-injury databases are needed to gain more insight in outcome.

538 Treatment Concept in Gustillo II and IIIa Grade Open Distal Tibia Fractures

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The treatment of open distal tibia fractures is still discussed controversially and they are a great challenge for surgeons. It is still not clear if there should be initial stabilization with an external fixator or primary osteosynthesis with an intramedullary nail or plate. We retrospectively examined 20 patients with II° and IIIa° open distal tibia fractures which were treated during the last 4 years in our level one Trauma Center. We treated 16 male and 4 female patients with an average age of 31 years. Ten patients were treated with an external fixator and 10 patients were treated with an intramedullary nail or plate osteosynthesis in acute surgery. The patients, firstly treated with an external fixator, were stabilized with reamed intramedullary nailing in eight cases and with locked plating in two cases after wound closure. There was no difference in the duration until bony union in any groups. Fewer unplaned revisions ($n = 3$) and no deep osseous infections were found in those patients treated with an external fixator in the acute phase of the injury. Patients treated with a definitive osteosynthesis underwent unplaned revisions in six cases and developed deep osseous wound infections in four cases. We therefore recommend that initial treatment with an external fixator should be preferred and after consolidation of the soft tissue, the definitive stabilization should be done with a stabile osteosynthesis system.
Author to editor: This topic remains of a high interest among trauma surgeons, especially now, that angle stable intramedullary fixation systems run the market.

539 Surgical Treatment of Clavicle Shaft Fractures

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Fractures of the clavicle shaft are common and have been typically addressed to nonoperative treatment. But favorable results with the precontured anatomic plates are facilitating surgeons for primary surgical treatment. This study reports the surgical results of 10 adult clavicle shaft fractured patients (age range 18–76) that had been operated with in last 18 months. All fractures were displaced and none of them was open nor had neurovascular injury. Avarege healing time was found 8 weeks (4–50 weeks). All patients had anatomic reduction postoperatively. 5 of the patients fracture site was grafted with DBM. 4 of 10 patients had sterile wound drainage which was lasted for 2 weeks postoperatively (all were grafted with DBM), 5 of them re-operated (3 of them for early implant failure and 2 early implant removal for plate disturbance) and one patient was operated for 5 times (2 of them was in another center) for early implant failure, nonunion,wound problems and neurovascular complications. 9 of 10 was healed eventually. 9 of 10 patients were satisfied with the treatment and had a full range of motion at final follow-up and were able to return to pre-injury occupational and activity levels. Nonoperative treatment of displaced shaft fractures may be associated with a higher rate of nonunion and functional deficits. However, our study shows that surgical treatment also has high complication rates. There is currently considerable debate about the benefits of primary operative treatment of these injuries because it remains difficult to predict which patients will have these complications.

540 PDGF in a Rat Femoral Non-union Model – a Promising Osteoinductive Factor?

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Platelet Rich Plasma (PRP) is applied in orthopaedic, maxillofacial and plastic surgery with variable outcome. Different growth factors and cytokines are stored in platelets, including Platelet Derived Growth Factor (PDGF), contributing to the potential positive effects of PRP. The aim of our study was to investigate the properties of PDGF administered locally in a rat femoral non-union model. In our experiment a critical sized osteotomy was performed in the rat femur, which was filled with a spacer, inhibiting bone formation for a period of 4 weeks. In a second operation this spacer was removed and the test item was applied into the defect. We compared the PDGF group (d = 250 ng, c = 1 μg/ml of PDGF in fibrin matrix) with the FIBRIN alone and BLANK control groups. Four weeks after the second operation, specimens were analysed by X-ray, μCT imaging and histology.
In group PDGF we found a μCT confirmed union in 0 of 7 specimens and the μCT evaluated bone volume was median 7.2 mm^2 (q1 = 6.1/q3 = 10.8). In the control groups there was a bony bridge in 3 of 7 FIBRIN and in 2 of 8 BLANK specimens. The bone volumes were median 15.7 mm^3 (q1 = 8.0/q3 = 18.4) FIBRIN and median 9.1 mm^3 (q1 = 7.1/q3 = 22.7) BLANK, respectively. We did not find a strong tendency for new bone formation in the group treated with PDGF. In our model we observed even a tendency to inhibit bone regeneration for PDGF.
Author to editor: The Topic of our Presentation: Research in Trauma

541 Perforator Based Radial/ulnar Artery Adipose-fascial Forearm Flap to Close Defects on the Hand Defects

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Introduction and objectıves: Hand traumas are one of the most common encountered complex traumas. Closing the defects on either dorsal or palmar side of the hand is sometime difficult because of limited local tissue and to provide a tissue the tendon glides underneath. In spite of high risk of donor side morbidity and sacrificing a major artery of the hand, radial forearm flap is the most frequent choice to close the defects at this region.
Method: In a year time, five patients with severe hand traumas who admitted to our clinic, treated with perforator based three radial artery and two ulnar artery adipose-fascial forearm flaps. The adipose-fascial island flap was raised on one or two of these perforators without sacrificing a major vessel.The flap was transposed to defect region and covered with STSG. In all five patients' donor side was closed primarily.
Results: The biggest flap size was 10 × 8 cm. There was no flap loss except one patient who had partial flap necrosis and it healed secondarily. The donor side was healed uneventfully in all the patients. There was no tendon adhesion.
Conclusıon: Perforator based radial or ulnar artery adipose-fascial flap is a safe and reliable method for closing defects on the hand. It has both less donor side deformity and fascial component of the flap provides better tendon gliding and less tendon adhesion. However, it requires more experience to raise adipose-fascial flap.

542 The (Selfmade) Hook-plate on the Upper Extremity

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Introductıon: Fixation of small fragments in articular or periarticular fractures is difficult. In osteoporotic bones use of anglestable implants is advocated. A more simple method is the modification of a straight plate into a hook plate.
Method: Out of the last plate hole a hook is created, that can be anchored in the small fragment. By excentric drilling in the other main fragment an axial compression of the fracture is achieved. If one single plate is not rigid enough, a second plate can be superimposed on the first one to strengthen the construct (e.g. on the olecranon).
Results: The said technique was performed on fractures of the distal humerus, on olecranon fractures, on fractures of the distal radius, subcapital fractures of the distal ulna and on metacarpal fractures. All fractures healed uneventfully, no secondary displacement and no infection was noted.

Conclusıon: The hookplate is a very reliable implant with the advantage, that it can be realized during surgery ''on table''. It is simple and it is cheap!

543 Antero-lateral Thigh (ALT) Free Flap in Children for Closing Defect on the Lower Extremity

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Introduction and objectıves: One of the most common causes of the lower extremity defect in adult is a road traffic accident. The most challenging issues is to close the defect on the 1/3 of lower extremity because local tissue is very limited and mostly damaged due to high energy injury. We investigated the difficulties of how we close the defect on one third of the lower extremity particularly in children, in our unit.
Method: In a year time, 7 patients under 6 years old admitted to our unit. All patients had Gustillo IIIB injury and the biggest size of the defect was 20 × 13 cm. One patient had 2 different lesions on the heel the other was on the anterior aspect of tibia. After radical debridement, the wound closed with ALT free flap with in first week of admission. 2 different defects on a lower extremity were closed with ALT and Vastus lateralis muscle free flap with a single pedicle.
Result: The biggest flap size was 22 × 13 cm. An average pedicule length was 6.3 cm and the diameter of the vessel was 1.2 cm The average operation time was 5 h 53 min. One flap had partial necrosis and healed secondarily. They had uneventful recovery and discharged on average 8 postoperative days.
Conclusıon: In children even less than 6 years age, one of the good and suitable options for closing the defect on the one third of the lower extremity is ALT as a free flap.

544 The Results of Treatment of Tibial Fractures with Expandable Intramedullary Nails

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Introductıon: The aim of this study to evaluate the results of tibial shaft fractures treated by expandable intramedullary nail (FixionTM, Disc-O Tech) in the light of related articles.
Materıal-Method: We evaluated 15 cases had tibia fractures. Two different diameter (8.5 and 10 mm) nails were employed in this study. We noted surgery time, fluoroscopy application time and union time for each case.
Results: All fractures healed in average 11.5 weeks (8–24) except 1 case. The case had sepsis early period of after surgery and all implants were removed. Average surgery time was 41 min (25–80).
Conclusıons: We believe that the expandable nails are suitable treatment devices for selected tibial fractures because of short surgery and fluoroscopy application time and allowing to early weight bearing.

545 Evaluation of the Life Activities of the High-risk, 75 Years and Older Patients who were Gone Under External Fixation for Pertrochanteric Fractures

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Purpose: To evaluate prospectively the life quality change of 75 years and older patients with American Society of Anesthesiologists (ASA) values 3 and over, who were gone under external fixation surgery for pertrochanteric fractures.
Materıals–methods: Thirty patients 75 years and older with pertrochanteric fractures, who were completed postoperative 6 months follow-up period were evaluated at the Bakırköy Dr. Sadi Konuk Educational and Research Hospital between March and May 2008. All the patients were ASA 3 and over. Twenty-one of the patients were female, nine of them were male. Mean age was 82 (75–92). All the patients were gone under external fixation surgery under general or regional anesthesia and were evaluated with Barthel Index of Activities of Daily Living (BAI) preoperatively and at sixth month postoperatively.
Results: All the fractures were healed completely. One patient had deep pin tract infection that was treated completely with antibiotics. Eight patients had superficial infection. Screw migration was detected in two patients. Twenty percent decrease was found between preoperative and postoperative BAI values.
Conclusıon: The external fixation surgery has the disadvantages of pin-tract infection, screw migration and undesirable cosmesis, but it is still an effective alternative surgical technique as it has the advantages of shorter surgery time, minimal hemorrhage, decreased cardiac risks and easy implant removal without general anesthesia. The decrease of BAI values was thought to be related with pertrochanteric fracture, additional systemic diseases and difficulty in after-treatment.

546 Complication and Failure of Spinal Instrumentation of Thoracolumbar Spine Fractures

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Purpose: Management of thoracolumbar spinal fractures is one of the most controversial areas in modern spinal surgery. Pedicle screws or other implant instrumentation have been widely used for spinal stabilisation following spinal injury. Pedicle screw use in spinal stabilisatin has increased. Our aims are to highlight the topic of implant failure.
Materials–Methods: Fourteen patients of unstable thoraco-lumbar fracture with or without neuro-deficit were treated by stabilisation with posterior pedicle screws enstrumentation. For the fracture classification system were used to Magerl/AO. The results were evaluated by neurological recovery (ASIA score), pain relief, VAS score and estimate of the implant failure.
Result: Of these patients, 10 patients were male and four were female, average age 41. The condition causes included motor-vehicle

accident in 4 patients, fall from height in 9 and working accident was 1. All of them received open reduction posterior internal fixation and posterior fusion, with an average follow-up period of 100 months. Patients had spinal fractures between the fourth thorasic and the fifth lumbar vertebral body (22 vertebra). According to the comprehensive classification, the 20 type A, 2 type B were identified preoperatively. The effect of implant failure was also evaluated. In the all patients broken pedicle screws were seen in 8 patients and a broken rod was seen 1 patient in the all patients. Implants were removed for 3 patients. VAS score was average 2.8. ASIA score was 1 patient C, 1 patient D and the others E.

Conclusıon: Back pain and function of these patients were all rated good. 8 patients with breakage of transpedicular screws and 1 patient was breakage of rod were encountered during follow-up, but there were no complaints.

547 Treating Stable Odontoid Fractures: the Philadelphia Collar vs. Halo Thoracic Vest

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Stable odontoid fractures can be treated with external immobilization using, e.g., a Philadelphia collar (PC) or a halo thoracic vest (HTV). It is important to delineate the capacity of both orthoses, Halo and Philly, for immobilization of the atlantoaxial complex (AAC), e.g., for their use in odontoid fracture care. In this in-vivo biomechanical comparison 20 volunteers (mean age = 30.9 ± 4.2) were subjected to flexion-extension radiographs immobilized in a modified HTV and a PC. Radiographs were analyzed for the segmental rotation angle of C1-2 in sagittal plane (SRA C1-2) and the absolute rotation angle of C2-7 (ARA C2-7). Separation angles (rSRA C1-2 and rARA C2-7) were calculated from flexion-extension views. Concerning restriction of subaxial sagittal plane motion, the HTV was more effective than the PC. The difference for the rARA C2-7 between the PC (mean 20.7°) and HTV (mean 9.2°) yielded significance ($p = 0.01$). But, concerning restriction of flexion-extension at the AAC, there was no statistical significant difference for the rSRA C1-2 between the PC and HTV ($p = 0.3$). PC (mean 1.3°) was superior to the HTV (mean 3.3°) in restricting sagittal motion at C1-2. In comparison to normals atlantoaxial motion was restricted by 88.5% (PC) and 70.8% (HTV). The current study demonstrated that there was no significant difference in restriction of sagittal motion at C1-2 between the PC and HTV. In light of the current biomechanical data and a selected review of literature it is concluded that the use of a PC is sufficient for the treatment of stable odontoid fractures.

548 Management of the Missed Fractures of the Talus

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Introductıon: Although most ankle injuries are associated ligamentous structures, some types of fractures mimic to ligamentous sprain and misdiagnosed as well. Most of the ankle sprains undergo radiographic examination and some of type fractures easily are missed even X-ray. The aim of this study is to evaluate the missed talar neck fractures and to emphasize the missed fractures.

Materıals-Methods: Misdiagnosed 8 cases were included in the study. Average age at the time of trauma was 28 (20–40). All cases evaluated prospectively. If the patients had ankle sprain and their initial X-rays show no evident of fracture, they were involved in the study. The diagnosis of the fracture was figured out by control X-ray, CT scan and MRI (except 1 case). All patients were evaluated by the scoring system of American Orthopaedic Foot and Ankle Society (AOFAS).

Results: All cases healed by closing methods. Average follow up time was 6 months (3-8). Average score of the AOFAS was 93 (80–100) at last visit.

Conclusıon: Although the missed fractures are rare cases, it is important to be diagnosed earlier. Because some of them include critical part of the skeletal system like talar neck fractures, they should be treated proper methods. Untreated talar neck fractures will cause early arthrosis of the ankle joint. An emergency service doctor and orthopaedic surgeon should be aware of the missed fractures

549 First Experience with Angular Stable Fixation of Proximal Humeral Fractures

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Introductıon and objectıves: Treatment of proximal humeral fractures remains controversial, because of complexity of this kind of fractures. The purpose of this study is to present our first experience using angular stable fixation in 3 and 4 part proximal humeral fractures

Method: In last 6 mounts we treated 19 patients with this method, 9 men and 10 women (mean age 62). Anterior approach was performed in every case (MIS technique in two cases), and every patients underwent to early rehabilitation. Periodical clinical and radiographic control were performed.

Results: Short term results are good with satisfaction of the patient, no pain and acceptable range of motion. We have 1 case of deep infection that need revision surgery and antibiotic treatment.

Conclusıon: The results are encouraging for the prosecution with this kind of treatment although longer follow up and comparison with other techniques are mandatory for more definitive conclusions

550 What is the Role of Primary Hip Hemiarthroplasty Over 70 years of Age?

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Purpose: We assessed importance of primary hip hemiarthroplasty in treatment algorithm. And we have evaluated patients treated with primary hip hemiarthroplasty for unstable intertrochanteric hip fractures according to morbidity rates.

