University Hospitals Bristol NHS
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Musculoskeletal Soft Tissue Clinic

Current Awareness Newsletter

March 2017 (Quarterly)

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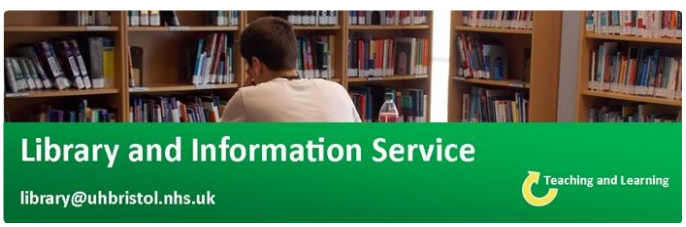

Training Sessions 2017

All sessions are 1 hour

March	(1pm - 2pm)
Tues 21st	**Critical Appraisal**
Weds 29th	**Interpreting Statistics**
April	(12pm - 1pm)
Thurs 6th	**Literature Searching**
Mon 10th	**Critical Appraisal**
Tues 18th	**Interpreting Statistics**
Thurs 27th	**Literature Searching**
May	(1pm-2pm)
Mon 8th	**Critical Appraisal**
Mon 15th	**Literature Searching**
Fri 26th	**Interpreting Statistics**
Wed 31st	**Critical Appraisal**

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A MILLION DECISIONS

Every day more than a million decisions are made across the NHS and healthcare sector

Under the Health and Social Care Act 2012 there is a responsibility for health services to ensure use of evidence obtained from research, with the aim of improving quality of care, patient experience and cost effectiveness.

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NICE National Institute for Health and Care Excellence

TopClosure Tension Relief System for wound closure - medtech innovation briefing (MIB97)

Source: National Institute for Health and Care Excellence - NICE - 07 March 2017

Calf muscle strain injuries in sport: a systematic review of risk factors for injury

Source: PubMed - 04 March 2017 - Publisher: British Journal Of Sports Medicine

Musculoskeletal Injury Profile of Circus Artists: A Systematic Review of the Literature

Source: PubMed - 01 March 2017 - Publisher: Medical Problems Of Performing Artists

Current Awareness Database Articles related to Musculoskeletal Soft Tissue

Below is a selection of articles recently added to the healthcare databases, grouped in the following categories:

- **Acute Soft Tissue injuries**
- **Musculoskeletal**
- **Sports Injuries**

If you would like any of the following articles in full text, or if you would like a more focused search on your own topic, then get in touch: library@uhbristol.nhs.uk

Acute soft tissue injuries

Characteristics of road traffic accident casualties admitted to a tertiary care hospital in Sri Lanka

Author(s): Fernando D.M.; Tennakoon S.U.; Samaranayake A.N.; Wickramasinghe M.

Source: Forensic science, medicine, and pathology; Mar 2017; vol. 13 (no. 1); p. 44-51

Publication Type(s): Journal: Article

Abstract: The mortality and morbidity of road traffic accidents (RTA) is increasing in the South Asian region, including Sri Lanka. Therefore, the demographic factors, types of vehicles involved, and the severity of injuries sustained in RTA was studied. Age, gender, and details of the incident of all patients admitted to hospital following a RTA, between January 2007 and August 2012, were obtained by interview. Following a medico-legal examination, the type and severity of injuries was categorized as, non-grievous, grievous, endangering life or fatal in the ordinary course of nature. Of the 579 RTA casualties examined, 72% were males, 28% females, and 26% were in the 20-29 year age group. There were 44% passengers, 32% drivers, and 20% pedestrians. Of the 440 vehicle occupants, 37% were on motor cycles, 28% in three wheelers, 13% in dual purpose vehicles and 11% in buses. Of the 114 pedestrians, 33% had been struck by motor cycles, 19% by three-wheelers and 17% by dual purpose vehicles. There was at least one soft tissue injury in 84%, whilst 45% had one or more fractures. In 85% of bicycle riders, the injuries were grievous, endangering life or fatal in the ordinary course of nature. A high proportion of young adults sustained grievous injuries due to RTA. Almost two thirds of the casualties resulted from motorcycle or three wheeler accidents. Laws limiting the number of passengers carried, installation of side doors, mandatory use of seat belts in three wheelers, and protective garments for motorcyclists are recommended.

Computational modelling of traumatic brain injury predicts the location of chronic traumatic encephalopathy pathology

Author(s): Ghajari M.; Hellyer P.J.; Sharp D.J.

Source: Brain; 2017; vol. 140 (no. 2); p. 333-343

Publication Type(s): Journal: Article

Available in full text at Brain - from Highwire Press

Abstract: Traumatic brain injury can lead to the neurodegenerative disease chronic traumatic encephalopathy. This condition has a clear neuropathological definition but the relationship between the initial head impact and the pattern of progressive brain pathology is poorly understood. We test the hypothesis that mechanical strain and strain rate are greatest in sulci, where neuropathology is prominently seen in chronic traumatic encephalopathy, and whether human neuroimaging observations converge with computational predictions. Three distinct types of injury were simulated. Chronic traumatic encephalopathy can occur after sporting injuries, so we studied a helmet-to-helmet impact in an American football game. In addition, we investigated an occipital head impact due to a fall from ground level and a helmeted head impact in a road traffic accident involving a motorcycle and a car. A high fidelity 3D computational model of brain injury biomechanics was developed and the contours of strain and strain rate at the grey matter-white matter boundary were mapped. Diffusion tensor imaging abnormalities in a cohort of 97 traumatic brain injury patients were also mapped at the grey matter-white matter boundary. Fifty-one healthy subjects served as controls. The computational models predicted large strain most prominent at the depths of sulci. The volume fraction of sulcal regions exceeding brain injury thresholds were significantly larger than that of gyral regions. Strain and strain rates were highest for the road traffic accident and sporting injury. Strain was greater in the sulci for all injury types, but strain rate was greater only in the road traffic and sporting injuries. Diffusion tensor imaging showed converging imaging abnormalities within sulcal regions with a significant decrease in fractional anisotropy in the patient group compared to controls within the sulci. Our results show that brain tissue deformation induced by head impact loading is greatest in sulcal locations, where pathology in cases of chronic traumatic encephalopathy is observed. In addition, the nature of initial head loading can have a significant influence on the magnitude and pattern of injury. Clarifying this relationship is key to understanding the long-term effects of head impacts and improving protective strategies, such as helmet design.

Temporal Profile and Severity Correlation of a Panel of Rat Spinal Cord Injury Protein Biomarkers

Author(s): Yang Z.; Yu D.; Wang P.; Lin F.; Bauer C.; Selig T.M.; Jaalouk E.; Weissman A.S.; Rathore D.S.; Romo P.; Zhang Z.; Wang K.K.W.; Bramlett H.M.; Wang M.Y.; Dalton Dietrich W.; Moghieb A.; Hayes R.L.

Source: Molecular Neurobiology; Mar 2017 ; p. 1-11

Publication Type(s): Journal: Article In Press

Abstract: In the USA, there are approximately 12,000 new cases of spinal cord injury (SCI) each year and some 1.2 million people living with paralysis due to SCI. Seven percent of them are paralyzed due to an accident or injury occurring while serving in the military. Here, we report a systematic study on protein biomarker candidates in a rat SCI model with either moderate or severe injury. Tissue, cerebrospinal fluid (CSF), and serum samples were obtained at 4 h, 24 h, and 7 days post-injury. The candidate biomarkers included axonal injury markers alphaII-spectrin breakdown products (SBDP150/145/120), neuronal cell body injury marker ubiquitin C-terminal hydrolase-L1 (UCH-L1), astrogliosis/astroglial injury markers S100 calcium-binding protein-beta (S100beta), glial fibrillary acidic protein (GFAP) and GFAP breakdown products (GBDPs), demyelination marker myelin basic protein (MBP), axonal injury marker phosphorylated neurofilament-H (pNF-H), and neuroinflammation marker interleukin-6 (IL-6). SBDP150/145, UCH-L1, GFAP, and S100beta were found as acute biomarkers with significantly elevated levels within 24 h. GBDP44, GBDP38, and pNF-H are acute and subacute biomarkers that were found to have increased at 4 h, 24 h, and 7 days. MBP and SBDP120 were considered subacute biomarkers which were only detectable at 7 days post-injury. These results not only allow us to gain important insight into the patho-mechanisms of SCI

but also showcase the possibility of using some of the protein biomarkers to track injury severity and disease progression and resolution. These biomarkers can potentially serve as tools that assist therapy development and clinical trials. Copyright © 2017 Springer Science+Business Media New York

Infection rates and treatment of low-velocity extremity gunshot injuries

Author(s): Nguyen M.P.; Savakus J.C.; O'Donnell J.A.; Prayson N.F.; Reich M.S.; Golob J.F.; McDonald A.A.; Como J.J.; Vallier H.A.

Source: Journal of Orthopaedic Trauma; Feb 2017

Publication Type(s): Journal: Article In Press

Abstract:OBJECTIVES:: To determine the rates of infection in low-energy gunshot wounds (GSWs) to the extremity. DESIGN:: Retrospective review. SETTING:: Level I trauma center.Patients/Participants: Patients (N=140) with at least 90-day follow-up for extremity-only low-energy GSW injuries from 2010-2014 were retrospectively reviewed. Treatment was recorded, including type and duration of antibiotics and details of non-operative and operative management. s MAIN OUTCOME MEASURES:: The rates of superficial and deep infections. RESULTS:: The overall infection rate was 15.7% (22 patients), and the deep infection rate was 3.6% (5 patients). Age, gender, and injury location were similar between the groups that did and did not receive antibiotic prophylaxis. Injury Severity Scores were higher in the group that did receive antibiotics. Regarding soft tissue-only injuries, antibiotic prophylaxis trended toward a lower rate of overall infection versus no antibiotic prophylaxis (6.1% vs. 25.9%, respectively, p=0.07). Multiple doses of antibiotics did not reduce the rate of infection when compared to a single dose (14.6% vs. 12.5%, respectively, p=1.00). No deep infections occurred in patients with non-operatively treated fractures, regardless of antibiotic administration. All operatively treated fractures received antibiotic prophylaxis and demonstrated superficial and deep infection rates of 15.1% and 5.7%, respectively. CONCLUSION:: Infections after low-energy extremity GSWs are infrequent. For soft tissue injuries without fracture, a single dose of intravenous antibiotics in the emergency room was associated with a lower rate of infection compared to no antibiotics. Operatively treated low-energy GSW fractures should receive standard perioperative antibiotics. LEVEL OF EVIDENCE:: Prognostic Level III.

Importance of initial management and surgical treatment after hydrofluoric acid burn of the finger.

Author(s): Han, Hyun Ho; Kwon, Byung Yeun; Jung, Sung No; Moon, Suk-Ho

Source: Burns (03054179); Feb 2017; vol. 43 (no. 1)

Publication Type(s): Academic Journal

Abstract: Occupational injuries to digits due to hydrofluoric acid (HFA) are frequently encountered. They have distinctive features, including intense pain, progressive tissue necrosis, and possible bone erosion. To minimize tissue damage, it is of great importance to execute prudent preoperative assessment and determine the correct surgical modality to reconstruct and maintain the function of the hand. However, proper protocols for fingers have not been presented in previous studies. Eight cases with HFA burn to digits were presented to the emergency room. Wounds were immediately irrigated with saline, calcium gluconate was applied topically to block destructive effects of fluoride ions. Blisters that could lead to progressive tissue destruction were debrided. A fish-mouth fasciotomy was performed and prostaglandin was administered intravenously to maintain maximal distal circulation. Wounds were evaluated daily for apparent demarcation for 6 or 7 days. Digits were reconstructed with free sensate second toe pulp-free flap to provide sufficient padding for the fingertip. All patients showed excellent recovery with stable flaps with acceptable external contour,

durable soft tissue padding, and full range of motion of affected joints. In conclusion, when a patient is admitted due to HFA exposure to the finger, early treatment including irrigation, topical neutralizers, and fasciotomy are of great importance to minimize tissue damage. In addition, a physician should wait at least 7days until the degree of damage to the tissue can be classified so that the physician can decide whether aggressive debridement should be proceeded. In case of deep layer injuries of weight bearing portions such as finger pulp, reconstruction techniques utilizing durable tissues such as partial second toe pulp free flap should be employed.

