

with 42 femoral and 11 tibial fractures were treated with either reamed intramedullary nailing (Group R, n = 28) or with unreamed nailing (Group NR, n = 20) within three days of their injuries. The mean value for age was 27.4 years (range, 16 to 63 years). In Group R, 28 femoral and four tibial fractures, reaming was performed up to 12.5 mm, and a 9–11 mm nail was inserted. In Group NR, 14 femur and 7 tibial fractures, a 9–10 mm nail was inserted without reaming. BAL was performed within 24 hours postoperatively with the standard procedure, in which sterile normal solution is instilled in 20 mL aliquots for a total of 100 ml, and immediately aspirated manually with a syringe. The cells contained in the lavage fluid were counted on uncentrifuged specimens by using a hemocytometer. The fluid then was centrifuged (1,500 rpm, 5 minutes), and differential cell counts were performed on a preparation that was stained with Wright-Giemsa stain. The percentage of lavage cells containing red or brown-red fat droplets (lipid-laden cells) was calculated after examination of at least 200 cells on the slides stained with Sudan III, and the findings for two groups were compared.

Results: The average age, ISS, and fracture index (FI) were 28.1 ± 12.4 years, 15.2 ± 9.3 , and 5.4 ± 2.4 in Group R; and 26.3 ± 11.7 years, 14.5 ± 6.4 , and 4.7 ± 3.2 in Group NR, respectively. There were no significant differences between two groups. The mean percentage of lipid-laden cells in BAL fluid was $33.6 \pm 25.8\%$ (range, 2–89%) for Group R and $36.6 \pm 21.3\%$ (range, 2–70%) in Group NR. This difference also was not significant statistically. In this study, no typical features of fat embolism syndrome were identified in any of the patients.

Discussion and Conclusion: Conventional nailing procedures involving reaming of the medullary cavity have become an established method of long bone fractures over the last few decades. In recent years, however, case reports have been published describing acute pulmonary failure during reamed nailing of long bone fractures. An alternative to conventional reamed nailing can be found in the application of nails of smaller diameter inserted without reaming. This unreamed nailing could prevent pulmonary fat embolism compare to reamed nailing. To evaluate pulmonary fat embolism during intramedullary nailing, we compared patients in a reamed intramedullary nailing group with an unreamed nailing group by means of BAL fluid analysis. Based on the results of this study, unreamed nailing may not prevent pulmonary fat embolism compare to reamed nailing of the medullary cavity.

Keywords: bronchoalveolar lavage; fat embolism; fractures; intramedullary nailing; prevention; surgery; trauma

P-10

Trauma Scoring Systems Explained

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It is important to understand the variety, extent and limitations of the extant Trauma Scoring Systems that are referenced in the English Language literature. Trauma scores are tools to evaluate the extent and severity of injury, facilitate inter-institutional comparisons, and facilitate trauma research. In the United States, emergency physicians direct prehospital care systems, direct trauma teams, and stabilize trauma victims for trauma surgeons. Currently, there is no concise description of extant trauma scoring systems in the Emergency Medicine (EM) literature. This poster presentation presents the three types of trauma scoring systems: 1) physiologic; 2) anatomic; and 3) combined. A hypothetical case study illustrates the use of each system.

The systems described include the:

- 1) Glasgow Coma Scale (GCS);
- 2) Pediatric Glasgow Coma Scale, (PGCS);
- 3) Trauma Score (TS);
- 4) Circulation, Respiration, Abdominal / Thoracic Motor and Speech Scale (CRAMS);
- 5) Acute Physiology and Chronic Health Evaluation System (APACHE);
- 6) Abbreviated Injury Scale (ASS);
- 7) Injury Severity Score (ISS);
- 8) Anatomic Profile (AP);
- 9) A Severity Characterization of Trauma (ASCOT);
- 10) Revised Trauma Score, (RTS);
- 11) Pediatric Trauma Score (PTS); and
- 12) Drug-Rock Injury Severity Score (DRISS).

Keywords: Emergency Medicine; scoring systems; severity scores; trauma

P-11

Development of Right Internal Carotid Artery Transection with Fatality in a Head-injured Patient: A Case Report and Literature Review

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Introduction: Head and neck traumas are a major challenge to Emergency Physicians in Taiwan, partial due to the large population of motorcycle drivers. But, head injury combined with internal carotid artery transection, basal skull fracture, and intracranial hemorrhage is a rare emergency occurrence, and needs rapid response and aggressive treatment.