Patients and Method: In our clinic between 1995 and 2006; we selected 75 patients treated with primary hip hemiarthroplasty for intertrochanteric femur fracture (ITFF). Mean follow-up was 44 months (20–82). Genders of patients were Female 43% and Male 32%. Numbers of affected hips were 45 right and 30 left. Patients were evaluated with Harris Hip Score.
Results: Harris Hip Score of patients; Excellent 4, Good 54, Fair 9 and Poor 8 results were obtained. Seventy-eight percent excellent to good results obtained primary hip hemiarthroplasty for unstable intertrochanteric femur fracture patients over 70 years of age.
Discussion: There are advantages of primary hip hemiarthroplasty over osteosynthesis for patient's population over 70 years of age such as; short surgery time, no radiation exposure and immediate weight bearing. Primary hip hemiarthroplasty can be an alternative treatment for unstable intertrochanteric fractures in elderly patients so as to achieve earlier mobilization. It is also current and effective treatment option for most elderly ITF fractures.

551 Neurologic Injury is Not a Valid Indicator for Cervical Spine Immobilization In Penetrating Cervical Trauma

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Introduction: Cervical spine immobilization (CSI) is recommended for patients with penetrating cervical trauma and any neurologic deficit but the validity of this indicator has never been examined. The working hypothesis for this study was neurologic deficits are not valid indicators for CSI in penetrating cervical trauma.
Methods: Retrospective chart analysis from the trauma registries of two American College of Surgeons, Level I Trauma centers. Patients were grouped according to neurologic injury type, the presence or absence of cervical spine fracture, and the presence or absence of major and minor vascular injury. Statistical significance was accepted for $p < 0.05$.
Results: 196 patients formed the study cohort. Peripheral nerve injuries were not associated with cervical spine fractures ($p = 0.42$) and occurred independent of spinal cord injuries ($p = 0.27$) and brain injury ($p = 0.99$). Cervical spinal cord injury was associated with cervical spine fractures ($p < 0.0001$; RR 20.56; 95% CI 8.44 – 26.47) but only two cervical spine injuries were unstable and both of these patients were completely neurologically devastated. Major vascular injury was associated with any neurologic injury ($p = 0.03$; RR 2.94; 95% CI 1.10–6.69) and brain injury ($p = 0.011$; RR 10.21; 95% CI 6.66–15.65) but was not associated with peripheral nerve injury ($p = 0.132$), cervical spinal cord injury ($p = 0.99$) or cervical spine fracture ($p = 0.99$).
Conclusions: Neurologic deficits are not valid indicators for CSI in penetrating cervical trauma but are associated with major vascular injury.

552 Inter-observer and Intra-observer Variability in Classsifying Pelvic Injuries. Is there a Role for a Simpler Classification?

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The terminology for pelvic fractures and its recent modifiers are confusion to the trainee to say the least. We surveyed 70 orthopaedic trainees in the latter part of their surgical rotations. The same set of radiographs were shown to all trainees and their classifications recorded. the same set of radiographs were shown to the trainees again after a period of 21 days. We found significant inter-observer variability (45%) and wide intra-observer variability (15%). Though trainees were adept at identifying basic fractures patterns and identifying individual column or lip/wall fractures the complex fracture patterns seems to generate different answers from the same observer at different times. The CT scan was the most effective tool identified for accuracy of the fractured fragments but the more complex assignments resulted in the trainees grouping them differently.

553 External Fixation of Femur as Minimal Invasive Surgery in Polytraumatized Patients

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Introduction and objectives: External fixation is generally reserved for severe open fractures and for initial stabilization of fractures in polytrauma patients.
Methods: Twenty three patients with 24 femoral shaft fractures were treated by Mitkovic external fixator. The series included 19 men and 4 women, mean age 35.9 years. All patients were victims of high-energy trauma: 16 traffic accidents, 3 falls from height and 4 firearm wounds. Fourteen patients had multiple injuries. One patient had bilateral femoral shaft fractures and three patients had another fracture in the lower extremity. Fourteen fractures were open. Sixteen fractures had comminution. In 10 cases with closed fracture conversion in internal fixation was done after patients' stabilization.
Results: Twenty-one fractures (87.5%) healed without complication including five fractures where external fixation was converted into internal one. The mean time to union was 6.5 (4–9) months. There were two pin-track infections, two deep infections, and only one nonunion. The femur length was equal to the healthy side in 19 cases, and was shorter by 1–2 cm in five cases. Mean active knee flexion was 90°. Knee flexion was more than 110° in 9 patients.
Conclusions: External fixation is a useful technique for the stabilization of severe open and close highly comminuted femoral shaft fractures. It is safe procedure to achieve temporary rigid stabilization of femur fracture in critical polytraumatized patients before delayed internal fixation (damage control orthopedics).

554 Appendiceal Diverticulitis: a Case Report

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Preoperative diagnosis of appendiceal diverticulitis is rare. The incidence of appendiceal diverticulitis ranges from 0.004 to 2.1%. 60% of the diverticulitis of colon cases appear above 70 years of age, and they are mostly in the left colon.
Case: A 73 year-old male, who had a 1-year history of episodic right lower quadrant abdominal pain was admitted to the surgical emergency department for worsening of his complaints. The physical examination was only notable for right lower quadrant abdominal tenderness. Laboratory findings was normal. On ultrasonography examination signs of acute appendicitis was noted. As the radiological findings did not match with the clinical status of the patient, he was followed up. Later, acute abdominal symptoms appeared, and the patient was admitted to the operating theatre. Two 1 cm long nodules were seen on the appendix preoperatively. Appendectomy was done. The patient was discharged on the first postoperative day. The histopatological examination revealed acute appendicitis signs and two 10 mm long diverticula one of which is inflamed in the middle and the other in the distal part of the specimen were reported.
Conclusıon: The most common cause of acute appendicitis in adult population is fecaloid. Lymphoid hyperplasia, carsinoid tumors, mucosel, parasites, fruit and vegetable seeds are other causes. Although appendiceal diverticulitis is rare, clinicians should be aware of its occurrence and tendency for appendiceal perforation.

555 Traumatic Posterior Cranial Fossa Hematomas

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Introduction and objective: Traumatic intracranial hematoma is the most common complication of the head injury requiring emergency intervention. As most of them are located supratentorially, they can be seen less frequently in the posterior fossa. This study aims to evaluates the clinical, radiological and surgical aspects of traumatic posterior fossa hematomas in patients who were treated at our center.
Methods: The records of 16 patients with of traumatic posterior fossa hematomas that had been treated at our center between 1998 and 2008 were reviewed.
Results: Of the 16 cases, 10 had cerebellar hematomas and 6 had epidural hematomas. Fall was the most common cause, followed by animal kick, assault and traffic accident. Diagnosis and management decisions were determined by cranial computed tomography scans. Surgical intervention was performed in 8 cases. The outcome was good in 13 patients. Three patients died who had low GCS at admission and additional cranial lesion.
Conclusions: Patients with occipital trauma should be evaluated immediately using cranial computed tomography scans. Early diagnosis of traumatic hematomas and prompt surgical intervention in those having mass effect provide good results.

556 Penetrating Stab Wound to the Brain Causing Combined Pareses of Oculomotor and Trochlear Nerves

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Introduction: Transcranial stab wounds made with a knife mostly produce a classic slot skull fracture and underlying tract hematoma, and often cause severe neurological deficits. An unusual case with combined pareses of oculomotor and trochlear nerves due to penetrating stab wound to the brain is presented.
Methods: A 14-year-old boy was admitted to our clinic after an altercation that resulted in the patient sustaining stub wound to his head.
Results: He was conscious. Neuro-ophthalmic examination showed that the left eye had limited adduction, supraduction, and infraduction, incomplete convergence and left sided ptosis with dilated pupil. An emergency computed tomographic scan of his brain was obtained, which revealed a left slot fracture at the squamous portion of the temporal bone of the anterior cranial fossa and a frontotemporal intracerebral stub tract hematoma. He underwent emergent surgery. Fractured bone pieces and lacerated brain tissue were removed. Neurological deficits remained unchanged at 12 months follow-up.
Conclusions: Cranial nerve injury related to the knife wound to the brain is very rare. The penetration site, depth of penetration and trajectory of the object are important in occurring of this injury. Prognosis seems to be poor in these cases.

557 Audit of Orthopaedic Trauma Coding: where are we Losing Out ?

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Aims and objectıves: To review the existing coding for orthopaedic trauma,
To ascertain accuracy of procedural codes,
To identify limitations, implement changes, close the loop and re-evaluate.
Study design: Complete audit cycle.
Materials and Methods: All orthopaedic trauma surgeries (244 cases) performed over one month (March 2006) were comprehensively analysed. The primary procedural accuracy of OPCS4.2, its limitations and loss of revenue due to missing codes (6 patients) were determined. Electronic discharge summaries were implemented to enhance efficiency. The audit loop was subsequently closed to evaluate implementation of these changes by re-auditing all trauma surgeries performed in the same month the following year i.e. March 2007 (303 cases) against OPCS4.3 codes.

Results: The primary procedural accuracy was 95.38% (11/238 coding errors) and omissions in 6 patients resulted in net loss of revenue of £13,700 for March 2006. Following the closure of audit loop in March 2007 after implementation of changes, the primary procedural accuracy was 98.95% (3/286 coding errors) and cumulative loss of revenue due to omissions in 17 patients was £46,750.
Discussion: Despite improvement in coding accuracy at the closure of audit loop, there were increased financial losses for trauma directorate. An in-depth analysis is being performed to identify lacunae (training/staffing issues) as the trauma workload rose by 24.2% in a year.
Conclusion: Accurate and ethical coding is challenging having impact on data quality, audit and research in addition to financial reimbursement. Literature emphasizes on legible documentation, liaison between coders & clinicians and education/training of healthcare professionals.

558 Lateral View Knee X-ray as a Screening Tool in Acute Knee Trauma

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Introduction: Large number of knee X-rays are done incidentally for patients presenting with knee trauma in accident and emergency. Using only one lateral view knee X-ray as a screening tool would reduce the cost by 67% as per A. Verma et al., an interesting proposition.
Method: We investigated the validity of lateral view knee X-rays alone as a screening tool for detecting fractures around the knee in acute knee trauma. 102 randomly picked X-rays were reviewed. The AP and lateral views were interpreted by a Consultant Radiologist and the findings used as Gold Standard for the study. The lateral views alone were independently interpreted on two different occasions by the (a) Radiographer (b) Emergency Nurse Practitioner Accident & Emergency (c) Middle Grade Doctor Accident and Emergency (d) Consultant Orthopaedic Surgeon.
Results: There was significant inter observer variation in sensitivity which ranged from 66 to 86% with the highest sensitivity being achieved by the radiographer. The specificity was generally high with a range from 84 to 97%. Though there was a high validity in the case of the radiographer the sensitivity for the other observers was low.
Conclusion: Though there could be a significant saving in terms of resources and unnecessary radiation by doing lateral views alone as opposed to the routine AP & lateral views as first line X-rays, we do not recommend using the lateral views alone as a safe screening tool in knee trauma because of high inter observer variation in sensitivity.

559 L-configuration Re-attachment of Distal Biceps Tendon Rupture

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Introduction: In distal biceps tendon ruptures, re-attachment to the radial tuberosity should ensure an adequate tendon to bone surface contact to achieve a sound repair and fast tendon to bone healing.
Method and Technique: We are describing a L-configuration re-attachment of distal biceps tendon rupture, using a single anterior transverse incision at the cubital fossa crease. Each pair of sutures from the most distal anchor is passed through the distal part of the tendon. One strand of each pair is passed in a zig zag fashion through the tendon whilst the other strand is simply passed straight through the tendon in a posterior to anterior direction. The four strands of the proximal anchor are passed so that they form two mattress sutures through the proximal part of the tendon. Tightening is then performed in a specific sequence with initially pulling on strand A and B to bring the tendon down to bone and then tightening these to the corresponding suture strand of their pair. The two pairs of sutures are then tied to each other. This second anchor tightening ensures that the tendon is brought down onto the bone in an L configuration increasing the contact surface area between tendon and bone.
Results: We have used this technique in 26 patients till now with excellent results and no re-ruptures.
Discussion: Our technique is simple to perform and provides a sound repair with a large surface area of contact between tendon and bone.

560 Knee Outcome Scores: Do We Get People Back to Normal?

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Background: There are many studies looking at postoperative knee outcome scores following various knee procedures. However there is lack of published literature looking at knee outcome scores in the normal population.
Method: 744 questionnaires were mailed to people in the 20–90 year age group, in the Stockport NHS Foundation Trust, UK. The questionnaire assessed six scoring systems: Lysholm & Oxford Knee scores, University of California Los Angeles (UCLA) & Tegner activity scales and Visual Analogue Scale (VAS) for pain and function.
Results: Out of a 66% (n = 494) response rate, 305 respondents (101 male, 204 female) were included in the study. We excluded people with previous hip, knee or back problems. In our study, the symptom scores that is Lysholm, Oxford and Visual analogue scale for pain and function did not show any significant decline with age. On the other hand, the scores measuring activity levels that is Tegner and UCLA scales declined significantly with increasing age. Our normal scores were far ahead of age-matched post operative scores following total knee replacement. There was no difference between males and females. The symptom scores declined with increase in medical problems.
Conclusion: Our age matched scores were superior to post operative total knee replacement (TKR) scores from the NJR. This furthered our motive to create a set of reference knee scores in the normal population which could be used by other studies to compare their results and help improve postoperative outcomes.

561 Surface Protein Characterization of Human Osteoblasts Derived from Iliac Crest and Adipose Tissue

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Mesenchymal stem cells (MSCs) are multipotent stromal cells that have extensive proliferative potential and the ability to undergo multilineage differentiation. Traditionally, osteogenic differentiation of mesenchymal stem cells has been studied in cells isolated from bone marrow and iliac crest. However, these harvest techniques are associated with several problems, including donor morbidity, pain, and limited amount of cells. Only a few years ago, adipose tissue has been identified as another source of mulitpotent MSCs, which are referred to as Adipose Derived Stem Cells (ADSCs). The aim of our study was to provide a comparative analysis of primary osteoblasts from the iliac crest and osteogenic differentiated MSCs from adipose tissue, using osteoblast-specific protein expression. In 21 patients the cells were differentiated into the osteoblast lineage using osteogenic medium (ADOBs). Primary osteoblasts were isolated from iliac crest specimens in 30 patients undergoing osteosynthesis with spongioplasty (female: 16, male: 14, mean age 54 ± 14.7). Phenotype marker expression of osteoblast-specific proteins osteocalcin, alkaline phosphase, type I collagen, and CBFA-1 (Runx-2) was analyzed up to 21 days following incubation using RT-PCR, western blot, and immunocytochemistry. Additionaly, the following surface proteins of ADSCs were analyzed: nucleostemin, CD34, CD105, CD 10, CD 13, CD 59, and CD 166. RT-PCR analysis revealed that the non-differentiated ADSCs contained different types of stromal cells with a large variety of CD marker expression. Surface protein expression (CD) did not differ significantly in cells isolated from either fat tissue or bone.