Musculoskeletal

Irrigation solutions in open fractures of the lower extremities: evaluation of isotonic saline and distilled water.

Author(s): Olufemi, Olukemi Temiloluwa; Adeyeye, Adeolu Ikechukwu

Source: SICOT-J; 2017; vol. 3 ; p. 7

Publication Type(s): Journal Article

Abstract:INTRODUCTIONOpen fractures are widely considered as orthopaedic emergencies requiring immediate intervention. The initial management of these injuries usually affects the ultimate outcome because open fractures may be associated with significant morbidity. Wound irrigation forms one of the pivotal principles in the treatment of open fractures. The choice of irrigation fluid has since been a source of debate. This study aimed to evaluate and compare the effects of isotonic saline and distilled water as irrigation solutions in the management of open fractures of the lower extremities. Wound infection and wound healing rates using both solutions were evaluated.METHODSThis was a prospective hospital-based study of 109 patients who presented to the Accident and Emergency department with open lower limb fractures. Approval was sought and obtained from the Ethics Committee of the Hospital. Patients were randomized into either the isotonic saline (NS) or the distilled water (DW) group using a simple ballot technique. Twelve patients were lost to follow-up, while 97 patients were available until conclusion of the study. There were 50 patients in the isotonic saline group and 47 patients in the distilled water group.RESULTSForty-one (42.3%) of the patients were in the young and economically productive strata of the population. There was a male preponderance with a 1.7:1 male-to-female ratio. The wound infection rate was 34% in the distilled water group and 44% in the isotonic saline group ($p = 0.315$). The mean time ± SD to wound healing was 2.7 ± 1.5 weeks in the distilled water group and 3.1 ± 1.8 weeks in the isotonic saline group ($p = 0.389$).CONCLUSIONSIt was concluded from this study that the use of distilled water compares favourably with isotonic saline as an irrigation solution in open fractures of the lower extremities.

Orthopedic injury in electric bicycle-related collisions.

Author(s): Li, Xiaoxuan; Yun, Zhe; Li, Xiaoxiang; Wang, Yucai; Yang, Tongtao; Zheng, Lianhe; Qian, Jixian

Source: Traffic injury prevention; May 2017; vol. 18 (no. 4); p. 437-440

Publication Type(s): Journal Article

Abstract:OBJECTIVEAlthough electric bicycle-related injuries have become the most common reason for hospitalization due to a road crash in China, no study has comprehensively investigated electric bicycle collisions and their impact on orthopedic injuries; such a study may provide evidence to

support a new road safety policy.METHODSA retrospective review of orthopedic injuries from electric bicycle collisions was performed in an urban trauma center. We collected variables including age, gender, location of fracture, presence of open or closed fractures, concomitant vascular, and neurologic injuries.RESULTSA total of 2,044 cases were involved in electric bicycle collisions. The orthopedic injury victims were predominantly male and middle aged. The most common orthopedic injury was a femur fracture. Open fractures frequently involved the forearm and tibia/fibula. Male patients were more likely to suffer from multiple fractures and associated injuries than female patients. Fewer patients age 60 years old or older wore helmets at the time of the accident compared to those in other age groups.CONCLUSIONSOrthopedic injuries from electric bicycle-related accidents cause patients substantial suffering that could lead to serious social consequences. Helmet use and protective clothing or similar safety gear, especially for electric bicycle users, should be required to provide greater protection.

When is it safe to reduce fracture dislocation of shoulder under sedation? Proposed treatment algorithm.

Author(s): Wronka, Konrad Sebastian; Ved, Abhimanyu; Mohanty, Khitish

Source: European journal of orthopaedic surgery & traumatology : orthopedie traumatologie; Apr 2017; vol. 27 (no. 3); p. 335-340

Publication Type(s): Journal Article

Abstract:INTRODUCTIONShoulder dislocations are common. It is known that incongruent shoulder should be promptly reduced. However, when associated with fracture of the proximal humerus, there is a clinical dilemma if reduction under sedation is a safe option. We wanted to establish when it is safe to attempt reduction of a shoulder fracture dislocation under sedation in emergency room.METHODSThis is a retrospective cohort study assessing consecutive patients presenting with a dislocation of a gleno-humeral joint with an associated fracture of the humerus between 2007 and 2015. The radiographs and patients' records were examined. The number of fragments according to Neer's criteria and size of fragments were recorded.RESULTSWe identified 102 patients who presented with 104 cases of fracture dislocation of shoulder joint. 10 of the dislocations were posterior, remainder were anterior. All posterior dislocations were reduced under general anaesthesia. Sixty-two anterior fracture dislocations had attempted reduction under sedation in emergency department. Eight of those were unsuccessful, and patient required general anaesthetic for further management. In five of those cases, significant displacement of humeral head in relation to the shaft after attempted reduction.CONCLUSIONWe propose pragmatic approach to the initial treatment of fracture dislocations of shoulder. In type I injury, where there is an anterior dislocation with greater tuberosity fracture, one should attempt a reduction under sedation; 94% of attempted reductions under sedation were successful and no fracture propagation occurred. In case of a type II injury, when the fracture is involving a surgical neck of the humerus with or without greater tuberosities fracture, our experience suggests that no attempt of reduction is undertaken under sedation and patient has general anaesthetic. Posterior dislocation with any fracture remains an unsolved problem, but in our series no attempt of reduction under sedation was made.

Shoulder arthroscopy combined to hardware removal in proximal humeral fractures: a series of 58 cases with a mean follow-up of 2 years.

Author(s): Maroun, Ch; Aliani, D; Hass, A; Werthel, J D; Vidil, Anne; Valenti, Ph

Source: European journal of orthopaedic surgery & traumatology : orthopedie traumatologie; Apr 2017; vol. 27 (no. 3); p. 317-321

Publication Type(s): Journal Article

Abstract:BACKGROUNDProximal humerus fractures are common injuries. Locking plates and anterograde medullary nails are the two most common fixation devices used when open reduction and internal fixation (ORIF) is indicated. Complications related to fracture and to hardware are numerous, especially shoulder stiffness. The goal of this study is to report the clinical outcomes of gleno-humeral arthroscopic arthrolysis combined with hardware removal.METHODSA total of 58 patients (25 men, 33 women) with a mean age of 58 years (24-79) were reviewed retrospectively. Forty of them were active workers (5 heavy workers), and 18 were retired. A total of 24 fractures were reported after sport accident, 26 after domestic accident, and 8 after high energy trauma. Thirty-four patients with 3 or 4 part fractures (fracture through the anatomic neck and tuberosities), 20 patients with two part (displaced surgical neck) fracture and 4 cases of fracture of the tuberosities were operated. We combined a gleno-humeral arthrolysis by arthroscopy and a removal of the hardware using the previous incision for the plate or by arthroscopy for the nail.RESULTSThe average follow-up was 23 months (range 6-60). Pain in Constant Murley score (CS) increased from 7.3 ± 3.8 points preoperatively to 13 ± 2.76 points post-operatively ($p < 0.05$). CS increased from 36.8 ± 12.25 points to 68.45 ± 15.24 points. Subjective shoulder value (SSV) score increased from 45.8 ± 16.6 to 78.23 ± 14.74. A gain in all active range of motion was reported (forward flexion: 37.6°, abduction: 39.5°, external rotation: 24.3°, internal rotation: from L5-S1 to T12-L1).CONCLUSIONSGleno-humeral arthrolysis by arthroscopy combined with hardware removal after proximal humerus ORIF in one step is safe and beneficial for post-traumatic stiffness of the shoulder. It provides significant pain relief and increase of range of motion and allows to treat associated articular pathology.

Horner's syndrome in traumatic first rib fracture without carotid injury; review of anatomy and pathophysiology

Author(s): Ofri A.; Malka V.; Lodh S.

Source: Trauma Case Reports; Apr 2017; vol. 8 ; p. 1-4

Publication Type(s): Journal: Article

Abstract: Case report of a 51 year old man involved in a motor vehicle accident presenting with multiple thoracic wall injury, including bilateral first rib fractures. He slowly developed a right sided Horner's syndrome due to a right paravertebral haematoma. The initial imaging did not display any carotid injury, however the developing right paravertebral haematoma was not initially reported. We review the anatomy and pathophysiology of this well-known but rare condition to show how first rib fractures should raise suspicion of Horner's syndrome irrespective of the presence or absence of any underlying blunt carotid injury. Copyright © 2017

Characteristics of Alcohol-Related Facial Fractures.

Author(s): Lee, Kai H.; Qiu, Michael

Source: Journal of Oral & Maxillofacial Surgery (02782391); Apr 2017; vol. 75 (no. 4); p. 786.e1

Publication Type(s): Academic Journal

Abstract: Purpose: Excessive indulgence in alcohol is a key causative factor in facial fractures especially in settings of interpersonal violence (IPV) and motor vehicle accidents. This study aims to explore characteristics of alcohol-involved facial fractures in the state of Victoria, Australia, over a 10-year period.Materials and Methods: This retrospective study analyzed data from the Victorian Admitted Episodes Dataset between 2004 and 2014; the Victorian Admitted Episodes Dataset is a standardized database reported by all Victorian hospitals for every admission. Admission details included patient age group and gender, fracture site (or sites), injury cause, and surgical management.Results: During the study period, 4,293 patients were treated for alcohol-related facial

fractures, 27% of whom were in the 20- to 29-year-old age group. The male-to-female ratio was 7:1. There was a rising trend over most of the study period. Of the patients, 36% had multiple facial bone fractures, followed by nasal and midface fractures (22% and 6%, respectively). IPV was the most frequent cause (38%), followed by falls and transport-related injuries (30% and 18%, respectively). Surgery was required in 16% of patients, and 62% were inpatients for 1 to 3 days. Concomitant fractures were frequently reported; 20% of patients had fractures of another site, 12% had skull fractures, and 4% had cervical spine fractures. There were statistically significant relationships between age group and gender, between gender and fracture site, and between fracture site and need for surgery (P < .05).Conclusions: This study reports a high incidence of alcohol-involved facial fractures in young men with IPV being a predominant cause. Such injuries often involve multiple facial bone fractures and severe concomitant trauma necessitating brief hospitalizations, but a high proportion of patients were treated nonsurgically.

A rare case of non-traumatic, multi-level, bilateral pedicle fractures of the lumbar spine in a 60-year-old patient.

Author(s): Schmid, Timo; Heini, Paul; Benneker, Lorin

Source: European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society; Mar 2017

Publication Type(s): Journal Article

Abstract:INTRODUCTIONWe report a 60-year-old patient who sustained non-traumatic, multi-level, bilateral lumbar pedicle fractures in the setting of unilateral lumbar spondylolysis. A possible fracture mechanism is evaluated and a review of the literature is presented. Whereas contralateral pedicle fractures of lumbar vertebrae with unilateral spondylosis are well described in young athletes, there is only one case report of multi-level, bilateral pedicle fractures of the lumbar spine in a young patient who sustained a high-impact motorcycle accident. To our knowledge, this is the first report of multi-level, bilateral pedicular fractures of the lumbar spine without a history of trauma.METHODSThe clinical case of a 60-year-old patient with lumbar pain radiating in both legs without antecedent trauma is presented. Besides an idiopathic primary adrenal failure, no further co-morbidities existed. Radiologic investigations showed acute bilateral pedicles' fractures of the lumbar vertebrae two to four (L2-4) and a unilateral spondylolysis L4-5. Dorsoventral instrumentation from L1 to L5 was performed in two steps.RESULTSThe patient had no neurological deficits at discharge. Perioperative cortisol substitution was arranged and continued in the course. At final follow-up after 6 years the patient was pain-free and radiographs confirmed complete fusion of L1-5 with mild degeneration of the adjacent segments.CONCLUSIONThe presented fracture pattern has not been described to date. Because of multi-level involvement, instability requiring operative stabilisation was presumed and confirmed during surgery.

Mean Arterial Blood Pressure Management of Acute Traumatic Spinal Cord Injured Patients during the Pre-Hospital and Early Admission Period.