Case Report: A 43 year-old female was brought to the Emergency Department following a motorcycle accident. Initial evaluation showed stable hemodynamics, but loss of consciousness with a Glasgow Coma Scale score of five. Nasal bleeding and bloody otorrhea were the first presenting features. The computed tomographic (CT) scan of the brain demonstrated a basilar skull fracture and intracranial hemorrhage. Subsequent emergency carotid and vertebral arteriography disclosed dissection with pseudoaneurysm formation over the high cervical and

petrosal segments of right internal carotid artery. The patient died of rapid hemodynamic collapse four hours after arriving at the Emergency Department.

Discussion: From the poor outcome of this critical case, we learned a significant lesson about managing this major trauma. Priorities of resuscitation and the current concepts of therapy were reviewed.

Keywords: carotid artery; head trauma; intracranial hemorrhage; motorcycles; pseudoaneurysm; skull fracture

Poster Session IV Wednesday, 13 May, 14:00–15:00 hours

P-12

Strategy for Acute Myocardial Infarction Due To Obstruction of Left Main Trunk of the Left Coronary Artery

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Introduction: Recently various catheter interventions (i.e., percutaneous coronary angioplasty (PTCA), stent, etc.) have been used for the treatment of acute myocardial infarction (AMI). Using these interventions, the results of treatment for AMI have improved. However, AMI due to left main trunk of left coronary (LMT) artery often still is fatal.

Purpose: To investigate the factors to improve the treatment for cases with obstruction of the main left coronary artery.

Methods: We performed coronary artery bypass grafts (CABG) for 593 cases of ischemic heart disease between February 1982 and March 1998. Out of these cases, 74 cases (12.5%) had an AMI. Furthermore, 13 (17.6%) of the AMI cases had obstruction of the LMT. Preoperatively, 11 cases (84.6%) were Forrester Type IV. All of these cases required assistance with an intra-aortic balloon pump (IABP) preoperatively. Eight cases had intervention for and obstructed LMT; two cases had failed PTCA for other portion of the vessel.

Results: Early death occurred in six cases (Group D), and there were seven cases in the survival group (Group S). There was one case of right coronary artery (RCA) dominance in Group S. Except for this case, the time to catheter intervention from onset of AMI of Group S was shorter than for Group D. In the three cases in Group D in whom reperfusion of LMT could not be obtained, the time to operation from onset was >6 hours.

Conclusion: AMI cases due to LMT obstruction had catheter intervention performed within 2–3 hours from onset, if possible. After that, CABG was needed as early as possible after the patient was assisted by IABP. If intervention was unsuccessful, CABG was needed within four or five hours.

Keywords: acute myocardial infarction; angioplasty; arteries, coronary bypass, balloon pump, coronary bypass graft; intra-aortic, heart disease, ischemic

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Association between Angiotensin Converting Enzyme Gene Polymorphism and Acute Coronary Syndrome in Taiwan

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Introduction: The angiotensin-converting enzyme (ACE) is responsible for the production of angiotensin-II and in the degradation of bradykinin, two important peptides involved in cardiovascular physiology. Plasma and cellular ACE levels in humans are influenced by an insertion (I)/deletion (D) polymorphism of the ACE gene, the ACE I/D polymorphism. Angiotensin converting enzyme gene polymorphism has been reported as a risk factor for the Acute Coronary Syndrome. The Acute Coronary Syndrome has become one of the top 10 causes of mortality in Taiwan. Hence, early diagnosis and prompt treatment are important issues for the emergency cardiovascular care.

Purpose: Since the relationship between ACE gene polymorphism and Acute Coronary Syndrome has not been reported in Taiwan, this study was directed at the analysis of the role of the ACE gene in cardiac diseases, particularly in emergency cases. Besides, early diagnosis of the Acute Coronary Syndrome presents a great challenge to emergency physicians because of the high mortality rate associated with this disease. The traditional serum cardiac markers including CK-MB, SOGT, and LDH may not achieve the goal of early diagnosis for minimizing the time to initiation of therapy. In this study, Troponin-T was used as a tool for the diagnosis of the Acute Coronary Syndrome, and its clinical roles in early diagnosis was studied.

Discussion: We believe that ACE gene polymorphism might be a significant risk factor for the Acute Coronary Syndrome in the Taiwanese population. Screening of the ACE gene polymorphism will become a significant aspect of Emergency Medicine in the near future.

Keywords: acute coronary syndrome; angiotensin converting enzyme; polymorphism; risk factors; Taiwan; troponin-T

P-14

The Pattern of Ambulance Arrivals in the Emergency Department of a General Hospital in Singapore — Is It Different from Walk-In Arrivals? What Is the Impact?

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Introduction: A patient brought into the Emergency