Author to editor: Saved by LookUs.

562 Treatment Strategy for Hepatic Injury in Our Classification of the Responsiveness to Fluid Resuscitation and a Simple and Practical Damage Control Surgery (DCS) Scoring System

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Background: At our department, classification of the responsiveness to fluid resuscitation and a simple and practical damage control surgery (DCS) scoring system have been used to determine the efficacy of the treatment strategy in trauma patients.
Cases and Methods: We examined 247 out of 289 hepatic injury patients, excluding cardiopulmonary arrest cases. The present study was undertaken to establish a valid strategy for the treatment of hepatic injury, and further improvement of the survival rate was evaluated based on the grater and equal of grade IV [Organ Injury Scale (OIS)] hepatic injury necessitating emergency room laparotomy.
Result: Interventional Radiology (IVR) treatment cases were all stable or responder patients and all survived with effective hemostasis. Transient responder or non responder patients that needed hemostasis were treated by emergency laparotomy, and all the cases that eventually expired needed DCS. The mean injury severity score (ISS) was 42.3 and the mean probability of survival (Ps) was 0.413, and hemostasis treatment was started within a mean of 39.1 min, yielding a survival rate of 42.9% in the cases with grater and equal grade IV (OIS) liver injury that needed emergency room laparotomy.
Conclusion: Our criteria for deciding the therapeutic strategy based on the response to the initial fluid resuscitation seemed to be useful from the viewpoint of hemostasis for liver injury. The key to securing quality regional trauma care is to designate a trauma care hospital as a trauma center and to transport severely injured patients to the center as rapidly as possible.
Author to editor: We show that our classification of the responsiveness to fluid resuscitation and a simple and practical damage control surgery (DCS) scoring system is very effective for liver injury strategy.

563 Pertrochanteric Hip Fractures Treated with a Proximal Femoral Nail (Gamma-nail)

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Fractures of the proximal femur are, more than ever, an important challenge in the field of traumatology. The Gamma-nail, a combination of advantages of the sliding screw with the intramedullary nail, represents an efficient technique in the management of these fractures. A series of 70 fractures of the proximal femur in which this nail was used is reported. The average age of patients was 81.5 years (range 50–97 years). 72.2% (51 patients) of the cases were female. The average duration of the operation recorded was 42 min. In all cases closed reduction was achieved. The mean healing time was 8.5 weeks in 97.1% of the cases. There were two cases of delayed consolidation but no pseudarthroses. Postoperative complications occurred in 12 cases (17.1%). One case of migration of the proximal screw was the most important complication. The most frequent complications (7 cases) were seromas and hematomas of the surgical wound, which resolved satisfactorily in all cases. Superficial infections (4 cases) also evolved favorably, once the appropriate antibiotic treatment had been instituted. No breakages or failures due to implant fatigue were seen. The patient's recovery after suffering the fracture and the operation was evaluated and the 80% (56 patients) recovered their previous walking ability. The overall mortality was 8.6% (6 patients) with 2 of the deaths occurring while in hospital.
In conclusion, this preliminary study has shown that Gamma-nail can be safely used by the average surgeon in the average hospital to treat a common and sometimes difficult fracture.

564 Ovarian Vein Suppurative Thrombophlebitis Complicating Cesarian Section

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A 27 years old Nigerian woman, at the end of the 2nd pregnancy, was submitted to a caesarean section for uterine atony. Post-operative thrombo-prophylaxis was given. From POD 3, fever, abdominal pain and increasing tenderness in the right lower quadrant with leucocytosis appeared. Ultrasonography showed only small amount of fluid in the Douglas pouch, while a contrast-enhanced CT and a RMN revealed a dishomogeneus cylindrical mass of 2.5 cm in diameter extending from the right parauterine space towards the duodenum, suggestive of thrombosis of the ovarian vein. Laparotomy followed: uterus, ovaries, appendix and bowels were normal. After mobilizing the right colon the ovarian pedicle appeared enlarged and firm; it was

dissected, starting from the vena cava, and completely excised preserving the adnexa. Post-operative course was uneventful. Histology confirmed a suppurative thrombophlebitis; the haematological study ruled out any coagulation abnormality. The patient completed a 6 months low-molecular-weight-heparin treatment.
Ovarian vein suppurative thrombophlebitis can seriously complicate a caesarean section, till to require a surgical treatment. The imaging is essential for a prompt diagnosis.

565 Camel Bite Injuries a Six-year Prospective Study of 33 Patients

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Purpose: To prospectively study the mechanism, distribution of injury, and outcome of patients hospitalized with camel bite injury.
Methodology: All patients admitted to Al-Ain Hospital with a camel bite were prospectively studied over 6 years (October 2001–October 2007). Mechanism of injury including behavior of the camel, distribution and severity of injury, patient's demography, and outcome were studied.
Results: All 33 patients were males having a median (range) age of 27 (10–58). Almost half of them were Pakistani. Twenty-five were camel caregivers while five were camel riders. Seven patients were raised up by the camel's mouth and thrown to the ground while the other patients were only bitten. Majority of the injuries were in the upper limb (21) followed by the head and neck (8). 10/21 upper limb injuries had associated fractures. Two patients who were bitten at the neck were admitted to the ICU. One of them died due to massive left-brain infarction and the other had complete quadriplegia due to spinal cord injury. The median hospital stay was 6 days. One patient died (3%).
Conclusıon: The behavior of the camel is occasionally unpredictable and the canine teeth of the camel, which are long, can cause severe penetrating trauma despite the small puncture on the skin. Care should be taken when handling the camel.
Author to editor: Dear colleague: This is the only prospective clinical study of camel bites in the literature that took us 6 years to collect. The data is very unique and is of great interest. Fikri Abu-Zidan

566 Acute Appendicitis Caused by Cytomegalovirus in an Immunocompromised Patient: a Case Report

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Gastrointestinal cytomegalavirus infections occurs predominantly in immunocompromised patients.Involvement of the gastrointestinal tract in acquired immunodeficiency syndrome (AIDS) patients is frequent. However the prevalence of cytomegalovirus appendicitis is exceedingly rare.
Case: A 44 year-old male infected with the human immunodeficiency virus, who had chronic abdominal pain with subsequent development of acute right lower quadrant tenderness was admitted to the surgical emergency department. His physical examination revealed no other finding than a mass in the right lower quadrant. His abdominal ultrasonography and abdominal CT revealed a plastron appendicitis. So he was hospitalized for medical treatment and discharged after 10 days of treatment. His control abdominal ultrasonography and CT at the second month showed that plastron appendicitis persisted, therefore the patient was rehospitalized. He was discharged after 10 days of medical treatment. After 3 months the patient experienced severe abdominal pain. Appendectomy was performed and histopathogic examination revealed a cytomegalovirus infection. The problems related to diagnose cytomegalovirus appendicitis and therapeutic management of cytomegalovirus infections are discussed.
Conclusion: Aggressive use of ultrasound and abdominal computed tomographic scanning, along with early surgical intervention, is recommended.

567 A Rare Reason of Acute Abdomen: Spontaneous Intramural Hematoma of Intestine

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Introduction: Spontaneous intramural hematoma of intestine due to anticoagulan therapy is an unusual reason for acute abdomen. The first symptom is usually severe abdominal pain, nausea and vomiting. The most useful radiographic methods is computed tomography. The treatment approach is conservative and surgical. We present four patients treated our clinics due to intramural hematom. Two patients are treated surgically and two patients are treated conservatively.
Material and method: We carried out four patients diagnosed and treated for intramural hematoma of small intestine between 2003 and 2008 years in Haydarpasa Numune Training and Research Hospital second surgery department. We examine in this patients age, sex, etiologcy, hematologic parameters, the treatment approach (conservative and surgery), hospitalization times.
Results: The mean age of the patients was 60.2 years (range 38-78). All patients were male. The etiological factor was warfarin treatment due to aort valve replacement in three patient and ischemic cerebral disease in one patient. Laboratuary parameters were elevated leukocyte counts in all patients. Two patients was treated by surgical treatment due to intestinal obstriction and ishemia Two patient was treated conservatively (nasogastric decompression and total parenteral nutrition). Median hospitalization time was 8.7 day (8–11).
Discussion: When patients using anticoagulan therapy applied to emergency unit with abdominal pain, Physicians must remember intramural hematoma as reason of acute abdomen. First choice is conservative treatment however cases of acute abdomen with intestinal obstriction and ischemia require surgical intervention.

568 Multiple Fractures in Two Consecutive Motorcycle Accidents in the Same Patient in One Year

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Introduction: Motorcycle accidents continue to be a source of severe injury. The joy and exhilaration of riding motorcycles brings with it the risk of morbidity and mortality associated with these accidents.
Case: It concerns a 47-year-old man that in 21/10/07 entered the emergency room after suffering a motorcycle accident. At the admission he had pain, swelling and deformity of the left knee. Radiographs showed tibial plateau fracture type VI of Schatzker. He was submitted to surgical treatment with open reduction and ostheosynthesis with LISS plate and was orientated to rehabilitation. Six months after, the fracture was healed in correct alignment, had normal gait, normal knee range of motion and returned to work.
Eight months after surgery he suffered another motorcycle accident with left leg trauma, radiographs showed a supracondylar femoral fracture type 33.A3 AO-ASIF and diaphyseal tibial fracture below the plate. He underwent surgical treatment with open reduction and osteosynthesis of the supracondilyan femoral fracture with LCP plate, extraction of the LISS plate and ostheosynthesis with diaphyseal LCP plate. Eleven weeks postoperatively, he was able to walk without crutches. Five months after had normal range of motion of the left limb and was working.
Conclusion: Tibial plateau fractures are serious injuries and stable fixation without compromising the soft-tissue envelope is often difficult but with the LISS plate we can achieve fixation of an associated metaphyseal/diaphyseal fracture component with minimal approach. Multiple consecutive fractures are an important source of limb deformity and impairment, which we could prevent in this case.

569 Compression Intramedullary Nailing for Humeral Diaphyseal Non-unions

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Introduction: The optimum management of non-united humeral diaphyseal fractures remains unclear. A number of implants are available utilising varying operative philosophies and balancing operative complication risks. We present two cases of humeral shaft non-union treated with an intramedullary compression nail, a technique which is previously unreported.
Cases: Case 1: A 23 year old male with a closed fracture of the humeral diaphysis (12-A3). Initial failed open reduction and internal fixation with an anterior placed 4.5 mm dynamic compression plate (DCP) was subsequently revised to a posterior 4.5 mm DCP plus bone graft 3 months later. One year post revision, the fracture had failed to unite and was referred to the senior author. He underwent a 2 stage reconstruction with the T2 Humeral Intramedullary nail in compression mode. At 6 month review the fracture had united and at 2 years postoperatively he had full range, pain free shoulder and elbow movement.
Case 2: A 90 year old female with a closed diaphyseal humerus fracture (12-A1) treated conservatively in a U slab and functional brace developed a mobile, painful non-union. She underwent the same procedure as above and at 6 months the fracture had united. She was pain free and had full range of elbow movement. Shoulder movement was restricted due to co-existing glenohumeral osteoarthritis.
Conclusion: Key tenets of fracture and non-union surgery include the ability to obtain stability and compression. This paper describes the first reported use of an intramedullary nail in compression mode for humeral diaphyseal non-union.

570 Finger Tip Amputations: Treatment with V–Y Plasty (Tranquilli–Leali)

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Fingertip amputations are the most common type of amputation injury in the upper extremity and they are important because of an often disproportionately long period of convalescence. Different surgical procedures are available for reconstruction, but none is absolutely satisfactory. Twenty-two cases (19 patients) of fingertip amputation have been treated by primary skin closure using the V–Y plasty (Tranquilli–Leali). There were 14 men and 5 women. The average age was 38.7 years. The procedure was carried out under regional anaesthesia using a tourniquet. All devitalized tissue was excised and the bone was smoothed. A triangular flap with a distal base was developed. The width of the base should be the same as the amputated edge of the nail or the nailbed, and the length should be a little longer than the width. The flap was mobilized and sutured to the nail or the nailbed. Finally the volar gap was closed. The average follow-up period was 18 months, ranging from 6 to 27 months. All of the flaps survived and achieved normal or adequate two-point discrimination. Two patients had some loss of distal interphalangeal joint extension and five patients had cold hypersensitivity. Rapid return to work was possible in most cases. The technique is simple and presents an excellent method for fingertip reconstruction in Allen type I, II and III injuries.

571 Anterior Bilateral Shoulder Dislocation after Convulsive Crisis – Case Report

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Bilateral anterior shoulder dislocation is rare, and his aetiology is via various traumatic insults, atraumatic occurrences, and through extreme muscular contractions like epilepsy. In epileptic seizures is more common to occur posterior bilateral dislocation. The aim of this work is to describe a rare case of anterior bilateral shoulder dislocation after a convulsive crisis. It concerns a case of a 35-year-old male, with alcoholism history, who entered the emergency room in 25/05/08 with a generalized tonic-clonic seizure. After, he had bilateral shoulder deformity and swelling. Radiographs demonstrated a bilateral anterior shoulder luxation and bilateral greater tuberosity fracture. The dislocation was reduced and both shoulders were immobilized. 1 month later, radiographs showed bilateral reduction maintenance and bilateral greater tuberosity fracture deviation. The patient had extremely restriction of active and passive ranges of motion in both shoulders: in the left had 5º of active external rotation and 60º of abduction; in the right 0º of active external rotation and 50º of abduction. At this moment surgical procedure was done with bilateral open reduction and osteosynthesis with ''phylus'' plate and was orientated to physical rehabilitation. At the 2 month follow up, he had significantly improved both shoulders range of motion, and returned to the normal daily activities and 2 months later returned to work. Displaced fractures of the greater tuber-

osities after shoulder dislocation may result in motion limitation and functional disability. Open reduction and stable fixation allows for early passive motion of the joint and early return to activities of daily living.

572 Minimally Invasive Plate Osteosinthesis with Dhs in the Treatment of Stable Pertrochanteric Fractures

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Introduction: Sliding-compression extramedullary devices (SCED) are the treatment of choice for stable pertrochanteric fractures (SPF). Patients who sustain such fractures are usually elderly and frail, therefore reduction of the surgical ht is mandatory. A reduction of the surgical time, blood loss and need for transfusions using SCED with a MIPO technique has been reported. We wanted to compare the results of the treatment of SPF with a DHS inserted through a standard or a MIPO approach in a consecutive series of patients with attention to the surgical time, drop of haemoglobin and transfusions units.
Material-Methods: Between January 2006 and January 2007 we treated forty patients for SPF. The patients received a 4 holes DHS plate and were randomly assigned to the Standard Group (SG) or MIPO Group (MG). In the SG a standard incision was used while in the MG the incision was reduced to a maximum of 6 cm. Differences in the surgical time, drop of haemoglobin and need of transfusion were registered.
Results: The mean surgical time and mean drop of haemoglobin in the MG were significantly lower than those of the SG. Also the need for transfusion was significantly reduced in the MG. No major complication occurred in both groups.
Conclusion: The treatment of SPF with a DHS through a MIPO technique has shown to be time saving in the OR, to limit the perioperative bleeding and to reduce the need for transfusions.