Author(s): Tee, Jin W; Altaf, Farhaan; Belanger, Lise; Ailon, Tamir; Street, John; Paquette, Scott; Boyd, Michael; Fisher, Charles G; Dvorak, Marcel F; Kwon, Brian K

Source: Journal of neurotrauma; Mar 2017; vol. 34 (no. 6); p. 1271-1277

Publication Type(s): Journal Article

Abstract: The optimization and maintenance of mean arterial blood pressure (MAP) and the general avoidance of systemic hypotension for the first 5-7 days following acute traumatic spinal cord injury (tSCI) is considered to be important for minimizing secondary spinal cord ischemic damage. The characterization of hemodynamic parameters in the immediate post-injury stage prior to admission

to a specialized spine unit has not been previously reported. Here we describe the blood pressure management of 40 acute tSCI patients in the early post-injury phases of care prior to their arrival in a specialized spinal injury high dependency unit (HDU), intensive care unit (ICU), or operating room (OR). This study found that a significant proportion of these patients experience periods of relative hypotension prior to their admission to a specialized spinal unit. In particular, the mean calculated MAP was 78.8 mm Hg, with 52% of MAP measurements <80 mm Hg at primary receiving hospitals. Despite having a mean calculated MAP of 83.3 mm Hg in the emergency room of the tertiary hospital, 40% of the MAP measurements were <80 mm Hg. Although stringent monitoring and management of MAP may be facilitated and adhered to in a spinal HDU, ICU, or OR, it is important to recognize that acute traumatic SCI patients may experience many periods of relative hypotension prior to their arrival in such specialized units. This study highlights the need for education and awareness to optimize the hemodynamic management of acute SCI patients during the immediate post-injury period.

Compound elevated skull fractures: Review of literature.

Author(s): Prasad, G Lakshmi; Anmol, N

Source: Brain injury; Mar 2017 ; p. 1-6

Publication Type(s): Journal Article

Abstract:INTRODUCTIONCompound elevated skull fractures (CESF) are rare traumatic injuries. To date, only 27 cases have been reported.METHODSThe authors report three cases of CESF managed at their institute. All were middle-aged males. The mechanism was assault by sharp-edged objects in two and road traffic accident (RTA) in one case. One underwent simple suturing; debridement and decompressive craniectomy was done in the remaining two cases. Good and poor outcomes were noted in one case each, while one died. A literature review was performed to analyse all cases of CESF reported in English literature.RESULTSIncluding this one, a total of 30 cases were analysed. Mean age was 25.2 years, of which seven were aged < 18 years. There were 12 mild, five moderate, 11 severe HI cases and two cases were not detailed. Underlying injuries were seen in ~ 2/3 of cases. All, except two cases, underwent definitive surgery in the form of debridement with/without haematoma removal. Good-to-excellent outcomes were noted in 2/3 cases. There were 6/30 (20%) deaths noted. CNS infections and poor admission GCS were associated with increased mortality rates.CONCLUSIONSCESF are rare injuries. Early surgery in the form of debridement with broad-spectrum antibiotic coverage is recommended to prevent infectious complications and improve outcome. Outcome is dependent on three main factors-admission GCS score, intactness of duramater and post-operative CNS infections.

Cervical Spinal Cord Injury without Computed Tomography Evidence of Trauma in Adults: Magnetic Resonance Imaging Prognostic Factors.

Author(s): Martinez-Perez, Rafael; Munarriz, Pablo M; Paredes, Igor; Cotrina, Javier; Lagares, Alfonso

Source: World neurosurgery; Mar 2017; vol. 99 ; p. 192-199

Publication Type(s): Journal Article

Abstract:BACKGROUNDSpinal cord injury (SCI) without computed tomography evidence of trauma is underreported in adults and is considered a subtype of SCI with relatively good outcome. Despite this, few studies have been performed to determine specific imaging-related prognostic factors. Our objective is to describe the imaging characteristics of patients experiencing blunt cervical spine trauma with neurologic deficits, but without radiologic abnormalities and associated prognostic factors.METHODSA retrospective review of all adult patients with cervical SCI admitted to the emergency room of 2 university hospitals from January 2004 to December 2013 was performed.

Only patients with a magnetic resonance imaging (MRI) performed within 72 hours after trauma were included for further analysis. All patients with bony injury or traumatic malalignment were excluded. Data gathered on the remaining patients included demographics, mechanism of injury, severity of SCI, long-term patient outcome, improvement in neurologic condition, and MRI results.RESULTSThere were 48 patients who met the inclusion and exclusion criteria, and 40 who demonstrated improvement in the neurologic examination at follow-up. Disruption of either the anterior longitudinal ligament or ligamentum flavum and larger lesions in the MRI were predictors of lack of neurologic improvement.CONCLUSIONSEarly MRI has prognostic value in patients suffering SCI without computed tomography evidence of trauma. Lesion length is a powerful predictor of outcome in this subgroup of patients. Soft tissue injury plays a role in the severity of injury and the ability to recover in this subgroups of patients.

An Overview of Maxillofacial Trauma in Oral and Maxillofacial Tertiary Trauma Centre, Queen Elizabeth Hospital, Kota Kinabalu, Sabah.

Author(s): Lee, Chee Wei; Foo, Qi Chao; Wong, Ling Vuan; Leung, Yiu Yan

Source: Craniomaxillofacial trauma & reconstruction; Mar 2017; vol. 10 (no. 1); p. 16-21

Publication Type(s): Journal Article

Abstract: The aims of this study were to provide an overview of maxillofacial trauma and its relationship to patient's demographic data and alcohol consumption within the state of Sabah. It was a retrospective study of maxillofacial trauma cases treated by Oral and Maxillofacial Surgery Department, Queen Elizabeth Hospital, Kota Kinabalu, Sabah, from January 1, 2009, until December 31, 2013. A total of 630 maxillofacial trauma cases were included. Details of the trauma were collected from patients' record, including patients' cause of injuries, injuries suffered, treatment indications, and treatment received. Patients' demographic data (age, gender), alcohol consumption in relation to causes, and type of maxillofacial injury were analyzed. There were 538 male (85.4%) and 92 female (14.6%) patients (ratio: 5.8:1), with mean age of 31.0 years. Most common causes of maxillofacial injury were motor vehicle accident (MVA; 66.3%), followed by fall (12.4%) and assault (11.6%). Motorcyclists made up more than half of the total cases (53.1%). Cases referred were primarily due to soft-tissue injury (458 cases). Other cases were dentoalveolar and maxillofacial bone fractures. Treatment provided for the fractures included open reduction and internal fixation (22.9%), closed reduction (28.7%), and conservative management (48.4%). Toilet and suturing were done for all patients with soft-tissue injury. Maxillofacial trauma is a major problem in Sabah. It affects mostly males in the age group of 21 to 30 years. Most of the MVA patients were motorcyclists. Mandibular fracture with parasymphysis involvement recorded the highest number. Most of the patients preferred conservative management, probably due to financial and logistic issue.

Trauma injury in adult underweight patients: A cross-sectional study based on the trauma registry system of a level I trauma center.

Author(s): Hsieh, Ching-Hua; Lai, Wei-Hung; Wu, Shao-Chun; Chen, Yi-Chun; Kuo, Pao-Jen; Hsu, Shiun-Yuan; Hsieh, Hsiao-Yun

Source: Medicine; Mar 2017; vol. 96 (no. 10); p. e6272

Publication Type(s): Journal Article

Abstract: The aim of this study was to investigate and compare the injury characteristics, severity, and outcome between underweight and normal-weight patients hospitalized for the treatment of all kinds of trauma injury.This study was based on a level I trauma center Taiwan.The detailed data of 640 underweight adult trauma patients with a body mass index (BMI) of BMI ≥ 18.5 kg/m) were

retrieved from the Trauma Registry System between January 1, 2009, and December 31, 2014. Pearson's chi-square test, Fisher's exact test, and independent Student's t-test were performed to compare the differences. Propensity score matching with logistic regression was used to evaluate the effect of underweight on mortality.Underweight patients presented a different bodily injury pattern and a significantly higher rate of admittance to the intensive care unit (ICU) than did normal-weight patients; however, no significant differences in the Glasgow Coma Scale (GCS) score, injury severity score (ISS), in-hospital mortality, and hospital length of stay were found between the two groups. However, further analysis of the patients stratified by two major injury mechanisms (motorcycle accident and fall injury) revealed that underweight patients had significantly lower GCS scores (13.8 ± 3.0 vs 14.5 ± 2.0, P = 0.020), but higher ISS (10.1 ± 6.9 vs 8.4 ± 5.9, P = 0.005), in-hospital mortality (odds ratio, 4.4; 95% confidence interval, 1.69-11.35; P = 0.006), and ICU admittance rate (24.1% vs 14.3%, P = 0.007) than normal-weight patients in the fall accident group, but not in the motorcycle accident group. However, after propensity score matching, logistic regression analysis of well-matched pairs of patients with either all trauma, motorcycle accident, or fall injury did not show a significant influence of underweight on mortality.Exploratory data analysis revealed that underweight patients presented a different bodily injury pattern from that of normal-weight patients, specifically a higher incidence of pneumothorax in those with penetrating injuries and of femoral fracture in those with struck on/against injuries; however, the injury severity and outcome of underweight patients varied depending on the injury mechanism.

Trauma injury in adult underweight patients

Author(s): Hsieh C.-H.; Lai W.-H.; Chen Y.-C.; Hsu S.-Y.; Hsieh H.-Y.; Wu S.-C.; Kuo P.-J.

Source: Medicine (United States); Mar 2017; vol. 96 (no. 10)

Publication Type(s): Journal: Article

Abstract: The aim of this study was to investigate and compare the injury characteristics, severity, and outcome between underweight and normal-weight patients hospitalized for the treatment of all kinds of trauma injury. This study was based on a level I trauma center Taiwan. The detailed data of 640 underweight adult trauma patients with a body mass index (BMI) of BMI > 18.5kg/m 2) were retrieved from the Trauma Registry System between January 1, 2009, and December 31, 2014. Pearson's chi-square test, Fisher's exact test, and independent Student's t-test were performed to compare the differences. Propensity score matching with logistic regression was used to evaluate the effect of underweight on mortality. Underweight patients presented a different bodily injury pattern and a significantly higher rate of admittance to the intensive care unit (ICU) than did normal-weight patients; however, no significant differences in the Glasgow Coma Scale (GCS) score, injury severity score (ISS), in-hospital mortality, and hospital length of stay were found between the two groups. However, further analysis of the patients stratified by two major injury mechanisms (motorcycle accident and fall injury) revealed that underweight patients had significantly lower GCS scores (13.8 +/- 3.0 vs 14.5+/-2.0, P=0.020), but higher ISS (10.1+/-6.9 vs 8.4+/-5.9, P=0.005), in-hospital mortality (odds ratio, 4.4; 95% confidence interval, 1.69-11.35; P=0.006), and ICU admittance rate (24.1% vs 14.3%, P=0.007) than normal-weight patients in the fall accident group, but not in the motorcycle accident group. However, after propensity score matching, logistic regression analysis of well-matched pairs of patients with either all trauma, motorcycle accident, or fall injury did not show a significant influence of underweight on mortality. Exploratory data analysis revealed that underweight patients presented a different bodily injury pattern from that of normal-weight patients, specifically a higher incidence of pneumothorax in those with penetrating injuries and of femoral fracture in those with struck on/against injuries; however, the injury severity and outcome of underweight patients varied depending on the injury mechanism. Copyright © 2017 the Author(s).

Mortality following odontoid fractures

Author(s): Buchanan D.; Yates R.; Browne M.; Brown M.; Jasani V.; Ahmed E.N.