573 Minimally Invasive Drainage of Vertebral Osteomyelitis Secondary to Spine Trauma: a Case Report

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Introduction and objectives: Direct inoculation, hematogenous spread or underlying medical illness which can predispose a patient easily for osteomyelitis are the causes of a vertebral infection. This case report represents a vertebral osteomyelitis of a patient seen after spine trauma.
Case: An 11 year-old girl was admitted to our out-patient clinic with a history of progressive back pain. Her inflammatory markers were high, physical examination revealed only spinous tenderness to palpation and she had a spine trauma history when she was at nine. Radiological evaluation demonstrated lumbar 1 and 2 mild anterior compression, an incomplete intervertebral fusion and endplate irregularities with an intact spinal cord. Bilateral sequential transpedicular drainage from L1 vertebra was performed without any complication. She has a pain free course of 6 months with negative inflammatory markers.
Conclusions: The management of vertebral osteomyelitis is often challenging and in case of continuing pain and progressive kyphosis, surgical treatment is indicated. Beside aggressive surgical procedures, minimally invasive techniques can be an option for the treatment of such cases.

574 Percutaneous Osteosynthesis of Femoral Neck Fracture with Cannulated Screws – a New Modified Instrumentarium

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Introduction: In our institute the double canulated femoral neck screws are used for the treatment of inpacted and dislocated femoral neck fractures since 1990. There are two options for the treatment of those fractures: closed reduction and percutaneous osteosynthesis and arthroplasty. The advantages of osteosynthesis are limited surgical trauma, percutaneous surgical technique, combination of implants possible to increase stability, low cost of implants and instrument and preservation of femoral head. The disadvantages are difficult failure of the osteosynthesis and possibility of femoral head necrosis.
Material-Method: New modified instrumentarium were developed for percutaneous osteosynthesis of femoral neck fractures

1. Instead of standard screws with diameter of 8 mm using screws with diameter of 9.5 mm
2. Instead of 2,2 diameter cannulated tunnel using 3, 2 mm cannulated tunnel

Results: In use of this new modified method the time of surgery is shorter, the percutaneous surgical technique is simplified, the blooded lose is minimalizied, the surgery can be performed by two persons: the surgeon and the scrub nurse and few special instruments required.
Conclusion: Based on our results we recommend this modified minimal invasive percutaneous osteosynthesis in case of Garden III femoral neck fractures, in Garden IV one, especially immobile patients and patients with poor general conditions (ASA score IV).

575 The Predictors of Mortality in Hemodynamically Unstable Patient with Pelvic Fracture

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Introduction: Pelvic fracture is one of the serious skeletal injuries, resulting in substantial mortality. The large amount of kinetic energy necessary to fracture the bony pelvis often leads to concomitant thoracoabdominal injury. Pelvic fracture and combined injuries need effective initial resuscitation. However, it is hard to predict the mortality due to the complexity of multiple injuries. Therefore, the

purpose of this study was to determine the factors predicting mortality.
Methods: A retrospective study was performed on 174 cases of pelvic fracture who visited to Emergency Department from January 2003 to June 2008. Data were collected regarding demographic characteristics, mechanism of injury, injury severity score (ISS), Abbreviated Injury Score (AIS), Simplified Acute Physiologic Score II (SAPS II), transfusion requirements, fluid requirements, the finding of angiography, Hemoglobin, platelet, prothrombin time (PT), Fibrinogen, albumin, base deficit, lactate, antithrombin III, ICU stay and admission days. Pelvic fracture categories were derived by adapting the Young-Burgess classification.
Results: 140 cases of patients survive (Group I) and 34 cases of patients died (Group II). Blood pressure, Pulse rate, Hemoglobin, albumin, lactate, base deficit, PT, fibrinogen and Antithrombin III were significantly different between two groups. Transfusion, fluid requirements, ISS and SAPS II were significantly higher in the group II. Extravasation on the CT was more frequent finding in the group II. The ISS 1.194 ($p = 0.001$) and SAPS II 1.162 ($p = 0.007$) were statistically significant predictor of mortality.
Conclusıon: Predictors of mortality in pelvic fracture should be available in initial resuscitation. The ISS and SAPS II were the most important predictor in defining mortality.

576 Olecranon Osteotomy Provides Good Visiualization and Excellent Anatomic Reduction in Fractures of Distal Humerus

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Introduction and objectives: Distal intraarticular humeral type C fractures are difficult to manage through a standard surgical approach. We reviewed 27 patients with distal intraartricular type C2 or C3 fractures treated with open reduction and internal fixation. Fractures were managed by using an intraarticular, chevron-shaped olecranon osteotomy in all patients.
Methods: The mean age was 39.1 years. A straight posterior surgical incision was performed. A thin oscillating saw was used to begin the olecranon osteotomy. A small osteotome was then inserted and the osteotomy was completed through the subchondral bone. The posterior elbow capsule was incised. The olecranon fragment and the triceps muscle were reflected proximally to expose the distal humeral articular surface. Osteotomy fixations were performed with two intramedullary Kirschner wires and dorsal tension band in 23 patients. In four patients, an intramedullary screw and a tension band were used for fixation.
Results: At the final control, the Jupiter Classification system was used for the evaluation of the patients. Eighty one percent of the patients revealed good and excellent results at the long-term follow-up. None of the patients showed osteotomy nonunion. The most frequent complication was skin problem due to subcutaneous prominence of the implants.
Conclusions: The goals of treatment of distal humerus fractures are anatomic articular restoration and rigid fixation. Olecranon osteotomy provides good visualization for rigid fixation especially in Type C distal humeral articular fractures. This is a useful method for excellent anatomic reduction of the articular surface.

577 Too Much Care Could Hurt – Open Fracture Of Distal Tibia, Case Report

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Introduction and objectives: There is too many difficulty related to injury of distal tibia and the most is healing of soft tissues. Each surgeon has in his files patients with not ideal results of treatment. The analysis of those cases is key how to improve results. In following announcement the authors present one of those cases and results of overmuch vacillation in indication of conversion external fixation into internal.
Methods: 31 years old man with open fracture of distal tibia II–III grade 43-C3. There was made debridement, ex-fix and ChronOS primary. Following with lateral fasciotomy and closing soft tissues' defect. But there was wound's secretion couple days later, solved by protection by available muscular flap. Seven weeks later because of infection surgery came with healing of soft tissues in the end. We planed to conversion to LCP plate, spongioplasty after 16 weeks because of X-ray signs of bone defect and slow healing. After taking away ex-fix with signs of clinical resistance and anxiety from infection kept without plate. We have noted warping of media side and final position in 25° angular.
Results: We evaluated following mistakes.

1. Using ChronOS primary
2. Closing defect of soft tissues primary-seems better early cover by flap
3. Vacillation and anxiety in indication of conversion

Conclusions: There could be some steps during primary treatment for discussion. But real mistake was vacillation and delay of reosteosynthesis and spongioplasty even it was cause by risk for infection and possible failure of flap. Our case demonstrate that sometimes too much care could be hurtful.

578 Injuries Related to Feast of Sacrifice

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Introductıon: The population who applied to the public emergency services due to the injuries related to butchering the sacrificial animals during the feast of sacrifice were evaluated.
Materıals-Method: Eighty-nine patients who admitted to the emergency services in Kirikkale during the feast of sacrifice in 2008 were evaluated according to age, sex, application day and time, state of experience, type and mechanism of injury and medical treatment.
Results: The age average was 43 ± 13 and 80% of them were male. Eighty-eight percent of the patients admitted in the first day. Seventy percent of the injuries were penetrating injuries and 30% of them were blunt. The average time passed after the trauma was 120 min. Almost half of the cases were wounded with a knife, 18% were wounded unintentionally by the others and 36% of the cases were due to hit of animals. Fifty-seven percent of the patients had butchering experience

before. Ninety-one percent of the cases were hand injuries. Thirty percent of the cases had fractures. Nine percent of all cases had tendon injury, 55% of the cases were treated primarily skin suturation.
Conclusıon: The injuries related to butchering of the sacrificial animals sometimes can be serious. In extremity injuries, the number of tendon cuts and bone fractures can not be underestimated. Both equipments and medical staff support for the injured people should be provided and preliminary arrangements should be done during the feast of sacrifice. Every butchering job in this period should be given to professionals.

579 MRI Guided Kypho- and Vertebroplasty on a Spine Model

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Purpose: Open highfield MRI allows fast high resoluting multiplanar viewing of bone and the surrounding soft tissues in spine and provide enough space for the surgeon and the patient. For interventions in spinal trauma, such as kypho- and vertebroplasty, we developed a signal inducing bone cement based on contrast agent (CA), saline solution and polymethylmethacrylate (PMMA). On the purpose of developing MRI guided musculoskeletal interventions in spine, we tested the procedure on a human cadaveric spine model.
Materials/methods: We injected bone cement, made of 12 g PMMA (BonOs, aap Biomaterials, Germany), 3 ml saline solution 0.9% and 10 µl gadoterate meglumine (Dotarem, Lab. Guerbet, France), through MRI compatible needles (Somatex, Germnay) in cadaveric vertebral bodies (n = 20). Therefore we embedded lumbar spines in a box filled with agar (Wirogel, Germany). A defect was created in ten vertebral bodies by introducing a kyphon balloon (Kyphon, USA) from anteriorly before testing, to simulate kyphoplasty. We scanned a fast T1 W TSE pulse sequence for intervention and a T1 W TSE standard sequence for diagnostics. All scans were performed in a 1.0 Tesla open Panorama MRI System (Philips Medical Systems, The Netherlands) using a surface coil.
Results: The transpedicular MRI guided function of the vertebral bodies was practicable; the needle and the pedicle could be identified sufficently. The bone cement provide a clear signal for injection. Positioning of the surgeon is troublesome but feasible.
Conclusion: Complications, associated with conventional kypho- and vertebroplasty, could be prevented by using the MRI and make spinal interventions safer.

580 Biomechanical Evaluation of a Biocement-augmented vs. Non-augmented Gamma-nail Screw in the Osteoporotic Model of the Femoral Head

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Introduction: Osteoporotic fractures of the trochanteric area are often treated with a gamma-nail or similar implants utilizing a screw applied into the femoral head. One of the main problems of these techniques is the cut out in the femoral head. We biomechanically evaluated a novel technique of cement augmentation of the bed of the screw in a standardised osteoporotic bone model and its capability to reduce the cut out rate.
Material and methods: Utilizing a polyurethane-foam osteoporotic model that has been previously described (specific gravity 0.192 g/cm^3), a biomechanical testing of a neck of femur screw (TGN, STRYKER, Duisburg, Germany) was performed. The screw was implanted according to manufacturers instruction, the migration characteristics were then biomechanically tested (Zwick testing machine) with a static stepwise load increase (50 N). First these tests were performed without, in a second series with the augmentation of a fast hardening biopolymer (Corthoss, Orthovita, USA). Each series was repeated five times. The transfer from a stable to an unstable condition was biomechanically determined.
Results: On average the applied load at the moment of failure with critical cut out was 1431 N for the non-augmented screws. With augmentation, the average load was 1,987 N, the difference was statistically significant.
Discussion: It appears in biomechanical testing that augmentation of the femoral head can improve the load bearing capabilities and thereby possibly reduce the rate of cut-out failure in osteoporotic bone. We proceed now with further biomechanical testing, grant of the local ethics committee for human testing has been applied for.

581 Do Cartoons Encourage Child to Fly? a New Ethiology Of Pediatric Fractures: Report of Two Cases

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Introductions and objectıves: The aim of this study was to examine the relationship between childs' favourite cartoon stars who can fly and falling down from a high place in two cases.
Methods: In this paper we presented two similar cases who were seen with a history of falling down from a high place. The first case was a 4-year old girl who fell down from the third floor of their apartment. On her examination it was learned that she wanted to fly like her favourite magical cartoon star girls. The second case was a 5-year old boy who fell down from the second floor. While falling down he was screaming to his friends that he was flying.
Results: On the physical examination of the first case, deformity and crepitation in right femur were found. X-rays showed right femur distal epiphysis Salter Harris type IV fracture. She was hospitalized due to the pneumothrax in pediatric surgery intensive care unit. The procedure of closed reduction and fixation with multiple kirschner wires was performed under general anestesia. Closed body fracture in the left femur was found in case II. Treatment of this fracture was performed with closed reduction and hip-spina cast. Although pediatric physicologic examination was normal in case II, behavioural disorder was found in case I.
Conclusions: Reports about the encouraging effect of the movies on smoking habits of adults are frequent. Magical and flying cartoon stars can be encouraging for children about flying and fractures as in our cases can occur.

582 Artery Rupture and Compartment Syndrome after Joint Dislocation

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Objective: Dislocations of major joints are very common injuries. Frequently, persistent neurological deficits after reduction are observed. Accompanying vascular impairment with concomitant initial compartment syndrome is rare and hazardous complications.
Methods: We describe a series of three blunt trauma cases with dislocation of the shoulder, the knee and the elbow with arterial disruption observed during 1 year.
Results: The first case was a 57 year old patient. He sustained a bike accident with dislocation of his right shoulder. Clinical examination showed increased muscle compartment pressure (50 mmHg) and angio-CT presented a complete rupture of the axillary artery. The second case was a 38 year old patient who got stuck with his legs in deep snow and fell to the front. He sustained a knee dislocation with complete rupture of the popliteal artery and compartment syndrome of his lower leg. The third case was a 19 year old patient. The patient fell while snowboarding on his left arm. He suffered an open elbow dislocation with absence of distal pulsation due to a ruptured brachial artery. In all cases arterial reconstruction was successful, in one case, a direct anastomosis could be performed, were as in the other cases venous grafting was necessary. Immediate compartment release was performed in the two cases of concomitant compartment syndrome.
Conclusions: Surgeons and all emergency staff should be aware not only of neurological deficit after joint dislocation, but also of the rare concomitant vascular injuries. Immediate clinical diagnosis, followed by surgical exploration and revascularization is crucial to minimize long term damage.

583 Volar Fixed-angle Plating of Distal Radius Fractures: How Many Screws are Necessary in the Distal Fragment?

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Introduction: The purpose of this study was to compare the biomechanical properties of different possibilities of screw placement in multidirectional palmar fixed-angle plate in distal radius osteotomy cadaver model under loading conditions.
Methods: An extra-articular fracture was created in 16 pairs of fresh frozen human cadaver radii. The 32 specimens were randomized into four groups. All radii were plated with a volar fixed-angle plate. There were 4 different possibilities of screw placement in the distal fragment:

Group a: 4 screws were used in the distal row of the plate.
Group b: 4 screws were used alternately in the distal and proximal row.
Group c: 3 screws were used in the proximal row.
Group d: 7 screws were used filling all screws holes in the distal and proximal row of the plate.

The proximal fragment was fixed with 3 screws each. The specimens were loaded with 80 N under dorsal and volar bending and with 250 N axial loading.
Results: Group d had the highest stiffness of 429 N/mm under axial compression and was statistically significant stiffer than the other groups. Group b had a stiffness of 208 N/mm followed by group a with 177 N/mm. Group c showed only a stiffness of 83 N/mm. There were no statistically significant differences under dorsal and volar bending.
Conclusions: Occupying all screw holes in the distal fragment offered the highest stability. Using only the proximal row with 3 screws showed an unstable situation. It is therefore recommended to use at least 4 screws in the distal fragment.

584 Minimal Invasive Acut Screw Fixation in the Pelvic Fracture Treatment

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Introduction: Displaced fractures of the pelvic ring represents challenge for the trauma surgeon.
Patients: From January 1999 to December 2008, the treatment was given to 184 patients with pelvic ring B and C type fracture and dislocation.
Surgical technique: All of the 184 patients with a posterior pelvic fracture or fracture dislocation underwent screw fixation with fluoroscopy with 8.0-mm, or 9.0 mm cannulated screws, placed in a transiliosacral position in the vertebral body of SI, and S II. Among these patient, 95 fixed with percutaneous screw in the anterior pelvic ring fracture too.
Results: The average operating time was 25 min, the average screening time 2,86 min. Iatrogenic nerve damage was not found. All fractures healed within 3 months. 39/18, 48% of the patients had residual pain, which were permanent or intermittent. Unfortunately we have lost 19 patients. The Majeed functional scoring was applied. In conclusion we could say that 81% of our patients were in the excellent and good category.
Conclusions: The technique of percutaneous cannulated screws internal fixation for treating the posterior and anterior portion of the pelvis has the advantages of small trauma, less bleeding stiff fixation, which is an ideal and minimally invasive technique.

585 Treatment of Bilateral Periprosthetic Fractures After Hip Arthroplasties

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1. We evaluated our results of surgical treatment of 25 periprosthetic femur fractures after THR. 2.In the last 5 years we treated 27 periprosthetic femur fractures. According to the Johannson classification the fractures were distributed as 4 type I, 16 type II, and 7 type III. We have been operated 25 cases, 10 with plates, and 15 with plates combined with wire or cable cerclages. 3. Case: A 82 year-old woman

was operated on with THR by reason of arthritis 4 years before on the right, and by reason of femoral neck fracture 2 years before on the left side. She fell in a nursing home, and sustained bilateral periprosthetic fractures. After careful preparation and stabilization of her condition she has been operated on 6 days after the trauma. We applied angle stable plates and cable cerclage system simultaneously on both side. She has got intra et postoperative autologous blood transfusion. 4.Simultaneous stable osteosynthesis can be applied in seldom occasion after correct stabilisation of the patient. This allows early mobilisation and can reduce the complication rate

586 Do Scaphoid Fractures Affect Outcome of Perilunate Dislocations?

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Perilunate dislocations are the most common type of carpal dislocation. They can be produced by high-energy injuries. The population primarily at risk is male young adults. In perilunate dislocations, the proximal articular surface of the lunate retains contact with the distal radius. The dorsal-perilunate/volar-lunate dislocation is more common. We performed a retrospective study of perilunate dislocations from 2006 to 2008. A total of 5 were reviewed. Mean age of the patients was 28.6 (range 18–48). All the patients were male. The trauma mechanism was fall from height in 3 and motor vehicle accident in 2. All the dislocations were dorsal-perilunate/volar-lunate dislocations. All the dislocations were together with ipsilateral scaphoid fractures. All were closed injuries and all were reduced by closed reduction maneuvers. Percutaneous pinning was applied for the dislocation and scaphoid fractures. Mean follow-up time was 11 months (range 6–18 months). When compared with the non-injured wrist, there was limited range of movement in only one patient. No limitation of range of motion in the other patients could be obtained. The patients did not have pain and instability. Radiologically no arthrosis of the wrist could be obtained but in all patients there was scaphoid pseudoarthrosis. Functional range of motion of the wrist after a perilunate dislocation is independent of the concomitant scaphoid fractures.

587 Infected Nonunion of Both Distal Tibias after a High Energy Trauma – a Case Report

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Infective complications of tibia fractures result in nonunion, bone defects and soft tissue envelope impairment. Several methods of treatment have been described to deal with bone defect including callus distraction, fibula transfer, muscle flap and bone grafting. There are many possibilities to encourage bone healing; bone morphogenic proteins, platelet rich plasma, electrical, ultrasound or shockwave stimulation and hyperbaric oxygen therapy. A patient with both tibias infected nonunion is presented. High energy trauma primarily and inadequate debridement secondarily were probably the cause of the healing complications.
A middle-age man was injured in a gas explosion and suffered comminuted closed fractures of both distal tibias. After an immediate external fixation we operated him on the 28th day after the injury, anatomical reduction and internal fixation on both sides was done. An infection developed after 3 weeks. Ankle joint arthrodesis was necessary on one side and implant removal, repetitive debridement with bone grafting on the other. We could not cure the infection and the fracture did not heal. After 2 years, 7 operations, 277 days of ciprofloxacin, 60 days of gentamicin, 57 days of vancomycin, 40 days of implanted gentamicin antibiotic beds and the use of cultivated autogenous steam cells clinically evident nonunion was still present. Surgery was performed again, a resection of 9 cm of bone and callus distraction with an unilateral frame.
Despite a fast progress in knowledge and improvement of methods, a radical debridement, preservation or reconstruction of soft tissue coverage, systemic and local antibiotic therapy and appropriate stabilization is still a keystone in infected nonunion treatment.

588 Distribution of The Diagnosis in Patients who Underwent an Orthopaedic Urgent Intervention in the Operating Room

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Introduction and objectıves: In this study, we aimed to investigate the distribution of the diagnosis in patients who underwent urgent surgical intervention in the operating room.
Methods: Distribution of the diagnosis in patients who underwent an orthopaedic urgent intervention in the year 2008 are evaluated retrospectively from the medical records.
Results: 18 patients with orthopaedic complaints [17 male, 1 female; mean age 28.8 (3–56) years] were operated on urgently in the year 2008. 10 patients (7 shoulder, 2 hip and 1 lisfranc dislocations) had traumatic acute joint dislocation in which closed reduction was unsuccessful without general anestesia, one had supracondylar humeral fracture, one had distal femoral epiphyseal type II fracture, one had isolated radial shaft fracture with neurovascular injury, one had T12 spinal fracture dislocation with paraplegia, one had type III acromiaclavicular ligament rupture, one had quadriceps muscle laceration due to knife wound, one had tendo calcaneus rupture and one had patellar tendon rupture with medial meniscal injury due to knife injury. The mean time from admission to operation was found 4.5 h (range 1–6).
Conclusıon: It was concluded that the closed reduction of joint dislocations under general anestesia were the major group in orthopaedic urgent intervention.

589 Why Ankle Should be Reduced Urgently?

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Fracture dislocation of ankle is common orthopaedic emergency. It is paramount that to avoid soft tissue damage, the ankle is reduced as soon as possible. Despite all efforts ankle dislocations could lead to significant blister formation. We reviewed a case series in which ankle joint was reduced with external fixator until skin healing

occurred. 8 patients were admitted to worcester acute hospital. The skin around ankle was found significantly bruised and blistered and the ankle for put in external fixator. There was a delay of 7 days to 23 days before ankle joint was fixed with open reduction and internal fixation. All fracture headed eventually. There were no infections. Ankle stiffness was primary concern in first 3 months after injury. This improved slowly over period of 6 months. Ankle fracture requiring reduction with significant soft tissue injury should be dealt with external fixator. The ORIF could be performed once skin blisters have disappeared.

590 Which One to Choose? Bonesetter or Orthopaedist: a Child Case Report

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Some people who live in some regions of our Country trust in bonesetter's skills more than these ones of professional orthopaedist in the hospitals. The fact that some bonesetter's particular skills to cure the non-operative back pain seems to make them credible on closed reduction too. In this case report, right humerus proximal body fractures due to falling were discussed. The case was 9-year-old male. In the treatment of this case, velpau bandage, closed reduction and plaster cast-splint has been applied after that he was called to the clinic control, but he did not come to control. The parents of the case were aware of the fact he cannot raise enough the right upper extremity and he was taken along to the hospital. From his anamnesis, it has been learnt that the bonesetter has removed the cast-splint and, tried to perform closed reduction. Actual physical examination showed that there was an arm pain, crepitation and deformity. A diagnose has been made: there was an union right humerus proximal body fractures, so he has to be hospitalised. Under general anaesthesia, closed reduction and bandage Velpeau were applied. On the 3rd day of the hospitalisation, the case was externed and was advised to come for a polyclinic control. Because of the importance of epiphysis lines of bones and of other complications from the upper extremities fractures, the treatments have to be performed by the orthopaedists or in accordance with them. About this medical issue, families should be made conscious by healthy authorities.

591 An Unusual Foreign Body in the Spinal Canal of Sacrum: a Case Report

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Introduction and objectıves: Metal objects, wounds from nails, sharp broken objects such as nail or needles can cause foreign bodies in the extremities. We represent an interesting case of a foreign body at a manual worker.
Case: A 23-year-old male patient was admitted to the emergency department with a complaint of visible sharp metal object and back pain. The terminal part of the object was seen at the wound which is nearly 4 cm below the posterior superior iliac line. His neurological examination was normal. After radiological assessment, the object was removed from the wound without complication and the wound was closed.
Conclusıon: The physician must be alert for potential risks of foreign bodies. With an attentive history and careful physical and radiological examination, foreign bodies can be easily detected. Visible ones, organic materials or the bodies which matches to the removal indications such as intraarticular foreign bodies, foreign bodies that cause infection, foreign bodies near tendons, vessels and nerves must be removed.

592 Early Results of Treatment of Acetabulum Fractures

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Introduction and Objectıves: Generally, acetabulum fractures occur in the setting of high-velocity trauma. The position of the femoral head determines the fracture type at the time of injury. This retrospective study evaluates the clinical outcome of acetabulum fractures which were treated by open reduction and internal fixation.
Methods: Between April 2004 and June 2008, 23 patients with acetabulum fractures were managed with surgical treatment and assessed. There were 3 women and 20 men. The mean age was 39.7 years (range 19–55 years) and mean follow-up period was 23 months (range 9–56 months). Posterior Kocher–Langenbeck approach was used at 21 patients and ilioinguinal approach was used at two patients.
Results: There were 10 both column, 6 posterior column with posterior wall, 4 transverse with posterior wall and 3 posterior wall fractures. Anatomic reduction was obtained at 18 patients and adequate reduction at 5 patients according to Matta criterias. Harris scoring system revealed excellent at 13, good at 4, moderate at 2 and bad at 4 patients. Over 70% of these patients had satisfactory function. There were any pulmonary embolism, deep infection or nonunion detected. One of four patients whom had developed osteoarthritis, managed with total arthroplasty. Postoperative sciatic nerve injury was developed at one patient.
Conclusıon: Secondary arthrosis, nonanatomic reduction, unstable fixation and nerve injuries were associated with poor results. Our clinical experience for acetabulum fractures were similar to that reported previously at the literature with over 70% of satisfactory results

593 Trauma-related Amputations at Emergency Department: an Epidemiologic Study

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Objectıve: The aim of the study is to establish that at what age trauma-related extremity amputations are performed more often, education level and occupation group, and to discuss the factors affecting trauma, anatomic zones affected more frequently and its results.

Methods: The cases who were admitted to our emergency department between August 2006 and2008 and were exposed to traumatic extremity amputation were studied. The medical records such as age, sex, education level, occupation, the way trauma occurred, the affected anatomic zones, performed interventions and hospitalization duration parameters were evaluated.
Results: The data of 309 subjects were evaluated in this study. Mean age was 29, the rate of female/male was 1/4.5. There was a reverse correlation between the education level and occurrence prevalence. 48.12% of the cases were laborers, 30.45% various free self employed and 12.40% were farmers. According to their occurrences, industrial accidents 65.69%, pinching finger in the doorway 17.15% and home accidents 8.73% formed the first three rank. Hand finger amputation was 93.85%, toe amputation 3.24% and others were 2.91%. While 209 cases were treated at the emergency service and discharged, 93 cases were referred to related clinics. Five cases were referred to other centers and two subjects willingly left our clinic. The mean length of stay was 3.8 days.
Conclusıons: Traumatic amputation concerns particularly the young and the people in active work life. Since the majority of the cases have hand injuries, they are striking because they cause workforce lose in addition to cosmetic and functional defects.

594 The Distal Radius Fractures Management – Synthes LCP 3.5 mm vs 2.4 mm Plates

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Introduction: Distal radius fractures are one of the most common injuries regardless of age group. Due to their localization they pose a serious threat to the fine wrist movements. For most of the patients the perfect functional result is of a vital importance. Open reduction and stable osteosynthesis may help to produces desired outcome.
Methods: We have compared 15 distal radius radius fractures treated with open reduction and stabilization with 3.5 mm Synthes LCP and 15 treated with Synthes 2,4 mm LCP. We have compared the functional results, neurological damage and patient comfort with questionare form. Measurements from X- rays were also compared. We have included 30 patients of age between 24 and 68 years, with distal radius fracture. 18 of them with intraarticular fracture.
Results: Intraarticular fractures of distal radius treated with Synthes 2.4 mm LCP show better functional results compared to Synthes 3.5 mm LCP. There is no relevant difference depending on used material in extraarticular fractures.
Conclusıons: We recommend the use of Synthes 2.4 LCP for intraarticula distal radius fractures for its greater diversity and abillity to stabilize even a small fragments.

595 Partial Rupture of the Quadriceps Muscle in a Child After Intramuscular Injection

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Introduction and objectives: Quadriceps muscle tears are usually seen in middle-aged and older people. Particularly people with chronic diseases (such as diabetes mellitus, renal failure and gout) are prone to develop quadriceps muscle ruptures. We present a case of partial rupture of the quadriceps muscle in a 4-year-old girl after intramuscular injections. We thought that this patient could be the youngest patient reported with a quadriceps muscle rupture.
Methods: Patient presented to our clinic with left knee pain, limitation in knee flexion and a localized palpable swelling at the anterolateral side of thigh. There was no blunt trauma but it happened while she jumping on the sofa. In her detailed history we learnt that she had a serious upper tract respiratory infection a week ago and used some parenteral antibiotics (twice a day, intramuscular Clindamycine for 7 days).
Results: Plain radiographies were normal. MRI showed a partial tear of the vastus lateralis muscle matching with the injection sites. The patient was placed in a long leg half-cast which was maintained for 3 weeks. She treated with conservative treatment successfully.
Conclusions: MR imaging is useful to diagnose and differentiate in this pathology. Multiple intramuscular injections may contribute to damage muscles and make them prone to tears with muscle contractions. Quadriceps muscle ruptures in children can be treated successfully with conservative treatment.

596 Transabdominal Extraperitoneal Approach to a Lumbar Vertebra Fracture

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Twenty year old female attempted suicide by jumping from a four story high building, resulting in multiple fractures of the limbs and a complex fracture of the body of the fourth lumbar vertebra (L4) resulting in paralysis of the inferior limbs. The L4 fracture was treated by a Neurosurgeon with the extraction of the body of the vertebra, insertion of a cage device and arthrodeses of the third and fifth vertebras using a metal plate and screws, thereby stabilizing the affected segment and decompressing the medullar channel. The approach was achieved by a General Surgeon using the technique of Localio, that consists in a paramedian incision of the abdomen and the dissection of the retroperitoneal space without entering the abdominal cavity, dissecting and isolating the left ureter and the main vascular structures (iliac vessels and the left iliolumbar vein) in order to allow a good exposure of the three vertebra bodies involved. The patient recovered the complete function and control over the limbs, resulting no neurological sequelae from the fracture. It is of major importance that this procedure be performed by a multidisciplinary team of surgeons, involving a Neurosurgeon and a General Surgeon, in this way achieving a better result and a lower risk of complications.