Source: Spine Journal; Mar 2017; vol. 17 (no. 3)

Publication Type(s): Journal: Conference Abstract

Abstract: Background Context: Odontoid fractures are common in elderly patients with limited physiological reserve. Purpose: The aim is to assess outcome of treatment of these fractures and their mortality at 30 days. Study Design/Setting: Retrospective review. Patient Sample: One hundred and ten patients seen between 2007 and 2015. Outcome Measures: mortality. Methods: Electronic patient records and radiological investigations were reviewed. Charlson comorbidity scores, mechanism of injury, type of fracture and associated injuries of the deceased and survivors were compared. Results: The mean age was 73.9 (17.9-98) years. Sixty four fractures were caused by a simple fall, 26 fell downstairs, 17 a road traffic accident and 3 fell from a height. Sixty eight were isolated fractures, 29 had other cervical spine fractures, 6 had lumbar or thoracic spine fractures and 7 had multiorgan injuries. There was 1 Anderson & D'Alonso type 1, 77 type 2 and 32 type 3 fractures. Ninety three were treated in a cervical orthosis, 15 in a halo device and 2 had operative fixation.There were 4 nonunions, none required delayed fixation. Forty three of the patients died; the 30 days mortality was 23%.The mean Charlson comorbidity index was 1.6 which was not different from those who survived (p=.73).There was no difference in the mechanism of injury(p=.16) and fracture type (p=.318) between those who died and those who survived. Conclusions: The thirty day mortality exceeded that for femoral neck fractures. Falling downstairs was exceeded only by simple falls as a cause of these fractures, use of bungalows by the elderly may be advisable. Non union of odontoid fractures was well tolerated.

High Complication Rate in Young Patients With High-Energy Intertrochanteric Femoral Fractures.

Author(s): AMINI, MICHAEL H.; FELDMAN, JOHN J.; WEINLEIN IV, JOHN C.; Weinlein, John C 4th

Source: Orthopedics; Mar 2017; vol. 40 (no. 2)

Publication Type(s): Academic Journal

Available in full text at Orthopedics - from ProQuest

Abstract: Although intertrochanteric femoral fractures in elderly patients are common injuries that have been studied extensively, little has been reported about high-energy intertrochanteric fractures in younger patients. This study examined the injury characteristics and outcomes of high-energy intertrochanteric fractures in patients younger than 65 years treated with either sliding hip screws (SHSs) or cephalomedullary nails (CMNs). A total of 37 patients younger than 65 years (mean age, 45 years) with high-energy intertrochanteric fractures and mean follow-up of 34 weeks were identified; 21 patients were treated with SHSs, and 16 patients were treated with CMNs. All fractures were AO/ Orthopaedic Trauma Association (OTA) fracture type 31A1 or 31A2. Injury characteristics, measures of surgical quality, treatment outcomes, and complications were compared. Despite high-energy mechanisms of injury, 84% of patients had AO/OTA type 31A1 fractures, 60% presented with an Injury Severity Score of 17 or higher, and 78% sustained other injuries. There were no significant differences in tip-apex distance (TAD), reduction quality, blood loss, or surgical time (P>.05) for fractures treated with SHSs or CMNs. The overall rate of major complications requiring revision surgery was 13.5%; this difference was not statistically significant (P=.36). Young patients with intertrochanteric fractures often have multisystem trauma; these fractures are difficult to reduce by closed means, and young patients are more prone to complications than older patients. In particular, varus collapse occurred at a high rate in young patients with intertrochanteric fractures treated with SHSs despite relatively simple fracture patterns, satisfactory TAD, and satisfactory reduction quality. [Orthopedics. 2017; 40(2):e293-e299.].

Outcomes Following Arthroscopic Repair of Posterior Labral Tears in Patients Older Than 35 Years.

Author(s): BATEMAN, DEXTER K.; BLACK, ERIC M.; LAZARUS, MARK D.; ABBOUD, JOSEPH A.

Source: Orthopedics; Mar 2017; vol. 40 (no. 2)

Publication Type(s): Academic Journal

Available in full text at Orthopedics - from ProQuest

Abstract: Although the results of arthroscopic management of posterior labral pathology in young athletes have been reported extensively in the literature, the clinical outcomes in older patients are unknown. This retrospective review included patients older than 35 years who underwent arthroscopic posterior labral repair. Functional outcome scores were collected, and subgroup analyses were performed to evaluate the impact of patient-specific factors. Forty-three patients met the inclusion criteria; average follow-up was 36.9 months (range, 24-54 months). Mean patient age at the time of surgery was 40.9 years (range, 35-57 years). Average outcome scores at final follow-up were Quick Disabilities of the Arm, Shoulder and Hand Scale (QuickDASH), 19±22; Simple Shoulder Test (SST), 9.9±3; Western Ontario Shoulder Instability Index (WOSI), 601±546; and Single Assessment Numeric Evaluation (SANE), 79.6%±23.4%. No significant differences in outcomes were observed in patients with preoperative symptomatic instability, active workers' compensation claims, or traumatic injury (P>.05). The presence of intraoperatively definable chondral damage (Outerbridge grade III or higher) was associated with significantly worse final functional outcomes (QuickDASH: 29 vs 11.9, P=.03; SST: 8.5 vs 10.9, P=.02; WOSI: 875 vs 407, P=.01; and SANE: 70.6% vs 86%, P=.05). One patient (2%) experienced a minor postoperative complication, and 3 patients (7%) required subsequent procedures: 2 total shoulder arthroplasties and 1 revision labral repair. The results of arthroscopic posterior labral repair in patients older than 35 years were variable and worse than those previously reported in younger patients. The presence of chondral damage at the time of the index procedure was a negative predictive factor. [Orthopedics. 2017; 40(2):e305-e311.].

A Novel Screening Technique for Ulnar-Sided Carpometacarpal Dislocations.

Author(s): POTINI, VISHNU C.; GIBSON, PETER D.; KAICHENG WU; KANG LI; VIRAK TAN; Wu, Kaicheng; Li, Kang; Tan, Virak

Source: Orthopedics; Mar 2017; vol. 40 (no. 2)

Publication Type(s): Academic Journal

Available in full text at Orthopedics - from ProQuest

Abstract: Diagnosing ulnar-sided carpometacarpal joint dislocation is difficult, and more than half of injuries are missed on initial examination. The authors hypothesized that measuring the angle between the capitate and the metacarpals (capitate-metacarpal angle) on a plain radiograph would provide a simple, reliable tool to aid in the diagnosis of ulnar-sided carpometacarpal dislocation. This study retrospectively reviewed patients who underwent surgery for ulnar-sided carpometacarpal dislocation (study group). Two authors identified the contour of the capitate and the second, fourth, and fifth metacarpals on plain radiographs. The control group consisted of patients who had radiographs and no bony carpal or metacarpal pathology. Information on the contour of each bone was entered into MATLAB, version 8.5, software (MathWorks, Natick, Massachusetts), which calculated the 2-dimensional angles. A 3-dimensional model based on computed tomography scan data was used to obtain a "true lateral" image to account for variable rotation on plain radiographs. With the use of conventional lateral hand radiographs, the average capitate-metacarpal angle in the control group was 10° compared with 19° in the study group. Using a screening value of 15° on plain radiographs, the sensitivity of the capitate-metacarpal angle was 0.85 and the specificity was 0.79.

Both 2-dimensional and 3-dimensional measurements showed that the angle between the capitate and the lesser metacarpals is a reliable screening tool for carpometacarpal dislocation. During evaluation of patients with posttraumatic hand pain, an increased capitate-metacarpal angle may indicate the need for advanced imaging studies to further evaluate the carpometacarpal joints. [Orthopedics. 2017; 40(2):e352-e356.].

A Rare Entity: Traumatic Thoracic Aortic Injury in a Patient with Aberrant Right Subclavian Artery.

Author(s): Patel, Hiten Mohanbhai; Banerjee, Shubhabrata; Bulsara, Shahzad; Sahu, Tapish; Sheorain, Virender K; Grover, Tarun; Parakh, Rajiv

Source: Annals of vascular surgery; Feb 2017

Publication Type(s): Journal Article

Abstract:BACKGROUNDAberrant right subclavian artery is an uncommon entity incidence ranging from 0.5 to 2.5%. Management of thoracic aortic injury in the presence of such anomalies can be a challenge. We present here a case of traumatic aortic injury, which was incidentally found to have an asymptomatic aberrant right subclavian artery. The patient was managed by an endovascular repair of thoracic aortic injury with an endograft and a right carotid to subclavian artery bypass as a hybrid procedure.METHODSA 40-year male patient was brought to the emergency in shock with an alleged history of road traffic accident an hour back. After initial resuscitation as per advance trauma life support protocol, imaging revealed thoracic aortic injury with aberrant right subclavian artery with multiple rib and bilateral humerus fracture. After primary stabilization of arm fractures, the patient was shifted to a hybrid operation room. As the aortic injury was within 10 mm of the origin of both subclavian arteries, it was decided to cover the origin of both subclavian arteries and land the endograft distal to the left carotid artery origin. Since there was a right dominant vertebral artery on imaging, right carotid to right subclavian artery bypass was done with expanded polytetrafluoroethylene graft to prevent posterior circulatory stroke along with thoracic endovascular aortic repair to seal the thoracic aortic injury.RESULTSAfter endovascular repair of thoracic aortic injury, left subclavian artery perfusion was maintained through left vertebral artery; and hence, revascularization of left subclavian artery was deferred. After management of all fractures, the patient was discharged 3 weeks after the date of admission without any complications. At 6 months follow-up, patient was stable and images showed patent bypass graft and sealed aortic injury.CONCLUSIONSIn a trauma setting with multiple injuries, hybrid procedure with a thoracic endograft is associated with low mortality and morbidity; hence, it is the treatment of choice for thoracic aortic injury over open surgical repair. A hybrid suite can be life and time saving in situations which mandate simultaneous endovascular repair along with surgical revascularization when indicated, especially in cases with aberrant aortic arch anatomy.

Delayed Recognition of Thoracic and Lumbar Vertebral Compression Fractures in Minor Accident Cases.

Author(s): Hatgis, Jesse; Granville, Michelle; Jacobson, Robert E

Source: Cureus; Feb 2017; vol. 9 (no. 2); p. e1050

Publication Type(s): Journal Article

Abstract: Osteoporotic vertebral compression fractures (VCFs) in the elderly are commonly diagnosed after a minor fall or trauma; however, the majority of these patients have either been previously evaluated for osteoporosis or are already under some form of medical treatment for osteoporosis at the time of the fall. Although accidents are a known cause of VCFs, these fractures are too often undiagnosed. In reviewing a group of patients seen after minor falls or automobile accidents who were complaining of general spine pain, we found a smaller subgroup with previously

undiagnosed VCFs. These fractures were also the initial signs of a previously unrecognized osteoporotic process. Initial diagnosis, treatment, and therapy were usually focused on other spinal segments (i.e. mainly the lumbar spine) until both the VCF and the osteoporosis were identified. The purpose of this report is to raise awareness and discuss the steps for improved diagnosis of osteoporotic VCFs. A retrospective analysis was conducted on a large group of patients from one pain/accident clinic in a 24 month period. These patients were diagnosed with VCFs subsequent to the initial evaluation due to either persistent pain after conservative therapy or complaints of pain beyond the original injured area (i.e. typically the lumbar spine). At this point, a more detailed history was taken, including any past treatment for osteoporosis, or previous falls or injury to exclude the possibility of pre-existing fractures. A more focused examination of the painful area was completed, consisting of percussion at the fracture site identified on magnetic resonance imaging (MRI) or computed tomography (CT) scan. If possible, a bone scan was ordered to separate acute and subacute traumatic fractures from old/chronic fractures. Additionally, we surveyed two other similar pain/accident clinics who saw a comparable number and population of patients diagnosed with VCFs within a 24 month period to make a comparison of the number of VCFs they identified. Ten out of approximately 2700 patients seen over a 24 month period sustained acute thoracic or lumbar VCFs during a minor accident and were not previously diagnosed with osteoporosis. Since approximately 30% of the 2,700 patients had new accidents, 10 out of 800 new patients (1.25%) were found to have VCFs without a known history of osteoporosis. Two other surveyed pain/accident, clinics saw a similar number and population of patients in the same time period; however, each only diagnosed two or three VCFs while examining a similar number of patients in the clinic. In these two other clinics, a much lower percentage (0.3%) of patients were diagnosed with new VCFs. Awareness of the possibility of osteoporotic VCFs is the first step in detecting them. This study reveals the presence of a small but real risk of overlooking osteoporotic VCFs in minor trauma cases. When necessary, repeat or obtain better quality imaging in spinal segments affected by persistent pain. The thoracolumbar junction (i.e. T12 & L1 vertebrae) is especially at risk for sustaining VCFs. The delayed recognition of these VCFs and the patient's underlying osteoporosis after minor accident cases could present a major problem, as the critical time for patients to receive the proper medical or surgical treatments responsible for correcting and preventing further spinal deformity and pain has been reduced.

Characteristics and clinical outcomes of head-injured cyclists with and without helmets in urban and rural areas of Taiwan: A 15-year study.

Author(s): Kuo, Chia-Ying; Chiou, Hung-Yi; Lin, Jia-Wei; Tsai, Shin-Han; Lin, Mau-Roung; Chiang, Yung-Hsiao; Lin, Chien-Min; Chu, Shu-Fen; Liou, Tsan-Hon; Chiu, Wen-Ta

Source: Traffic injury prevention; Feb 2017; vol. 18 (no. 2); p. 193-198

Publication Type(s): Journal Article

Abstract:OBJECTIVEBicycle riding is increasingly popular in Taiwan, but the number of cyclists injured and cyclists' death rates are both increasing. The aim of this study was to investigate the different characteristics and clinical outcomes of traffic accident-related head injuries among cyclists in urban and rural areas.METHODSRecords of 812 patients (533 urban and 279 rural) admitted to 27 hospitals in Taipei City and Hualien County as the result of a traumatic head injury while bicycling between 1998 and 2013 were retrieved for study. Demographics, details about the accident, protective helmet use, and clinical outcomes were then subjected to analysis.RESULTSUrban victims were more likely to be injured during morning and early evening rush hours and rural victims during the day; most urban victims were between 19 and 34 years of age and injured in the slow lane; rural victims tended to be younger or older and were injured in the fast lane (all P ≤.001). Riders who wore a helmet were less likely to suffer loss of consciousness (odds ratio [OR] = 0.31), amnesia (OR = 0.069), neurological disorders (OR = 0.205), or facial fractures (OR = 0.369). Older age, more severe head

injuries, and bicycle-motor vehicle collisions influenced the severity of symptoms on admission and the residual effects at discharge.CONCLUSIONSDifferences in the characteristics of injuries in urban and rural areas and the utilization of protective helmets may help government authorities adopt appropriate policies to promote safer and more enjoyable cycling.

Bilateral asymmetrical hip dislocation with one side obturator intra-pelvic dislocation. Case report.

Author(s): Abdulfattah Abdullah, Abdullah Saad; Abdelhady, Ayman; Alhammoud, Abduljabbar

Source: International journal of surgery case reports; Feb 2017; vol. 33 ; p. 27-30

Publication Type(s): Journal Article

Abstract:INTRODUCTIONHip dislocations usually occur as a result of motor vehicle accidents and require high energy trauma. Bilateral hip dislocations are rare compared to unilateral ones. Most reported cases are asymmetrical simultaneous bilateral anterior and posterior dislocations.CASE PRESENTATIONThis case report describes a 32years female passenger who was involved in road traffic accident and had bilateral asymmetrical hip dislocations with one side posterior and the other side obturator intra-pelvic dislocation. Concentric reduction was achieved by closed reduction of both sides under general anesthesia but the patient required skeletal traction applied to the unstable side for three weeks.DISCUSSIONHip dislocation is considered an orthopedic emergency and should be reduced as soon as possible to decrease rate of complications. Since hip dislocation usually occurs with high energy trauma so looking for associated injuries is of paramount importance and assessing such patients should be done according to advanced trauma life support.CONCLUSIONObturator intra-pelvic hip dislocation is challenging case and can be treated by closed reduction.

What are the differences in injury patterns of young and elderly traffic accident fatalities considering death on scene and death in hospital?

Author(s): Heinrich, Daniela; Holzmann, Christopher; Wagner, Anja; Fischer, Anja; Pfeifer, Roman; Graw, Matthias; Schick, Sylvia

Source: International journal of legal medicine; Feb 2017

Publication Type(s): Journal Article

Abstract: Older traffic participants have higher risks of injury than the population up to 65 years in case of comparable road traffic accidents and further, higher mortality rates at comparable injury severities. Rib fractures as risk factors are currently discussed. However, death on scene is associated with hardly survivable injuries and might not be a matter of neither rib fractures nor age. As 60% of traffic accident fatalities are estimated to die on scene, they are not captured in hospital-based trauma registries and injury patterns remain unknown. Our database comprises 309 road traffic fatalities, autopsied at the Institute of Legal Medicine Munich in 2004 and 2005. Injuries are coded according to Abbreviated Injury Scale, AIS© 2005 update 2008 [1]. Data used for this analysis are age, sex, site of death, site of accident, traffic participation mode, measures of injury severity, and rib fractures. The injury patterns of elderly, aged 65+ years, are compared to the younger ones divided by their site of death. Elderly with death on scene more often show serious thorax injuries and pelvic fractures than the younger. Some hints point towards older fatalities showing less frequently serious abdominal injuries. In hospital, elderly fatalities show lower Injury Severity Scores (ISSs) compared to the younger. The number of rib fractures is significantly higher for the elderly but is not the reason for death. Results show that young and old fatalities have different injury patterns and reveal first hints towards the need to analyze death on scene more in-depth.

Database: Medline

Cactus Spine Wounds: A Case Report and Short Review of the Literature.

Author(s): Dieter, Raymond A; Whitehouse, Lisa R; Gulliver, Rebecca

Source: Wounds : a compendium of clinical research and practice; Feb 2017; vol. 29 (no. 2); p. E18

Publication Type(s): Journal Article

Abstract:INTRODUCTIONCactus plants are commonly seen in arid southwestern regions of the United States. Due to their ready availability, they have become a popular houseplant. The spines or glochidia can easily puncture the skin with only minor pressure (ie, bumping or touching the cactus). Removal of the offending spine is difficult, even with tweezers.CASEAn 18-year-old woman initially self-removed the spines, and marked discomfort and intense erythematous reaction developed within 8 to 10 hours. Patient presented to the emergency room at Mercy Hospital and Trauma Center (Janesville, Wisconsin), where spine removal was unsuccessful.RESULTSFollowing emergency room discharge, she had difficulty walking from pain and swelling and was advised to use heat packs, take amoxicillin/clavulanic acid, and rest with her leg elevated for another 7 days along with using eye drops for eye irritation. The lesions slowly improved over the next several months.CONCLUSIONThe case of multiple barrel cactus spine injuries with severe pain and swelling is presented herein as well as a review of the treatment options and complications of cactus spine injuries.

Superior dislocation of the patella: a pathognomonic finding and review of literature.

Author(s): van Egmond, P W; Vermeulen, M C; van Dijke, C F; Graat, H C A

Source: Skeletal radiology; Feb 2017; vol. 46 (no. 2); p. 259-264

Publication Type(s): Journal Article

Abstract:A 59-year-old woman with a painful right knee that became locked in extension after a trivial trauma was seen at the emergency room. This was caused by unloaded hyperextension in bed. She was diagnosed with a superior dislocation of the patella. A closed reduction was performed, but a recurrent episode was seen within a week. An arthroscopy was performed, in which the causative osteophytes were removed. In the 12-month follow-up after treatment, no recurrence was seen. A superior dislocation of the patella is caused by patellofemoral osteophytes that interlock. This can cause a degenerative knee to become locked in extension. Beside interlocking osteophytes of the patella and the distal femur, the superior part of the patella is tilted away from the femur. This is caused by the pull of the patella tendon and the simultaneous relaxation of the quadriceps tendon. This is a pathognomonic finding on radiographs that, to the best of our knowledge, has been identified but not been appreciated as such in previous reports. As illustrated in this report, a superior dislocation of the patella can easily be recognized on physical examination and radiographic imaging alone when familiar with the specific abnormalities. This will reduce unnecessary diagnostic imaging studies and delay in treatment. This case report illustrates a recurrent case of superior dislocation of the patella. We summarize and evaluate previous reports, discuss trauma mechanisms, physical examination, classification, and treatment including recurrent cases. After reading this case report the reader will be able to diagnose a superior dislocation of the patella with near certainty on physical examination and radiographic imaging of the knee alone.

Database: Medline

Injury Threshold of Rectus Capitis Muscles at the Atlanto-occipital Joint.

Author(s): Hallgren, Richard C

Source: Journal of manipulative and physiological therapeutics; Feb 2017; vol. 40 (no. 2); p. 71-76

Publication Type(s): Journal Article

Abstract:OBJECTIVEThe objective of this study was to collect muscle stiffness data from the 4 rectus capitis (RC) muscles to better understand their role in stabilizing the atlanto-occipital joint. The passive load displacement properties of these muscles have not been previously reported.METHODSRectus capitis muscles were removed from 3 unembalmed head and neck specimens. Passive length-force (stiffness) data were collected by using a servo-controlled hydraulic test machine. Multivariate analysis of variance with Bonferroni correction was used to assess the significance of the differences among passive stiffness within the elastic region of each muscle and the load and strain at the yield points.RESULTSRectus capitis lateralis (RCL) muscles failed at significantly higher levels of load and strain compared with the other 3 pairs of muscles. Passive stiffness of both RCL and RC anterior muscles was significantly higher than the other 2 pairs of muscles.CONCLUSIONThe anatomic location of the RCL muscles, along with their high levels of passive stiffness, would be expected to facilitate the maintenance of atlanto-occipital joint congruence during normal daily activities. The level at which the RC posterior minor muscles failed could put them at risk of a strain injury during a rear end motor vehicle accident. Diagnostic and treatment protocols that apply forces to the upper cervical spine should be tailored to consider the patient's age, gender, and history of previous injuries to avoid overstretching RC muscles.

The comparison of radiography and point-of-care ultrasonography in the diagnosis and management of metatarsal fractures.

Author(s): Kozaci, Nalan; Ay, Mehmet Oguzhan; Avci, Mustafa; Beydilli, Inan; Turhan, Sadullah; Donertas, Eda; Ararat, Ertan

Source: Injury; Feb 2017; vol. 48 (no. 2); p. 542-547

Publication Type(s): Journal Article

Abstract:OBJECTIVEIt was aimed to compare the efficacy of point-of-care ultrasonography (POCUS) with radiography in the diagnosis and management of metatarsal fracture (MTF).METHODSPatients aged 5-55 years admitted to emergency room due to low-energy, simple extremity trauma and had a suspected MTF, were included in this prospective study. Patients were evaluated by two different emergency physicians in the emergency room. The first physician performed POCUS examination. Second physician evaluated the radiography images. The obtained results were compared.RESULTSSeventy-two patients were enrolled in the study. Fracture was detected in 39% by radiography and in 43% of patients by POCUS. Multiple MTFs were identified in 5% of patients. Compared with radiography, POCUS had a sensitivity of 93%, specificity of 89%, positive predictive value of 84% and a negative predictive value of 95% (95% CI, 83-98%) in the detection of fractures. While soft tissue edema was seen in 61% of patients by POCUS, soft tissue edema with hematoma was detected in 14%. Compared with radiography, the sensitivity and specificity of POCUS in the decision for surgery were 100% and 98% (95% CI, 97-100%), respectively, whereas its sensitivity and specificity were both 100% in the decision for reduction.CONCLUSIONIn our study, we demonstrated that POCUS could be applied with success in the diagnosis and treatment of MTF in low-energy injuries. POCUS can be used as an alternative to radiography in the emergency rooms due to being easy to learn and practice and availability of soft tissue examination along with bone tissue examination.

Cervical medullary lesion in subjects older than 60 years. does surgery add anything?

Author(s): Cruz Morande S.; Barriga Martin A.; De Juan Garcia J.; Sanz Martin De La Mota D.