597 Resorbable Implants – Suitable Alternative

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Introduction and objectives: Surgical treatment of fractures by using resorbable implants is not too expanded alternative to classical steel or titanium implants. Indication for using are intraarticular and periarticular fractures at first of all. The most advantage is no necessary of implants extraction. Another one is propagation of load callus during the degradation of material. Possibility of making profitable CT and NMR is indispensable.In this paper author presents experiences with using of resorbable screws.
Methods: At our department there are resorbable cortical screws 2.7, 3.5 and 4.5 mm Bionx made from polyamide polymer with minimal stronghold for 20 weeks and total absorption after 4 years. This screws are determinated for cancellous bones in periarticular areas. We are using them in cases of fracture posterior wall of acetabulum, distal humeral intraarticular fractures, radial head. It can be used for treatment children's fractures too. The follow up is same like in ''classical'' osteosynthesis.
Results: There were no infection's complications, no malfunction screws in our group of patients. The postoperative and ambulatory treatment including physiotherapy was same like in group with classical osteosynthesis. The only one failure was during surgery – we have wraped screw four times because of insufficient pre-drilling and using too much power during insertion.
Conclusions: We could recommend resorbable screws as suitable alternative in some type of surgical treatment intraarticular fractures at most. The indication have to be well look over and way of using has to be well understand as well as careful manipulation during surgery. The benefits are no metal material, no extraction in future and profitable CT and NMR.

THORACIC TRAUMA

598 Heart Valve Lesions in Blunt Cardiac Trauma – Mechanism, Diagnosis and Treatment

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Because of the variation in diagnostic criteria, cardiac involvement in blunt chest trauma is estimated at approximately 15%. In contrast to cardiac contusion which is often difficult to validate, traumatic valvular lesions are usually associated with some degree of hemodynamic impairment. Patients with positive findings on clinical examination, ECG, CXR and troponine should be screened for valvular lesions by transthoracic echocardiography. Blunt injury to cardiac valves can lead to progressive ventricular failure often requiring surgical management. Patients with structural damage to the left sided heart valves usually require immediate surgical repair, while right sided valvular lesions can be managed in a delayed fashion. The management is based on type of structural injury and hemodynamic compromise. Valvular reconstruction is usually attempted, if possible. The paper outlines historical perspective, mechanisms of injury as well as our experience with diagnosis and treatment of traumatic valvular lesions. Two case reports are presented. One patient had a traumatic mitral chords rupture and the other had a tricuspid papillary muscle rupture. Both cases were diagnosed immediately and surgically corrected. The ruptured mitral valve was urgently replaced. The tricuspid valve was repaired by delayed surgery.

599 Factors Affecting Mortality in Chest Trauma Patients in Al-Ain City, United Arab Emirates

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Objectives: To study the factors affecting mortality of hospitalized patients admitted with chest trauma in Al-Ain city.
Methods: Data of Al-Ain Hospital Trauma Registry were prospectively collected over a period of 3 years (2003–2006). All patients with chest trauma were studied. Univariate analysis was used to compare patients who died and those who survived. Significant factors were then entered into a backward stepwise likelihood ratio logistic regression.
Results: Out of 2,573 patients of the registry, 477 patients (18.5%) had chest trauma with a mean (SD) age of 35.2 (14.6) years. 428 (90%) were males 87. 304 (63.7%) got injured in the street or highway, 90 (18.9%) at work place, and 45 (9.4%) at home. The main mechanism of injury was road traffic collision in 315 (66%) fall from height in 80 (16.8%). 88 (18.4%) were admitted to ICU. The median (range) ISS was 5 (1–43). 175 (36.7) of patients got isolated chest injury, 130 (27.3%) had head injury, 119 (25%) lower limb injury, 118 (24.7%) upper limb injury. Overall mortality rate was 7.2%. Mortality was significantly affected by GCS ($p < 0.0001$), ISS ($p < 0.0001$), and low systolic blood pressure on arrival ($p = 0.03$)
Conclusions: Chest trauma is associated with a significant mortality in Al-Ain city. Mortality is significantly affected by high ISS, reduced GCS and hypotension on arrival.

600 Iatrogenic Rib Fractures During Thoracotomy: Comparision of Posterolateral and Anterolateral Thoracotomies

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Objective: This trial is aimed to evaluate the incidence of rib fractures after two different types of thoracomy and the relation of rib fractures with thoracotomy technique and the type of the lung resection.
Methods: This retrospective study included 588 consecutive patients who underwent thoracotomy between January 2000 and December 2008, with a age range 20–86 (mean 57.25). Operations for thoracic trauma, extended lung resections and re-thoracotomies were excluded. Posterolateral thoracotomy incision was performed for Group I (463 patients; 78.8%), and anterolateral thoracotomy incision for Group II (125 patients; 21.2%). Groups were also divided into two groups for the type of resection, as anatomical resections (segmentectomy, lobectomy, pneumonectomy) (Group A) and other procedures (Group B).
Results: Rib fractures was noted in 137 patients (29.58%) in Group I and in 26 patients in Group II (20.8%). The percentages for rib fractures for Group IA, IB, IIA, and IIB were 53.34, 33.6, 41.17, and

13.18%, respectively. Only the difference between Group IIA and IIB was found to be statistically significant.
Discussion: Rib fractures increase the pain and have a negative effect on breathing during postoperative course. Ineffective breathing may cause athelectasis, fever and infection which is associated with increased morbidity. The incidence of rib fractures are higher in anatomical resections in whom the thoracic cavity should be opened widely. A longer incision and step to step opening of the thoracic cavity may decrease the incidence of this undesirable complication.

601 Surgical Stabilization of Multiple Rib Fracture and Flail Chest by Using Arch Bar

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Objective: This case report describes a surgical method to treat multiple rib fractures by using arch bars.
Case: A 52 year old male patient was admitted to emergency unit with bilateral flail chest, bilateral multiple rib fractures, bilateral hemopneumothorax and pulmonary contusion. The patient was initially tachypneic and had a shallow breathing. Because of the respiratory arrest he was intubated. Physical examination revealed crepitation from subcutaneous and oseeous tissues especially on the left hemithorax. After left sided tube thoracostomy 1500 cc hemorrhagical drainage and massive air leak was observed. CT scan showed bilateral rib fractures extending from the first to the eleventh ribs, bilateral hemopneumothorax and bilateral pulmonary contusion (Picture 1,2). Therefore tube thoracostomy was also administered on the right hemithorax and 150 cc hemorrhagical drainage and air leak occured. Because of the thoracic deformity, persistant hemorrhagical drainage and air leak from the left hemithorax, the patient underwent exploratris thoracotomy and damaged pulmonary parenchyma was repaired. Multiple rib fractures which damaged the thoracic wall stability severely were fixed by using arch bars (Picture 3). The patient required mechanical ventilation for 20 days postoperatively. The latest CT scans of pulmonary parenchyma and thoracic wall after arch bar application are seen in Pictures 4 and 5.
Conclusion: In this case the conventional rib fixation procedures with Kirschner wires or plate plaques could not applied because of multiple small fractured segments. Despite various materials suggested in literature, the use of arch bars to repair flail segments with multiple small pieces are not mentioned.

602 Bilateral Post-traumatic Chylothoraces with Tension

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Introduction: Intrathoracic fluid following blunt chest trauma is almost always blood, and derangement in the patient's cardiorespiratory status is directly related to the volume of blood accumulated in the pleural space and the associated compression of pulmaonary parenchyma. Tension chylothorax in the setting of bilateral chylothoraces is a rare cause for such a condition.
Method: A 40 year old man fell from a height of three meters and presented with back pain. Examination disclosed abrasion and tenderness over the right paraspinal area. He was discharged home. Four days later, he returned in severe respiratory distress – hypertensive, with rapid pulse, tachypneic and with peripheral cyanosis. There were no breath sounds on the right side and decreased air entry on the left, and bedside ultrasound showed fluid in the right chest. Chest X-ray confirmed complete opacification of the right hemithorax and loss of the costo-phrenic angle on the left side. A right tube thoracostomy yielded 2,500 ccs of pinkish-white fluid with immediate improvement in cardiorespiratory status. Computed tomography disclosed bilateral 10th and 11th rib fractures, spinous process fracture of the 12th thoracic vertebra and bilateral effusions. A left chest tube brought back 600 ccs of additional similar fluid. Diliatation of the cisterna chyli in the abdomen with collapse of the thoracic duct were confirmed by MRI.
Conclusions: Post-traumatic tension chylothorax causing cardiorepiratory compromise is rare. In this report, the patient responded to chest tube decompression and dietary measures without complication.
Author to editor: This report is complimented by excellent illustrations, including CT and MRI findings, showing the anatomy of the injury… conducive to poster display.

603 Thoracic Injuries in Victims of Terrorist Explosions: Blast vs. Thoracic Wall Trauma

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Introduction: Blast lung injury (BLI) is a unique injury rarely seen in the civilian population. Our objective was to assess its severity, prognosis and associated injuries as compared to victims with chest wall trauma following explosions.
Material and methods: Retrospective study of victims of the March 11 terrorist bombings in Madrid who were treated at the closest hospital. We compared the group with pure BLI (bilateral infiltrates in a butterfly pattern, and absence of chest wall fractures) (Group I) with that of patients with peripheral infiltrates and chest wall fractures (Group II).
Results: Of 58 patients included in the Registry, 45 (78%) had thoracic injuries. 17 (40%) were included in group I, and 27 (60%) in group II. The mean ISS in groups I and II was of 25.8 ± 7 and 20.6 ± 9.5, respectively. Among the critical patient population in both groups (n = 27), those belonging to group II were in need of a longer period of ventilatory support and had more ventilator-associated pneumonias. In group I, the most frequent associated injuries were tympanic perforation (94.4%), 2º–3º burns (83.3%) and abdominal trauma (33%). In group II, 1º–2º burns (92%), followed by tympanic perforation (89%) and skeletal trauma (52%). One patient died in each group (5.6 vs. 3.7%).
Conclusions: Pure BLI patients had a greater degree of anatomic severity, had more severe burns and abdominal trauma than patients with lung infiltrates and thoracic wall fractures. Overall prognosis was excellent in both groups.

604 Ultrasound Diagnosis in Blunt Thoracic Trauma

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Aım: Aim of the study was to determine the rate of injuries detectable by ultrasonography in patients suffering from blunt thoracic trauma.
Materıals-Methods: This study include the patients suffering from blunt thoracic trauma who have not any pathological findings in routine radiological diagnostic procedures. Ultrasonography of the thorax was prospectively performed in patients with blunt chest trauma additionally to the routine radiological diagnostic procedures. Ultrasound findings referring to the rate of detection of fractures, pneumothorax, pleural effusions, lung contusions, haematomas of the lung and chest wall was performed.
Results: We studied 50 consecutive patients suffering from blunt thoracic trauma who has any pathological findings in routine radiological diagnostic procedures. The findings detectable by ultrasonography were the following: pleural effusion 18%, haemopneumothorax 16%, haematoma of the chest wall 4%, contusion of the lung 2%.
Conclusıon: Rib fractures and pleural effusions are commonly diagnosed by ultrasonography in patients with blunt thoracic trauma. This study showed that ultrasonography may have superiority to chest-X-ray in diagnosis of rib fractures, pneumothorax, haemothorax, haematomas of the chest wall and pulmonary contusions in blunt thoracic trauma patients.

605 Factors Effecting Mortality in Patients with Thorax Trauma

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Aım: The purpose of this study is to define the epidemiologic properties of patients that have been subject to thorax injuries and general body traumas, analyze their condition when they are brought to our emergency department, to determine the correlation of physiological and anatomical risk factors with the mortality rate, and to ensure early diagnosis of severe trauma.
Methods: 371 trauma cases that had been subject to general body trauma have been retrospectively examined in this study. Epidemiological properties of the cases have been determined, their initial condition during initial admission to emergency department have been analyzed, and cases have been assessed in terms of mortality developments. Survival probabilities and unexpected mortality rates have been computed using Trauma Revised Score–Injury Severity Score (TRISS) methodology.
Results: Mortality rates was 22.6%. Univariance analysis revealed that hypotension, age, pathologic respiration pattern, blunt injury, accompanying injury, abdominal trauma, high Injury Severity Score (ISS), low Glascow Coma Scale (GCS), Revised Trauma Score (RTS), TRISS were the factors affecting mortality. In logistic regression analysis, presence of blunt injuries, TRISS < 85, ISS > 22 and GCS < 13 have been found independent prognostic factors. Strongest factor indicating mortality has found to be TRISS.
Conclusıons: In presence of factors affecting mortality, patients with thorax trauma should be evaluated as being of high risk group and therefore diagnosis and treatment strategies must be aggressive. Case analysis based on TRISS model shall further reveal the mistakes that may be made in patient care and may improve patient care.

606 Retrospective Analysis of the Patients with Penetrating Thoracal Trauma

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Introductıon: Penetrating thoracal and cardiac wounds are asssociated with high mortality. We aimed to present our experience in such cases.
Materıals-Method: Twenty three patients with penetrating thoracal stab injury, between 2004 and 2008, were investigated retrospectively. Gender, age, injured areas, extent of thoracal damage, accompanying organ damages and outcomes of these patients were evaluated.
Results: All patients, except one, were male with a mean age of 30.9 years (between 19 and 63 years). In 15 patients penetrating abdominal injury accompanied thorax trauma and one of these patients died peripoeratively. 10 patients out of 23 thoracal trauma had an additional cardiac stab wound and half of them were only pericardial injury. One of these cases went into emergency coronary artery bypass surgery due to LAD injury. Only four patients required intensive care postoperatively and four patients were lost perioperatively all of which had additional cardiac injury.
Conclusıon: The overall mortality rate was 18%, but mortality of patients with additional cardiac stab injury was higher, with a rate of 40%. Suspect of cardiac injury should be considered in patients who are injured close around cardiac area and one should intervene quickly both in diagnosis and treatment.

607 Evaluation of Surgeries Carried Out Due to Thoraco-abdominal Trauma

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Introduction: Abdomen and thorax blunt and penetrating injuries, common cases of emergency surgery, cause less complication with proper analysis and surgical intervention.
Material and method: We retrospectively evaluated 31 patients operated due to thoraco-abdominal blunt and penetrating trauma in İstanbul Training and Research Hospital last year.
Results: Median age was 33.1 (9–78) and all were male. Patients were operated due to blunt abdomen in 8, penetrating abdomen injury in 18, abdomen and thorax penetrating injury in 5 by general surgeons. Abdominal exploration in 5 (16.1%) were negative laparotomy.