Source: European Spine Journal; Feb 2017; vol. 26 (no. 2); p. 587

Publication Type(s): Journal: Conference Abstract

Abstract: Objective and introduction: Assess if early surgical decompression is associated with better functional results. Review the incidence, type of lesion, risk factors, and functional results in patients

older than 60 years. Patients and methods: Descriptive retrospective study in patients older than 60 years who were admitted in our center due to acute cervical medullary lesion during 2009-2013, with a minimum 1-year follow-up. Demographic data, type and cause of the lesion, presence of canal stenosis, surgical interventions, progression of neurological injury (American Spinal Injury Association-ASIA), and functional capacity at discharge with the Spinal Cord Independence Measure (SCIM II) were assessed. Results: Seventy-six (76) subjects aged over 60 years with cervical medullary lesion (87% from total medullary lesions in this age group) were included in the study. Mean age was 70.1 years (SD 7.6 years) (85.5% male). Causes of the lesions were fall from standing position (53%), traffic accident (29%), fall from a height (10%), and bicycle accident (8%). Level of medullary lesion was C4 (47%), C5 (32%), and C3 (8%). Table 1 shows the ASIA scores at admission and discharge. 62% study patients had canal stenosis (CT-MR); 64.5% underwent surgery, 19% before 24 h, 24% between 24 and 72 h, and 54% 72 h post-accident (20 patients underwent surgery after seven days). Anterior approach was used in 43% of the cases, posterior in 50%, and combined in 7%. No differences were determined in the level of neurological improvement between patients who underwent surgery and those who did not, or between those that underwent early (0.005). Conclusions: The cervical spine is the primary location for medullary lesions in subjects older than 60 years and over 50% are caused by minor trauma. Regarding neurological recovery, no differences were found between performing or not a surgery, or preform an early or delayed surgery. Stenosis of the spine canal due to arthrosis is an underlying factor for medullary lesion with minimal trauma. (Table Presented) .

Blunt traumatic diaphragmatic injury: A diagnostic enigma with potential surgical pitfalls.

Author(s): Mahamid, Ahmad; Peleg, Kobi; Givon, Adi; Alfici, Ricardo; Olsha, Oded; Ashkenazi, Itamar

Source: American Journal of Emergency Medicine; Feb 2017; vol. 35 (no. 2); p. 214-217

Publication Type(s): Academic Journal

Abstract: Background: Blunt traumatic diaphragmatic injury (BTDI) is an uncommon injury and one which is difficult to diagnose. The objective of this study was to identify features associated with this injury.Methods: This was a retrospective study based on records of 354307 blunt trauma victims treated between 1998 and 2013 collected by the Israeli National Trauma Registry.Results: BTDI was reported in 231 (0.065%) patients. Motor vehicle accidents were responsible for 84.4% of the injuries: 97 (42.0%) were reported as drivers; 54 (23.4%) were passengers; 34 (14.7%) were pedestrians hit by cars; and 10 (4.3%) were on motorcycles. There were more males than females (2.5:1) compared with blunt trauma patients without BTDI (p<.001). Patients with BTDI were significantly younger than blunt trauma patients without BTDI (p<.001). ISS was 9-14 in 5.2%, 16-24 in 16.9%, 25-75 in 77.9%. Urgent surgery was performed in 62% of the patients and 79.7% had surgery within 24h of admission. Mortality was 26.8%. Over 40% of patients with BTDI had associated rib, pelvic and/or extremity injuries. Over 30% had associated spleen, liver and/or lung injuries. Nevertheless, less than 1% of patients with skeletal injuries and less than 2.5% with solid organ injuries overall had associated BTDI. Despite hollow viscus injury being less prevalent, up to 6% of patients with this injury had associated BTDI.Conclusions: BTDI is infrequent following blunt trauma. Hollow viscus injuries were more predictive of BTDI than skeletal or solid organ injuries.

Sports Injuries

Severe injuries associated with skiing and snowboarding: A national trauma data bank study.

Author(s): de Roulet, Amory; Inaba, Kenji; Strumwasser, Aaron; Chouliaras, Konstantinos; Lam, Lydia; Benjamin, Elizabeth; Grabo, Daniel; Demetriades, Demetrios

Source: The journal of trauma and acute care surgery; Apr 2017; vol. 82 (no. 4); p. 781-786

Publication Type(s): Journal Article

Abstract:BACKGROUNDInjuries after skiing and snowboarding accidents lead to an estimated 7,000 hospital admissions annually and present a significant burden to the health care system. The epidemiology, injury patterns, hospital resource utilization, and outcomes associated with these severe injuries need further characterization.METHODSThe National Trauma Data Bank was queried for the period 2007 to 2014 for admissions with Injury Severity Score > 15 and International Classification of Diseases Codes-9th Revision codes 885.3 (fall from skis, n = 1,353) and 885.4 (fall from snowboard, n = 1,216). Demographics, emergency department data, diagnosis and procedure codes, and outcomes were abstracted from the database.RESULTSSevere (Injury Severity Score > 15) ski-associated and snowboard-associated injuries differed with respect to age distribution (median age, 38; interquartile range, 19-59 for skiers and median age, 20; interquartile range, 16-25 for snowboarders; p < 0.001) and sex (78.9% and 86.4% males, respectively, p < 0.001). Traumatic brain injury was common for both sports (56.8% of skiers vs. 46.6% of snowboarders, p < 0.001). Injuries to the spine (28.9%), chest (37.6%), and abdomen (35.0%) were also common. Eighty percent of patients used emergency medical services (50% ambulance, 30% helicopter) with a median emergency medical services transport time of 84 minutes. 50.8% of patients required interhospital transport. 43.2% of injuries required surgical intervention (21.3% orthopedic, 12.5% neurosurgical, 10.5% thoracic, 7.8% abdominal). Median hospital length of stay was 5.0 days. 60.0% of patients required intensive care unit admission with median intensive care unit length of stay 3.0 days. Overall mortality was 4.0% for skiers and 1.9% for snowboarders.CONCLUSIONSevere injuries after ski and snowboard accidents are associated with significant morbidity and mortality. Differences in injury patterns, risk factors for severe injury, and resource utilization require further study. Increased resource allocation to alpine trauma systems is warranted.LEVEL OF EVIDENCEPrognostic/epidemiologic, level III.

Interaction between different sports branches such as taekwondo, box, athletes and serum brain derived neurotrophic factor levels.

Author(s): Oztasyonar, Yunus

Source: The Journal of sports medicine and physical fitness; Apr 2017; vol. 57 (no. 4); p. 457-460

Publication Type(s): Journal Article

Abstract:BACKGROUNDThis study aimed to compare serum brain-derived neurotrophic factor (BDNF) levels "which contributes in both neuron development/regeneration" between combat sport braches, which requires high attention and concentration and can lead micro and macro brain trauma, and athleticism, which requires durability in competition.METHODSThe study design included 4 groups. Group 1 had sedentary participants, and group 2 athletes (middle and long runners) who exercised for two 2-hour daily training sessions 6 days a week. group 3 included boxers, and group 4 taekwondo fighters. We investigated changes in the blood BDNF levels of taekwondo fighters, boxers, and athletes before and after training and compared them among each other and with measurements of sedentary controls.RESULTSAll athletes had higher basal BDNF levels than sedentary participants. Boxers and taekwondo athletes had especially high basal BDNF

levels. When we compared different sports branch each other Pre- and post- training BDNF values are ranked as follows: taekwondo > boxing > athletes > sedentary. In sport branches such as combat sports and athletes, serum BDNF levels have been demonstrated to be higher after training than before. In addition, serum BDNF levels were higher in taekwondo fighters and boxers than athletes.CONCLUSIONSBDNF might have a role in the protection mechanism against brain damage or contributes in occurrence and maintenance of high attention and concentration especially among combat sports.

Clavicular Refracture at the Site of Angular Malunion in Young Athletes.

Author(s): Furey, Matthew J; Zdero, Radovan; McKee, Michael D

Source: Journal of orthopaedic trauma; Apr 2017; vol. 31 (no. 4); p. e130

Publication Type(s): Journal Article

Abstract:OBJECTIVEThe treatment of midshaft clavicle fractures has, in the last 2 decades, shifted markedly towards operative management. Prospective trials have defined accepted clinical and radiographic indications for the surgical management of clavicle fractures. This report documents 3 cases of clinically united angular malunion of the midshaft clavicle in young athletes that subsequently refractured to highlight angular deformity in the absence of displacement as a potential indication for surgical fixation.DESIGNCase series.SETTINGA level 1 trauma centre.PATIENTS/PARTICIPANTSThree young athletic patients with angular malunion of the midshaft clavicle who experienced refracture, requiring surgical fixation.INTERVENTIONSurgical fixation of midshaft clavicle fracture, as treatment for refracture after angular malunion.RESULTSAll 3 patients required subsequent surgical fixation of their midshaft clavicle fracture, correcting the angular malunion and restoring shoulder function.CONCLUSIONSMidshaft clavicular fractures that malunite with significant angulation in the absence of displacement represent a risk for subsequent refracture. For this reason, angular deformity should be considered as a potential indication for surgical fixation in acute clavicular fractures.LEVEL OF EVIDENCETherapeutic Level IV. See Instructions for Authors for a complete description of levels of evidence.

Occult subaxial cervical disco-ligamentous injuries in computer tomography negative trauma patients.

Author(s): Lin, Jiun-Lih; Samuel, Sumant; Gray, Randolph; Ruff, Stephen; Vasili, Con; Cree, Andrew; Hartin, Nathan

Source: European spine journal : official publication of the European Spine Society, the European Spinal Deformity Society, and the European Section of the Cervical Spine Research Society; Apr 2017; vol. 26 (no. 4); p. 1277-1283

Publication Type(s): Journal Article

Abstract:PURPOSEDue to lack of cervical clearance consensus in literature and the devastating consequences of missed cervical injuries, Magnetic resonance imaging (MRI) of the neurologically intact symptomatic patient with negative CT scan is frequently done to rule out disco-ligamentous injuries. This study retrospectively evaluates occult disco-ligamentous injuries detected by MRI in patients with no abnormalities detected by modern multi-detector CT scanning and postulates a new theory of ligamentous stability of cervical spine.METHODSCervical spine injury patients treated at a spinal trauma referral centre from 2010 to 2013 were retrospectively identified. Available clinical records and radiographic imaging were reviewed to find neurologically intact symptomatic patients with no identifiable acute cervical spine injury on CT scan but MRI evidence of isolated subaxial disco-ligamentous injuries. Patient demographics, injury profile, and treatment details were extracted. Subaxial Cervical Spine Injury Classification (SLIC) and Denis three-column spinal stability

theory were adopted to assess stability of injuries.RESULT316/566 cervical spinal admissions had CT and MRI scans. 11 (3.5%) CT negative patients were found to have occult discoligamentous injuries on MRI. The average age (51.1 years) was not significantly different to all cervical trauma admissions (p = 0.09). Eight had flexion type and three had extension type injuries. The most common mechanisms were sports and fall on flat surface. The average SLIC score was 3.1. Four patients were classified as having unstable or potentially unstable injuries (two patients each) and three of these patients were surgically managed. Subtle CT changes to indicate discoligamentous injury could be retrospectively identified in all four of these patients.CONCLUSIONCT scans alone may be inadequate for clearing occult disco-ligamentous injuries of the subaxial cervical spine in trauma. Denis three-column stability theory may be beneficial in determining stability and guiding treatment along with the SLIC system for occult discoligamentous injuries of the subaxial cervical spine.

Dental and Orofacial Injuries.

Author(s): Piccininni, Paul; Clough, Anthony; Padilla, Ray; Piccininni, Gabriella

Source: Clinics in sports medicine; Apr 2017; vol. 36 (no. 2); p. 369-405

Publication Type(s): Journal Article Review

Abstract: Oral and facial injuries are very common in sport, and can be very expensive to treat. Many of these injuries are preventable with proper pre-competition assessment and suitable well-designed protection. Prompt sideline identification and management of orofacial injuries and appropriate follow-up are crucial to successful outcomes. There have been significant recent advances in both trauma management and mouth guard design and fabrication techniques. Athletes have a unique set of challenges-including collisions, finances, travel and training, dehydration, sport beverages, and high carbohydrate diets-that may compromise their oral health.

Nasal Injuries in Sports.

Author(s): Marston, Alexander P; O'Brien, Erin K; Hamilton, Grant S

Source: Clinics in sports medicine; Apr 2017; vol. 36 (no. 2); p. 337-353

Publication Type(s): Journal Article Review

Abstract: Nasal trauma is a common consequence of athletic competition. The nasal bones are the most commonly fractured facial bone and are particularly at risk during sports participation. Acute management of trauma to the nose includes thorough evaluation of all injuries and may require immediate management for repair of facial lacerations, epistaxis control, or septal hematoma drainage. Nasal fractures can often be addressed with closed reduction techniques; however, in the setting of complex nasal trauma, an open approach may be indicated. Using appropriate treatment techniques, posttraumatic nasal sequelae can be minimized; most patients report satisfactory long-term nasal form and function.