Abdominal ultrasonography or CT were applied to 5 (62.5%) patients with blunt trauma and 8 (34.7%) patients with penetrating trauma.
One (12.5%) negative laparotomy was applied to patients with blunt trauma. 2 to 3 splenic injuries was splenectomy. 1 sigmoid perforation, 1 diaphragm rupture, 1 bladder rupture were observed and were fixed primarily. One patient died during surgery due to liver and vena cava injuries. Patients with penetrating injury were operated due to firearm injury in 6 (26%) and stab wound in 17 (74%), mortality was not. Negative laparotomy was applied to 5 (21.7%) patients. Multiorgan injury was observed in 6 patients. Tube thoracostomy was inserted to 4 patients. 6 of the intestine injuries and stomach injury was fixed primarily. Two resection and anastomose and three diversionary ostomy were done.
Conclusion: Proper examination must be considered according to the formation of trauma. İmaging methods have been used less in penetrating trauma, and negative laparotomy is reported to be applied more than in cases of blunt traumas

608 Diaphragmatic and Visceral Organ Perforations Due to Chest Tube Insertion

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Introduction: Chest tube insertion is frequently used by thoracoabdominal surgeons in urgent conditions. Occasionally, this invasive procedure may be associated with lethal complications in inexperienced hands. In this study, we analyzed 6 patients with visceral and/or diaphragmatic injuries due to chest tube insertions.
Methods: Six patients with diaphragmatic and visceral injuries subsequent to chest tube insertions between 2003 and 2006 were evaluated. The diagnosis was established with roentgenogram, biochemistry of the fluid drained from the chest tube and confirmed with computerized tomography in all patients.
Results: Pleural effusion accompanying respiratory distress was the main indication for chest tube insertion in all patients. In five patients, coexistent gastric perforations with diaphragmatic ruptures were detected, also the esophagus was additionally perforated in one patient. Partial gastrectomies were performed in three patients, whereas total gastrectomy in one and primary repair required in two patients respectively. Five of the patients died from septic complications. The only survived patients with early diagnosis and primary repair was discharged from the hospital on the 12th day.
Conclusion: Penetration of a drainage tube through viscera is a well-recognized but seldom reported phenomenon. In the majority of patients with diaphragmatic rupture, abnormalities can be found at initial chest radiography. If transdiaphragmatic herniation is missing, diaphragmatic rupture is difficult to diagnose by chest radiography alone. Computed tomography is often necessary to reveal the correct diagnosis. Early diagnosis and treatment are extremely important in the management of these patients.

609 Penetrating Cardiac Trauma in a Small State Hospital, Case Report

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Introduction: Mortality rates of penetrating cardiac injuries vary from 8.5% to 81.3%. Approximately 80% of all patients sustaining a penetrating injury to the heart die at the scene or during transportation. Of the remaining 20% who reach the hospital with any sign of life, mortality is still very high.
Case: Bozkir State Hospital is a small hospital having 25 beds, three specialists and six general practitioners. The Hospital is 120 km and 1.5 h away from city center. A young man who was stabbed in the left thorax admitted to emergency department. Massive fluid infusion was initiated. In 5 min, general surgeon arrived. Left thoracoabdominal penetrating trauma was seen. Patient was immediately transported to the operating room. Midline abdominal incision was performed. Cardiac injury was seen by window of diaphragmatic laceration. Anterior gastric injury was obtained. Cardiac injury repaired immediately. Left tube thoracostomy was applied. Diaphragma and stomach was repaired. Five unit blood transfusion was performed during surgery. After operation, patient was transferred to intensive care unit of large hospital at city center. Patient recovered well after 3 weeks.
Conclusion: Penetrating cardiac injuries require rapid transportation, aggressive resuscitation, immediate diagnosis, and prompt treatment. Anesthesiologist is not available in our hospital. Blood products can be supplied from city center on demand with an 1.5 h delay. Despite all the difficult conditions, thanks to prompt initial handling by the paramedics and emergency personnel and a trauma trained senior surgeon, the young man could return to normal activities without any physical deficit.

610 Lower Neck Gunshot Wound – Diagnostic Problems – A Case Report

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Introduction: We show a case where a little traumatic damage can pose difficult diagnostic problems.
Results: We present a 29-years old male with a penetrating trauma (gunshot) in the left lower neck and upper thorax. He was transferred from a TCLII for suspicion of neck great vessels injury. Physical examination revealed a 2 cm gunshot wound in the left cervicothoracic region associated with subcutan emphysema and a 1 cm gunshot wound in the left scapular area; abolished vesicular breathing and stony dullness in the left thorax. ChestRX revealed massive pleural effusion; CT displayed peritracheal, anterior tracheal and left supraclavicular emphysema, massive left hemothorax, metallic object (bullet fragment) in the upper left thorax and discret cerebral edema. We urgently placed a left chest tube – 1,800 ml blood drainage and tracheal intubation. Upper GI endoscopy showed normal aspect. Laringoscopy showed edema in the upper respiratory tract. After extubation (day 3), he presented persistant dysphonia, wheezing and expiratory dyspnoea with decreasing SpO_2. CT revealed 2 tracheal lesions with peritracheal liquid. Flexible bronchoscopy showed important subglotic tracheal stenosis (4–5 cm) with large postinjury granuloma. We performed excision of tracheal granuloma, with favourable postoperative course and discharge after a week.

Conclusıon: we expected a lower neck gunshot would have produced serious damage (vascular, neurologic, tracheal), yet modest trauma can sometimes pose difficult diagnostic problems, which can delay the appropriate treatment. Care must be taken and additional tests performed when little symptoms persist after major traumatic injury as been ruled out.

611 A Rare Complication after Firearm Injury: Bronchobiliary Fistula

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Bronchobiliary fistula is a rare condition, arising as a complication of hydatid disease of the liver, hepatic tuberculosis, hepatic malignancy, chronic pancreatitis, hepatic trauma or surgery. Conservative treatment is directed at non-surgical approaches of relieving biliary obstruction to allow for normal flow of bile into the duodenum via endoscopy or percutaneous routes. However in complicated cases which failed conservative non-surgical therapy, surgical intervention is usually required. We report a 35-year-old man who presented with bilioptysis from a bronchobiliary fistula resulting from firearm injury after 15 days. For his current admission, the patient reported a 5-day history of cough productive of yellow-green sputum coupled with fevers and malaise.This was successfully treated surgically with a right medial lobectomy and t-tube drainage.

612 Diagnosis and Management of Traumatic Sternal Fractures

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Objectıve: The aim of this retrospective study is to assess the hospital course and the outcome of patients with sternal fractures.
Methods: Between 1998 and 2008, 22 patients (16 male, 6 female; mean age 45.36 years; range 27 to 66 years) with sternal fractures after thoracic trauma were hospitalized in our clinic. The reason, location and type of fractures, treatment methods, complications and the outcome were evaluated retrospectively.
Results: Traffic accident was the most common reason of sternal fractures with 13 patients (59.1%). Eleven of these 13 patients used seat belt (84.61%). Sternal fractures were localized at corpus in 19 patients (86.4%) and at manubrium in 3 patients (13.6%). Hemopneumothorax had been occurred in 3 patients (13.6%). Cardiac enzyme levels increased in 14 patients (63.6%) and pathologic findings in electrocardiography and echocardiography were observed in 5 (22.7%) and 4 (18.2%) of patients, respectively. 18 patients (81.8%) were observed without any surgical intervention. Tube thoracostomy was performed in 3 patients (13.6%). One patient was managed by surgical fixation. There was no complication and mortality. Mean hospital stay was 5.7 days (range 2–20 days).
Conclusıon: Sternal fractures occur frequently in patients who used seat belt at the time of traffic accident. Lateral chest radiograms must be performed for all patients after thoracic trauma. In patients with a sternal fracture, cardiac enzyme levels and electrocardiography should be monitored. Patients with pathological findings should be evaluated with echocardiography. The management of patients with isolated sternal fractures is usually conservative.

VASCULAR SURGERY

613 Traumatic Aortic Rupture

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Introduction: According to American evaluations 90% of the patients with traumatic aortic ruptures die previous to hospital admission. Most of the patients reaching the hospital alive, are mostly polytraumatised or not fully ruptured. The causes such an injury are blunt thoracic injury, car accidents or falls from greater heights.
Materials and methods: Between the years from 1992 to 2004 12 patients with a traumatic aortic injury were submitted to our department. Their treatment was interdisciplinary with Heart- and Thoracic surgeons, Trauma surgeons and Radiologists. The patients included 1 woman and 11 men, 10 patients were polytraumatised. Three patients received treatment for the aortic rupture within the first 24 h of admission, 3 patients were treated within a week and in 6 cases the ruptured was treated more than 1 week after hospital admission.
Results: Five patients received stenting, the other seven patients were treated by open operation (patch, Prostheses). Three patients died, one died of the severe head injuries, on bleed to death from the ruptured liver and one patient died directly from the aortic rupture.
Conclusion: An aortic rupture is a very severe injury and the survival of the first 24 h is crucial. Stenting is a minimally invasive technique to treat such injuries, which largely minimises the blood loss. If a patient with an aortic rupture reaches the hospital alive his chance of survival rises. Even though this is largely correlated with the adjoining injuries. All the patients who died were multiple injured patients.

614 Total Neurovascular Injury Associated with an Elbow Hematoma

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Background: We described a patient with dysfunctions of all the nerves and ruptured brachial artery and vein due to closed injury caused by spontaneously reduced dislocation of the elbow.
Case: A 42-year-old man fallen down onto his left elbow with small skin erosion and a large area with ecchymosis on the elbow presented. Left radial and ulnar pulses were nonpalpable but no sign of acute ischemia was noticed. He had drop hand and could minimally make flexion, opposition, abduction and adduction of fingers. Strength of fingers, wrist flexion and thumb adduction were weak. Radiography was normal. Emergent surgical exploration was performed with prediagnosis of severe closed soft tissue injury and vascular damage. Brachial artery and vein had complete disruption with rupture of brachial muscle and the anterior joint capsule. Elbow joint could be posteriorly dislocated. Artery and vein were repaired with saphenous vein graft. Median and ulnar nerves had normal appearance. At postoperative 12th hour nerve injuries showed

complete recovery. He could have normal range of motion in the wrist and hand. Sensorial examination was normal. He had a well perfused arm.

Conclusıon: Spontaneously reduced dislocations of the elbow can be sometimes missed. Large hematoma and neurologic dysfunction in closed injury of the elbow indicate severe trauma of joint also in case of normal bone structure in radiography. Immediate diagnosis and operative treatment of brachial artery injury is mandatory. Closed elbow dislocation and multiple nerve injuries may have good results with conservative treatment.

615 Vascular vs. Orthopedics – Who Operates First?

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We present the case of a 53 y male, with his left lower limb severely damaged by a caterpillar vehicle. He was admitted in the ER about 90 min after the accident. He presented with exposed fractures of the femur and leg bones, extensive soft tissue and muscle damage, class III shock, and an umbilical clamp in the exteriorized femoral artery in the thigh, placed by a fireman in site. The MESS (Mangled Extremity Severity Score) calculated for this patient was 9. After the initial assessment in the ER the patient was transfered to the OR. He had a complete transection of the femoral artery and vein with a severe ischemic foot. Despite the MESS score, a vascular and bone repairs have been considered. Two temporary shunts were placed in both femoral vessels (artery and vein) followed by external fixation of the femur and leg fractures. The definitive vascular repair of the artery and vein was made with autologous saphenous vein after the bone fixation. Some damaged skin and necrotic soft tissues were removed, and the reminder skin was only proximated. The limb was functionally and anatomically preserved, with no obvious neurologic deficit, despite subsequent debridements and skin grafts. The authors concluded that in similar cases:

1. Damage control principles can a be used in all surgical fields
2. General Surgeons must have experience in vascular repair skills
3. The reperfusion of the limb must be guaranted before the bone repair

Author to editor: I would appreciate some ''doctoring'' in my english Best regards

616 Subclavıan Veın Thrombosis Extendıng into the Internal Jugular Vein (Paget–Schroetter Syndrome)

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Paget–von Schroetter Syndrome(PSS) refers to spontaneous thrombosis of the subclavian vein and constitutes 0.5–1% of all venous thromboses. It is prevalent among young and healthy adult males who engage in sports. A 42-year-old male presented with pain and swelling of the left arm after a sequence of intense, repetitive weight lifting exercises. Upon questioning, He disclosed that he had been engaged with weight lifting for a long time and had complaints for a while. Bases on these findings, upper-extremity effort thrombosis was suspected. Contrast-enhanced MR Angiography revealed near-complete occlusion of the proximal left subclavian vein and collateral formations in the distal were observed. Color Doppler US showed a heterogeneous thrombotic mass that filled almost the entire proximal segment of the left subclavian vein thrombosis extended into the proximal segment of the left internal jugular vein. Furthermore, extensive venous collateral formations were present the left proximal cervical localization. Both MR angiographic and sonographic findings were consistent with PSS. As the patient had already developed extensive venous collaterals, no surgical intervention was performed. Instead, treatment with low-molecular weight heparin and anticoagulants, was initiated and was continued along with the follow-up for bleeding parameters. As of 3 years clinical follow-up the patient is doing well, and treatment is continued with oral anticoagulants and acetylsalicylic. PSS should be considered in the differential diagnosis of effort induced upper extremity pain and swelling. Conservative non-operative treatment is acceptable and can be successfully used with favorable long-term outcomes.

617 Acute Compartment Syndrome of the Thigh in a Patient with Popliteal Artery Injury Following Blunt Trauma

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Although, blunt trauma of the extremities is a common diagnosis in emergency clinics, compartment syndrome associated with vascular injury following blunt trauma may be difficult to diagnose. Urgent diagnosis and treatment of compartment syndrome is of particular importance for limb salvage or even to save the patients' life. 43 years old male patient was referred to emergency clinic due to blunt trauma of the right lower extremity. Right thigh was echimotic and swollen. Pallor, coldness and severe pain were present at the lower part of the trauma level. Distal pulses were not palpable. Acute compartment syndrome of the right thigh was diagnosed that led to an emergent operation. Intraoperatively, popliteal artery rupture was diagnosed and repaired with end-to-end anastomosis. Fasciotomies were performed at the anteromedial and anterolateral portions of the right leg and anteromedial part of the thigh for the treatment of compartment syndrome. In early postoperative period, distal pulses were palpable. Preoperatively present pallor and coldness improved in the first few h. Fasciotomies were closed with skin grafts at the 10th postoperative day. Patient was discharged at the 19th postoperative day with palpable distal pulses and failure of dorsal flexion of the right ankle representing mild neurological injury. Possible vascular injury should be kept in mind in a patient with compartment syndrome following blunt trauma of extremities. Success of surgical repair depends on the early diagnosis and treatment. Late repair may result in neurological complications or even the loss of extremities.

618 Chemical Injury of Braquial Artery: Case Report

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Introduction: Trauma is responsible for 3.2 million of death, 80% of them in young people. Vascular injuries of the upper extremity represent 50% of all peripheral vascular lesions, the majority of them at the braquial artery.
Objective: Report a case of chemical injury of braquial artery.
Methods: 41-year-old man was admitted in the emergency room with third degree sulphuric acid burn in the middle third of arm (2% of total body surface area). The radial and ulnar artery pulses were palpable. At the 20th day after injury, haemorrhage was noted and disruption of braquial artery was clear. A braquial-radial reversed long saphenous vein interposition graft was performed. After surgery palpable radial and ulnar pulses were present, without evidence of nerve injury.
Results: The chemical burns severity depends on the concentration, properties of the agent and the duration of skin contact. Sulphuric acid causes coagulation necroses, with thrombus formation in the microvasculature. Its corrosive properties are accentuated by exothermic reaction with water. Its burns are more serious than those compared with strong acids, and, as observed in this case, it causes frequently third-degree injuries. Besides this, it has the ability to cause continuing tissue destruction, from 6th hour to 28th day after injury. This fact could explain why there was no artery lesion at the admission but at the 20th day.
Conclusion: Sulphuric acid burn is potential devastating and tend to be prolonged in time, obliging to a continuous monitoring and multidisciplinary approach.