Sport Injuries of the Ear and Temporal Bone.

Author(s): Osetinsky, L Mariel; Hamilton, Grant S; Carlson, Matthew L

Source: Clinics in sports medicine; Apr 2017; vol. 36 (no. 2); p. 315-335

Publication Type(s): Journal Article Review

Abstract: In cases of head trauma, the ear should be evaluated in all of its components. A good understanding of otologic and skull base anatomy enables a thorough trauma assessment of this complex anatomic region. Auricular laceration, abrasion, avulsion, hematoma, frostbite, otitis

externa, exostosis, tympanic membrane perforation, ossicular discontinuity, perilymphatic fistula, labyrinthine concussion, temporal bone fracture, facial nerve paresis, and sensorineural hearing loss are a few of the more common otologic injuries seen in active patients. Prevention of otologic trauma by wearing protective equipment during activity is the best way of maintaining the long-term health of the ear and audiovestibular function.

Facial Injuries in Sports, Soft Tissue Injuries (Abrasions, Contusions, Lacerations).

Author(s): Lanzi, Guy L

Source: Clinics in sports medicine; Apr 2017; vol. 36 (no. 2); p. 287-298

Publication Date: Apr 2017

Publication Type(s): Journal Article Review

Abstract: This article reviews the diagnosis and treatment of facial soft tissue injuries in athletics. General diagnostic algorithms are presented, including initial assessment aligned with Advanced Trauma Life Support guidelines. Specific injury types are discussed along with possible collateral damage and adverse sequelae to limit morbidity. Treatment modalities are described using generally accepted principles refined to fit athlete patients. Return-to-play issues are outlined relative to level of participation, with the emphasis on safe return. Goals of treatment are defined, including prompt, accurate diagnosis; efficient, effective treatment; safe return; and optimum functional and esthetic outcome.

An Algorithmic Approach to Triaging Facial Trauma on the Sidelines.

Author(s): Colbenson, Kristi

Source: Clinics in sports medicine; Apr 2017; vol. 36 (no. 2); p. 279-285

Publication Type(s): Journal Article Review

Abstract: On-the-field evaluation of facial trauma requires a focused initial assessment of the patient's airway and breathing with a knowledge of the critical associated injuries. The initial triage in facial trauma involves assessing and protecting the athlete's airway, breathing, and cervical spine. The algorithm then requires a repeat evaluation for subtle causes of airway obstruction and aspiration risks. Final steps include control of hemorrhage, recognition of neurologic and ophthalmologic disability, and complete exposure of the athlete to examine for other associated injury. The ABC repeat ABCDE mnemonic allows providers to avoid missing critical injuries that require immediate intervention.

Completed Ulnar Shaft Stress Fracture in a Fast-Pitch Softball Pitcher.

Author(s): WILTFONG, ROGER E.; CARRUTHERS, KATHERINE H.; POPP, JAMES E.

Source: Orthopedics; Mar 2017; vol. 40 (no. 2)

Publication Type(s): Academic Journal

Available in full text at Orthopedics - from ProQuest

Abstract: Stress fractures of the upper extremity have been previously described in the literature, yet reports of isolated injury to the ulna diaphysis or olecranon are rare. The authors describe a case involving an 18-year-old fast-pitch softball pitcher. She presented with a long history of elbow and forearm pain, which was exacerbated during a long weekend of pitching. Her initial physician diagnosed her as having forearm tendinitis. She was treated with nonsurgical means including rest, anti-inflammatory medications, therapy, and kinesiology taping. She resumed pitching when allowed

and subsequently had an acute event immediately ceasing pitching. She presented to an urgent care clinic that evening and was diagnosed as having a complete ulnar shaft fracture subsequently needing surgical management. This case illustrates the need for a high degree of suspicion for ulnar stress fractures in fast-pitch soft-ball pitchers with an insidious onset of unilateral forearm pain. Through early identification and intervention, physicians may be able to reduce the risk of injury progression and possibly eliminate the need for surgical management. [Orthopedics. 2017; 40(2):e360-e362.].

Prospective, Head-to-Head Study of Three Computerized Neurocognitive Assessment Tools Part 2: Utility for Assessment of Mild Traumatic Brain Injury in Emergency Department Patients.

Author(s): Nelson, Lindsay D; Furger, Robyn E; Gikas, Peter; Lerner, E Brooke; Barr, William B; Hammeke, Thomas A; Randolph, Christopher; Guskiewicz, Kevin; McCrea, Michael A

Source: Journal of the International Neuropsychological Society : JINS; Mar 2017 ; p. 1-11

Publication Type(s): Journal Article

Abstract:OBJECTIVESThe aim of this study was to evaluate the reliability and validity of three computerized neurocognitive assessment tools (CNTs; i.e., ANAM, DANA, and ImPACT) for assessing mild traumatic brain injury (mTBI) in patients recruited through a level I trauma center emergency department (ED).METHODSmTBI (n=94) and matched trauma control (n=80) subjects recruited from a level I trauma center emergency department completed symptom and neurocognitive assessments within 72 hr of injury and at 15 and 45 days post-injury. Concussion symptoms were also assessed via phone at 8 days post-injury.RESULTSCNTs did not differentiate between groups at any time point (e.g., M 72-hr Cohen's d=-.16, .02, and .00 for ANAM, DANA, and ImPACT, respectively; negative values reflect greater impairment in the mTBI group). Roughly a quarter of stability coefficients were over .70 across measures and test-retest intervals in controls. In contrast, concussion symptom score differentiated mTBI vs. control groups acutely), with this effect size diminished over time (72-hr and day 8, 15, and 45 Cohen's d=-.78, -.60, -.49, and -.35, respectively).CONCLUSIONSThe CNTs evaluated, developed and widely used to assess sport-related concussion, did not yield significant differences between patients with mTBI versus other injuries. Symptom scores better differentiated groups than CNTs, with effect sizes weaker than those reported in sport-related concussion studies. Nonspecific injury factors, and other characteristics common in ED settings, likely affect CNT performance across trauma patients as a whole and thereby diminish the validity of CNTs for assessing mTBI in this patient population. (JINS, 2017, 23, 1-11).

Diffusion tensor imaging (DTI) findings in adult civilian, military, and sport-related mild traumatic brain injury (mTBI): a systematic critical review.

Author(s): Asken, Breton Michael; DeKosky, Steven T; Clugston, James R; Jaffee, Michael S; Bauer, Russell M

Source: Brain imaging and behavior; Mar 2017

Publication Type(s): Journal Article

Abstract: This review seeks to summarize diffusion tensor imaging (DTI) studies that have evaluated structural changes attributed to the mechanisms of mild traumatic brain injury (mTBI) in adult civilian, military, and athlete populations. Articles from 2002 to 2016 were retrieved from PubMed/MEDLINE, EBSCOhost, and Google Scholar, using a Boolean search string containing the following terms: "diffusion tensor imaging", "diffusion imaging", "DTI", "white matter", "concussion", "mild traumatic brain injury", "mTBI", "traumatic brain injury", and "TBI". We added studies not identified by this method that were found via manually-searched reference lists. We identified 86 eligible studies from English-language journals using, adult, human samples. Studies were evaluated

based on duration between injury and DTI assessment, categorized as acute, subacute/chronic, remote mTBI, and repetitive brain trauma considerations. Since changes in brain structure after mTBI can also be affected by other co-occurring medical and demographic factors, we also briefly review DTI studies that have addressed socioeconomic status factors (SES), major depressive disorder (MDD), and attention-deficit hyperactivity disorder (ADHD). The review describes population-specific risks and the complications of clinical versus pathophysiological outcomes of mTBI. We had anticipated that the distinct population groups (civilian, military, and athlete) would require separate consideration, and various aspects of the study characteristics supported this. In general, study results suggested widespread but inconsistent differences in white matter diffusion metrics (primarily fractional anisotropy [FA], mean diffusivity [MD], radial diffusivity [RD], and axial diffusivity [AD]) following mTBI/concussion. Inspection of study designs and results revealed potential explanations for discrepant DTI findings, such as control group variability, analytic techniques, the manner in which regional differences were reported, and the presence or absence of persistent functional disturbances. DTI research in adult mTBI would benefit from more standardized imaging and analytic approaches. We also found significant overlap in white matter abnormalities reported in mTBI with those commonly affected by SES or the presence of MDD and ADHD. We conclude that DTI is sensitive to a wide range of group differences in diffusion metrics, but that it currently lacks the specificity necessary for meaningful clinical application. Properly controlled longitudinal studies with consistent and standardized functional outcomes are needed before establishing the utility of DTI in the clinical management of mTBI and concussion.

Analysis of Surfing Injuries Presenting in the Acute Trauma Setting.

Author(s): Jubbal, Kevin T; Chen, Charlie; Costantini, Todd; Herrera, Fernando; Dobke, Marek; Suliman, Ahmed

Source: Annals of plastic surgery; Mar 2017

Publication Type(s): Journal Article

Abstract:BACKGROUND AND PURPOSESurfing is a rapidly growing major worldwide sport; however, little is understood regarding severe injuries and resulting hospital admissions. This study explores surfing-related injuries in the major surfing hub of San Diego presenting in the acute trauma setting. The purpose of this study is to address the void of information regarding severe surfing injuries in the trauma setting, including injury patterns, associated hospitalization course, and risk factors. Understanding the injury patterns in surfing accidents is crucial for proper management of surfing injuries.METHODSA retrospective analysis was performed of all surfing-related injuries in a Level 1 trauma center between 2000 and 2016.RESULTSA total of 93 patients were identified. Body parts most commonly affected include the head (42, 46%), face (21, 22%), and spine (47, 51%). Twenty-eight (30%) patients required surgical intervention, including 19 for spinal injuries, 3 for facial injuries, 4 for upper extremity injuries, and 2 for lower extremity injuries. The distribution for most presentations (55, 59%) occurred in the summer months between July and September. The Injury Severity Score demonstrated strong positive correlation with the length of hospital stay, with a Pearson coefficient of 0.52 ($P < 0.01$). The average length of hospitalization was 5.8 days, with intensive care unit level care required in 49% (46) patients and average length of intensive care unit stay of 5.5 days. Alcohol content was tested in 84% (78) of patients and found positive in 10% (8) of tested patients. Drug screening was performed in 70% (64) patients and found positive in 38% (24) of tested patients.CONCLUSIONSSurfing, although a relatively safe sport, is not without major risks. In contrast with other studies, we found a high proportion of head, face, and spine injuries in patients presenting with surfing injuries in the trauma setting, consistent with its presentation as a high velocity and high impact injury. With plastic surgeons often treating severe head and facial injuries, understanding the injury patterns in severe surfing accidents is crucial for proper

management. High rates of positive alcohol and drug screening signal the importance to bring awareness to the dangers of surfing under the influence.

Vascular Quadrilateral Space Syndrome in 3 Overhead Throwing Athletes: An Underdiagnosed Cause of Digital Ischemia.

Author(s): Rollo, Johnathon; Rigberg, David; Gelabert, Hugh

Source: Annals of vascular surgery; Mar 2017

Publication Type(s): Journal Article

Abstract: Vascular quadrilateral space syndrome (vQSS) is an underdiagnosed cause of extremity ischemia, pain, and paresthesia in overhand throwing athletes. The mechanism of vQSS is thought to result from repeated abduction and external rotation of the arm leading to a distraction injury of the posterior circumflex humoral artery (PCHA) as this courses through the quadrilateral space. This trauma may cause dissection and dissecting aneurysm formation. Thrombus from this arterial injury then embolizes down the arm resulting in the symptomatic presentation. Patients were often presented after multiple embolic events, which have resulted in obliteration of digital arteries. Later stages of presentation may include ischemic ulceration and gangrene. We report 3 cases of vQSS in overhand throwing athletes. All 3 underwent surgical correction and have returned to competition. We discuss presentation, diagnosis, imaging findings, management, outcomes, and review of the literature. Prompt recognition of this syndrome is essential to optimal treatment, which includes PCHA ligation and division with or without thrombolytic therapy. Increased awareness of vQSS is needed among coaches and athletic trainers who often identify the symptoms and initiate the treatment. When treated promptly, these athletes return to baseline functional status.