619 Death Due to Peripheral Vascular Injury Without any Fracture Following Blunt Trauma

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Introduction and objectives: The medicolegal studies show that the most frequent mechanisms of the lethal major vascular injuries were stab wounds followed by gunshot wounds and blunt trauma. During the blunt traumas, simple lethal major vascular injuries without any fracture are seen rarely. We experienced a case of common femoral artery and vein transection as a cause of death without any femoral fractures which were caused by blunt trauma.
Case: During the transportation of wood blocks, a wooden log fell from the truck over the forester, 34-year-old man. He sustained a crush injury and died in the emergency service on the same day of the trauma. It was learnt that no medical intervention was performed on the case. Ecchymotic bruises on the left abdominal-pelvic, femoral, right inguinal, genital region, deformation under the right knee were observed during the autopsy. It was determined that there was a traumatic transection on the left common femoral artery and vein, which was accompanied by massive bleeding in surrounding soft tissues and muscles without any fracture of the left femur. All the internal organs were intact and showed paleness. Death was due to internal hemorrhage caused by the transection of the femoral artery and vein.
Conclusions: During the examination of the cases who were exposed to the blunt trauma, peripheral vascular injury must be investigated without any delay. If vascular injury was determined in the early times after the trauma, surgical and medical treatment could be performed successfully and the case could survive.

620 Cerebral Infarct due to Delayed Diagnosed Traumatic Carotid Artery Dissection

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Introduction: Traumatic Internal Carotid Artery dissection is a rare and grave cause of embolic strokes occurred especially in young age group. If it is not diagnosed early and required treatment is not given, thrombosis can be a serious trouble with permanent neurological deficit and high mortality rate up to 40%.
Case: We presented a delayed diagnosed traumatic carotid artery dissection in a 21 year-old female case. There were no ischemic infarct findings in the cerebral CT on admission, but there were cerebral infarct findings in the cerebral CT taken twice because of the left hemiplegia noticed 7 days later when the patient regained her consciousness. We made the diagnosis of the case, forwarded to our emergency service with acute cerebral infarct diagnosis, certain through arterial Doppler ultrasonography, cerebral MRI, diffusion MRI and MR angiography. We did not consider invasive treatment since the neurological damage was permanent and dissection grade was IV according to angiography findings. We did not administrate anticoagulant treatment considering that the patient can turn her ischemic infarct into hemorrhagic infarct. The case was discharged within a week and advised physiotherapy.
Conclusion: Although the advances in diagnostic methods, diagnosis with traumatic carotid artery dissection is still missed out or delayed as in the case we presented. Early diagnosis enables permanent neurological damage to be decreased or vanished. However, the vital factors for early diagnosis are the obtained anamnesis to direct to radiological examinations, detailed physical examination and high clinical doubts.

621 Extremity Injuries

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The incidence of vascular injuries has increased worldwide during the last few years and very often these injuries are associated with

complex trauma to extremities. Extremity vascular injury may result from penetrating injury.

Methods: The patients who underwent surgical operation for vascular trauma over the period between 2004 and 2008 in our clinic, were analysed like the table. Vascular regions and trauma types to age was shown in Tables 1, 2. The patients had investigated by us very early maximum 3 h after the trauma.

All cases were completed vasculary anastomoses and were discharced with cure

Table 1 Vascular injury region with /without tissue damage.

Localisation	With venous injury	With osteal fracture	With nerve injury	With tendinous injury	Only arterial injury	Only venous injury	Total
A.carotis	–						
V.Jugularis	1	1					
Subclavien							
Axiller	1	1	1	3			
Brakial	2	2					
Radial/ulnar	2	1	2	6	11		
A.V.iliaca externa/int	1	2	3				
Femoral	1	2	3				
Popliteal	1	2	1	1	2	7	
A..Tibialis ant. /posterior	2	1	3				
v.cava inf.	2	2					
Total	3	6	4	3	14	5	35

Table 2 Patient age correlation with age.

Age	Penetrating trauma	Gun shot	Blunt	Total
0–10	1	1		
11–20	1	2	3	
21–30	6	3	2	11
31–40	4	4	1	9
41–50	2	1	2	5
51–60	1	2	3	
61–70	1	2	3	
Total	15	11	9	35

Conclusıon: In vascular injuries; a careful physical examination and early intervention with a suitable reconstructive technique should be used in order to achieve a successful result.

622 Acute Arterial Occlusion

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Introduction: Acute arterial occlusion is a serious clinical condition resulting death of patient or related organs. These are usually older patients with a lot of comorbid conditions.

Method: İn our clinic, We retrospectively examined the records of 73 patients who underwent surgical treatment for acute arterial occlusion between January 2005 and December 2008. Mean age of patients was 66.8 years. 35 (48%) of these patients were female, and 38 (52%) were male. Embolic occlusions were found in an upper extremity in 13 (18%) patients and in a lower extremity in 60 (82%). The most common source of these emboli was cardiac origin. Atherosclerosis, trauma and arterial catheters were the other causes of emboli. 35 (48%) of patients were admitted less than 6 h preoperatively, 18 (25%) were admitted 6–24 h preoperatively, 20 (27%) were admitted after a delay of longer than 24 h preoperatively. 27 (37%) of patients were in sinus rythm, 46 (63%) were in atrial fibrillation preoperatively. Motor dysfunction of extremity was found in 24 (33%) of patients preoperatively. Diagnosis was based on the findings of physical examinations and emergent doppler ultrasonography. Any other invasive evaluation was not performed to decrease acute occlusive ischemic period. Surgical intervention had performed immediately

Results: The overall mortalıty rate was 12% (9). İn 10 (13.6%) of patients, after setting of demarcation line, amputation was performed.

Conclusıon: Early diagnosis, catheter embolectomy and use of anticoagulation are very important therapeutic modalities for limb salvage and reduction of morbidity and mortality.

623 Acute Mesenteric İschemia

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Background: Acute mesenteric ischemia (AMI) is a life threatening vascular emergency which requires prompt diagnosis and treatment. The prevention of this cause of high mortality and morbidity depends on early clinical suspicion end timely intervention. In the present study we aimed to analyze the acute mesenteric ischemia cases treated in Mustafa Kemal University Department of General Surgery between January 2004 and December 2008.

Material/methods: The clinic records of all the patients who underwent surgical treatment for AMI between January 1, 2004 and December 2008, were retrospectively reviewed. The data from operative records, postoperative complications, mortality, and hospital stay were recorded.

Results: The study group included 18 patients. Mean age was 69. There was a comorbidity in all patients and cardiac disease and hypertension were the most common ones. The most common laboratory abnormalities were leukocytosis, hypoalbuminemia, hyperamylasemia. There was superiory vasculary necrosis in 16 patients, inferior vasculary necrosis in one patient.One patient had nonocclusive mesenteric ischemia. Segmentery resection was performed to 13 patients. Abdominoperineal resection was performed to the patient with inferior mesenter artery occlusion. We performed duodenotransversostomy on two patients and only laparotomy on two patients. Reoperation was required in five patients. Causes of death was multiorgan insufficiency in seven cases, cardiac death in two cases.One patient died due to short intestine syndrome.

Conclusıon: Acute mesenteric ischemia is highly mortal emergency which should always be suspected in elderly patients with cardiac disease suffering from abdominal pain.

624 Acute Ischemia of the Lower Member after Injury by Firearm – Case Report

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Patient with 48 years, male sex, admitted at the Urgency Department after injury of the left lower member by firearm. At the admission presented loss of substance and hemorrhage in the medial and lateral faces of left leg and foot with signs of ischemia. An arteriography of the member was carried out showing infrapopliteal arterial lesions of the three axes. During surgery, fracture and losses of peroneum substance was observed with macroscopic tibial and peroneal common nerves integrities. He was submitted to tibial interposition grafts with subsequent reversed contralateral internal saphena vein bypass. In the 21th postoperative day it was carried out surgical debridement and plastia with partial skin graft. He presented good cicatricial evolution, with hospital discharge 7 days after, oriented to external consultations of Vascular Surgery, Plastic Surgery, Physical/ Rehabilitation Medicine and Pain Consult. Five months after surgery, pain was controlled with the medication instituted, with improvement of the left lower member limitations with physiotherapy, good cicatricial evolution and posterior tibial and dorsalis pedis pulses palpables.
Dıscussıon: The incidence of arterial wounds following penetrating injury of the members is 10%. The vascular trauma occurs more frequently in the lower extremities, being the most common clinical presentation acute isquemia. The most frequent causes are vehicle accidents, falls and firearm wounds. In the United States, injuries by firearm represents the first cause of death in young individuals of male sex. The arterial bellow-knee injuries by firearm remain like a challenge, with an associated rate of amputation of 20 to 54%.

ACUTE CARE SURGERY

625 Damage Control

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Trauma represents one of the most important causes of death and disability of today. The exponential growth of the major cities, the continuous building of roads and the uprising of terrorism, foresee that trauma will keep is importance as a major cause of disease. Recently, the management of the trauma patient as been modified, with the introduction of the ATLS method. This fact has produced great improvement, proven and reproducible, decreasing mortality and morbidity of trauma. The next stage of treatment implies surgery. The DSTC course, and other similar ones, allow the teaching of surgical damage control to surgeons. In this courses, the surgeon not only learns the theoretical basis of the surgical techniques but also acquires the skills to perform them. More importantly, he learns trauma pathophysiology, so he can perform the difficult task of surgical decision-making. Using the same computer-animated drawing technique as in a previous video (Primary Survey), the authors continue to present a trauma patient, after the stabilization of the Primary Survey, at the Operating Room. The patient has a severe abdominal trauma and needs Damage Control of his lesions, for he is already suffering from the deadly triad: hypocoagulation, acidosis and hypothermia.
Author to editor: Video Presentation

626 Laparoscopic Management of a Strangulated Diaphragmatic Hernia

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A 66 year-old male patient was admitted to our hospital for severe abdominal pain. Thoracoabdominopelvic CT scan demonstrated incarcerated bowel loops in the right hemithorax. Strangulated transverse colon segment and omentum through the defect at the dome of right diaphragma was found at diagnostic laparoscopy. Diaphragmatic hernia was primarily repaired with endostitches, and supported with a polipropylene mesh fixed with endotuckers subsequent to reduction of strangulated organs to the abdomen. Resection of necrotic intrabdominal organs and a side-to-side stapled colocolonic anastomosis was performed through a subcostal minilaparotomy. Drainage of right hemithorax was provided with a tube thoracostomy. The patient was discharged on the 5th post-operative day without any major complications.

EMERGENCY MEDICINE

627 Our First Single Incision Laparoscopic Appendectomy Experience

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Introduction And objectıves: Single incision laparoscopic procedures are accepted as a step towards pure natural orifice transluminal endoscopic surgery. However, loss of requirement of any perforation of visceral organ and an endoscopic equipment make this technique more popular and easily performable. Here in we report our first appendectomy case who was performed with single incision laparoscopic surgery (SILS) technique.
Methods: 32 years old male patient with the diagnosis of acute appendisitis underwent single incision laparoscopic appendectomy. A 2 cm umbilical incision was used for the placement of 3 (5 mm) trocars. One 5 mm videoscope and reticulated laparoscopic dissector, grasper were the main tools during surgical procedure. Appendix was removed through the umbilical trocar incision. Whole procedure ended in 25 min without any problem.

Results: The patient was discharged on postoperative 16th hours without any complications.
Conclusion: Single incision laparoscopic appendectomy is a safe and effective technique that can be performed in well experienced centers success.

PREHOSPITAL CARE

628 Primary Survey

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Trauma represents one of the most important causes of death and disability of today. The exponential growth of the major cities, the continuous building of roads and the uprising of terrorism, foresee that trauma will keep is importance as a major cause of disease. Recently, the management of the trauma patient as been modified, with the introduction of the ATLS method. This fact has produced great improvement, proven and reproducible, decreasing mortality and morbidity of trauma. The teaching of this new method, albeit its good results, has not seen many changes over the years. However, in recent days, we have seen the introduction of new computer technologies in teaching. This methods use simulation, e-learning and even interaction as learning techniques. Taking advantage of the mentioned techniques, the authors produced an animated video, using computer-animated drawings that allow demonstrations difficult to reproduce in real life. Using simple software and computer video editing, the authors invite you to watch a trauma patient in the Emergency Room, since his arrival to the end of the Primary Survey, watching demonstrations of life saving techniques and the stabilization of the patient.
Author to editor: Video presentation

SKELETAL TRAUMA

629 Arthroscopic Stabilization of the Acute Acromioclavicular Joint Dislocation – Surgical Technique

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Introduction and Objectives: Complete acromioclavicular (AC) joint injuries (Rockwood types IV, V, and VI) are usualy treated surgically while type III injuries are evaluated on a case-by-case basis. Despite the common occurence of AC joint dislocation no ideal surgical technique is known. Early and late postoperative complications are common including breakage of the implant, migration, loosening, clavicular erosion and postoperative arthritis.
Methods: We present arthroscopic technique of AC joint stabilization with TightRope system (Arthrex). With arthroscope in subacromial place AC joint is cleaned and distal clavicular resection is performed to ensure complete clavicle reduction. Intraarticular access to coracoid is used through rotator interval. Coracoid is visualized. With drill guide C ring and cannulated drilling clavicle and coracoid tunnel is prepared. TightRope system (two titanium buttons connected by a heavy suture in a four strand configuration) is introduced through clavicle and coracoid. Clavicle is reduced under direct visualisation and the sutures are tied. This step completes the reduction and stabilization of the AC joint.
Results: Technique is minimal invasive, safe and reproducible. Arthroscopic reconstruction yields to good functional and cosmetically pleasing results. No clinical or radiological loss of reduction were observed.
Conclusions: AC joint reconstruction and stabilization can be performed safely and effectively with arthroscopic technique which provides stable AC joint with good cosmetic result.
Author to editor: Prepared for video presentation

THORACIC TRAUMA

630 Penetrating Thoracic Trauma

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The authors present a video of a young male, 28 years of age, ± 100 Kg victim of a motorcycle crash, with a fall over cut branches of trees, 30 min before his admission in the E.R. He sustained an impalement with a stick in the fourth right anterior para-sternal space. At admission he was conscious, GCS = 15, BP = 140/80, HR = 90/m, $SatO_2$ = 94%, hemodynamically normal. Breath sounds slightly diminished in the left. A left anterolateral thoracotomy as been done, as well a left subcostal lararotomy, since the stick also had penetrated the left hemidiaphragm. The patient had no significant thoracic or abdominal injuries despite the violence of the trauma mechanism. The ''foreign body'' was successfully removed by combined abdominal and thoracic route, and a left chest tube was put in place. The patient recovered very well and was discharged in the eighth day.
Author to editor: ''English'' corrections are welcome, please!