The Relationship Between Training Load and Injury in Men's Professional Basketball Players.

Author(s): Weiss, Kaitlyn J; Allen, Sian V; McGuigan, Mike R; Whatman, Chris S

Source: International journal of sports physiology and performance; Mar 2017 ; p. 1-20

Publication Type(s): Journal Article

Abstract:PURPOSETo establish the relationship between the acute:chronic workload ratio and lower extremity overuse injuries in professional basketball players over the course of a competitive season.METHODSThe acute:chronic workload ratio was determined by calculating the sum of the current week's session rate of perceived exertion (sRPE) training load (acute load) and dividing it by the average weekly training load over the previous four weeks (chronic load). All injuries were recorded weekly using a self-reported injury questionnaire (Oslo Sports Trauma Research Centre Injury Questionnaire20) Workload ratios were modelled against injury data using a logistic regression model with unique intercepts for each player.RESULTSSubstantially fewer team members were injured following workload ratios between 1-1.49 (36%) compared to very low (≤0.5; 54%), low (0.5-0.99; 51%) or high (≥1.5; 59%) workload ratios. The regression model provided unique workload-injury trends for each player, but all mean differences in likelihood of being injured between workload ratios were unclear.CONCLUSIONSMaintaining workload ratios between 1-1.5 may be optimal for athlete preparation in professional basketball. An individualized approach to modelling and monitoring the training load-injury relationship, along with a symptom-based injury-surveillance method, should help coaches and performance staff with individualized training load planning and prescription, and with developing athlete-specific recovery and rehabilitation strategies.

Finger Trauma Due to Surfing; A Case Series and Analysis of Fracture Patterns.

Author(s): Ruijs, A C J; Langenberg, L C; Rezzouk, J

Source: The journal of hand surgery Asian-Pacific volume; Mar 2017; vol. 22 (no. 1); p. 10-13

Publication Type(s): Journal Article

Abstract:BACKGROUNDThe purpose of this study is to research the type of lesions to the hand and fingers in the sport of surfing.METHODSAll surfing related hand injuries reported to our hospital between January 2008 and September 2015 were analyzed.RESULTSThirty-seven patient files held a clear description of a trauma related to the surf sport. We found three finger sprains, five wounds needing suture, including one digital nerve lesion and one ring finger with flexor tendon injury, three fingertip amputations and twenty-six digital fractures. The fracture type was similar in twenty-one patients: an open extra-articular transverse fracture of the distal phalanx. Thirty-one injuries were caused by the surf leash.CONCLUSIONSFrom this case series we can conclude that surfing may lead to significant trauma to the fingers, mainly due to the leash. This can be caused by grasping the leash while it snaps to tension, which may lead to hyper flexion of the distal phalanx, resulting in a typical trans-phalangeal fracture. Also, when the leash is wrapped around a finger or grasped near the attachment of the leash to the board, ring avulsion-like trauma may occur, leading to open fractures or (partial) amputations. Recognizing that surf leash trauma causes a particular type of fracture to the distal phalanx, may lead to better education of surfers and the development of safer surfing equipment.

Casting and Splinting Management for Hand Injuries in the In-Season Contact Sport Athlete.

Author(s): Carruthers, Katherine H; O'Reilly, Olivia; Skie, Martin; Walters, John; Siparsky, Patrick

Source: Sports health; Mar 2017 ; p. 1941738117700133

Publication Type(s): Journal Article

Abstract:CONTEXTUpper extremity injuries are extremely common in contact sports such as football, soccer, and lacrosse. The culture of competitive athletics provides an environment where hand injuries are frequently downplayed in an effort to prevent loss of game time. However, studies have shown that many sport-induced hand injuries do not actually require immediate surgical attention and can be safely treated through immobilization so that the athlete may complete the athletic season. In these cases, appropriate casting and splinting measures should be taken to ensure protection of the injured player and the other competitors without causing loss of game time.EVIDENCE ACQUISITIONArticles published between 1976 and 2015 were reviewed to capture historical and current views on the treatment of hand injuries in the in-season athlete.STUDY DESIGNClinical review.LEVEL OF EVIDENCELevel 5.RESULTSAlthough traditionally many sports-induced traumatic injuries to the hand held the potential to be season-ending injuries, experience has shown that in-season athletes do not necessarily need to lose game time to receive appropriate treatment. A thorough knowledge of converting everyday splints and casts into game day, sport-approved protective immobilization devices is key to safely allowing athletes with select injuries to play while injured.CONCLUSIONProtective techniques allow for maximum functionality during gameplay while safely and effectively protecting the injury from further trauma while bony healing takes place.

Portable mTBI Assessment Using Temporal and Frequency Analysis of Speech.

Author(s): Daudet, Louis; Yadav, Nikhil; Perez, Matthew; Poellabauer, Christian; Schneider, Sandra; Huebner, Alan

Source: IEEE journal of biomedical and health informatics; Mar 2017; vol. 21 (no. 2); p. 496-506

Publication Type(s): Journal Article

Abstract: This paper shows that extraction and analysis of various acoustic features from speech using mobile devices can allow the detection of patterns that could be indicative of neurological trauma. This may pave the way for new types of biomarkers and diagnostic tools. Toward this end, we created a mobile application designed to diagnose mild traumatic brain injuries (mTBI) such as concussions. Using this application, data were collected from youth athletes from 47 high schools and colleges in the Midwestern United States. In this paper, we focus on the design of a methodology to collect speech data, the extraction of various temporal and frequency metrics from that data, and the statistical analysis of these metrics to find patterns that are indicative of a concussion. Our results suggest a strong correlation between certain temporal and frequency features and the likelihood of a concussion.

Traumatic Sports-Related Cervical Spine Injuries.

Author(s): Puvanesarajah, Varun; Qureshi, Rabia; Cancienne, Jourdan M; Hassanzadeh, Hamid

Source: Clinical spine surgery; Mar 2017; vol. 30 (no. 2); p. 50-56

Publication Type(s): Journal Article

Abstract: Cervical spine trauma in the athlete is not an insignificant occurrence with possibly catastrophic results. Football remains one of the most common and most well studied sporting activities associated with spine injuries. Transient spinal cord and peripheral nerve injuries may manifest as quadriparesis or burners/stingers with symptoms that resolve completely. More severe spinal cord injuries, typically from axial loading on the cervical spine, will cause bilateral symptoms with residual neurological deficit. Acute Trauma Life Support principles must always be applied to the player with a potential spine injury. Recent positional statements by National Athletic Trainers' Association advocate equipment removal on the field by 3 individuals with appropriate training, a shift from previous recommendations. This recommendation is still under debate, but equipment removal in the field is an option depending on staff training. The use of steroids in acute spinal cord injury remains controversial. Moderate systemic hypothermia has theoretical benefits for reducing spinal cord damage in the setting of an acute injury. Although it has been studied in the laboratory, only a few clinical trials have been performed and further research is necessary before routine implementation of hypothermia protocols.

Flexor Digitorum Superficialis Tear in a Wakeboarder: An Unusual Clinical Case.

Author(s): Draghi, Ferdinando; Gitto, Salvatore

Source: Clinical journal of sport medicine : official journal of the Canadian Academy of Sport Medicine; Mar 2017; vol. 27 (no. 2); p. e9

Publication Type(s): Journal Article

Abstract: Tears in the flexor digitorum superficialis muscle belly are rare injuries with one single case reported in the literature. In this article, we describe the first case of muscle tear of the flexor digitorum superficialis resulting from a wakeboarding trauma. The wakeboarder presented with pain localized in the anterior forearm, and early symptoms of carpal tunnel syndrome. Ultrasonography demonstrated an intramuscular hematoma of the flexor digitorum superficialis myotendinous junction, which compressed the median nerve. After conservative treatment, the patient was asymptomatic and returned to his usual daily activities and sports within 5 weeks of the injury. In patients with a wakeboard trauma and similar presentations, a tear in the flexor digitorum superficialis muscle belly should be suspected.

Akute und chronische Instabilitaten der Hand und des Handgelenkes Acute and chronic instabilities of the hand and wrist

Author(s): Schoffl V.; Lutter C.

Source: Sports Orthopaedics and Traumatology; Mar 2017; vol. 33 (no. 1); p. 8-14

Publication Type(s): Journal: Review

Abstract: Instabilities of the wrist or fingers are important injuries in athletes. In the event of a fall or a hyperflexion trauma of the wrist, a radiographic examination is necessary. In addition, clinical evaluation and stress tests will further lead to a diagnosis. Nevertheless, frequently an MRI is necessary to reach a final diagnosis. The classification of carpal instabilities is depending on their biomechanics and radiographic findings. The therapy is based on the specific pathology and its various causes. Instabilities of the fingers are most frequently located at the thumb on behalf of a skiers thumb". In Independent of the extent of this instability, a conservative or surgical therapy is necessary. Copyright © 2016 Elsevier GmbH

A turbulent tackle : A novel surgical approach to a rugby related jejunal perforation

Author(s): Gaffney B.; O'Shea R.; O'Sullivan D.; Aherne T.M.; Sweeney K.J.

Source: Irish Journal of Medical Science; Mar 2017; vol. 186 (no. 3)

Publication Type(s): Journal: Conference Abstract

Abstract: Introduction: Viscus perforation in the context of blunt-force abdominal trauma is in itself a rarity. Within a sporting context, it is especially rare. Herein, we report a novel laparoscopic surgical approach to the management of a traumatic jejunal perforation sustained through a shoulder blow on the playing field in a previously fit and healthy 28-year old. Description: A 28-year old gentleman with no significant medical history presented to Emergency Department with severe left sided abdominal pain and vomiting following abdominal trauma during a rugby match. Clinical examination revealed localised left-sided peritonism. The patient was afebrile and haemodynamically stable throughout. CT imaging demonstrated tiny foci of free air adjacent to a focal segmental thickening of the jejunum distal to the ligament of Treitz. Laparoscopy was performed which revealed evidence of an early adhesional mass forming in the left upper quadrant. An extensive washout was undertaken and a wide-bore free drainage system was placed along the left paracolic gutter. An immediate symptomatic response was noted in the post-operative period with near complete resolution of pain and full mobility the next day. Conclusion/treatment: Rugby union is increasing in physicality both in the professional and amateur arena leading to a wide spectrum of potential injury. Our case highlights laparoscopy as a safe and effective treatment modality for hollow viscus perforation. To our knowledge, the washout and drainage technique has yet to be described in the context of a sporting injury as shown in our report.

Because accidents happen

Author(s): Rosenberg M.

Source: Journal of Medical Radiation Sciences; Mar 2017; vol. 64 ; p. 20

Publication Type(s): Journal: Conference Abstract

Abstract: Computed Tomography (CT) has revolutionized the field of imaging and medicine since its introduction in the 1970's. One of the major changes in imaging applications is the extensive use of multidetector CT (MDCT) as a major diagnostic tool in multi-trauma patient care in the Emergency Department (ED). MDCT has proved to be a quick and accurate tool for imaging the extent of injury. The Trauma Service at Royal Perth Hospital sees more than 6000 admissions a year, more than 115 cases a week, and almost half of these patients are a result of some form of road trauma.1 At RPH

we also see gunshots, stabbing injuries, sporting injuries, falls, assaults and work related injuries. In this presentation I will discuss our CT trauma protocols, trauma mechanisms and the resulting injuries. Cases presented will include facial fractures, spinal injuries, abdominal and pelvic injuries, thoracic trauma, gunshot injuries and life threatening vascular injuries

Journal Tables of Contents

The most recent issues of the following journals:

- **The American Journal of Sports Medicine**
- **British Journal of Sports Medicine**
- **Journal of Acute Medicine**
- **Emergency Medicine Journal**
- **Spine**

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The American Journal of Sports Medicine

February 2017, Volume 45, Issue 2
http://ajs.sagepub.com/content/current

British Journal of Sports Medicine

March 2017, Volume 51, Issue 6
http://bjsm.bmj.com/content/current

Emergency Medicine Journal

March 2017, Volume 34, Issue 3
http://emj.bmj.com/content/current

Spine

February 15 2017, Volume 42, Issue 4

Journal of Acute Medicine

http://www.e-jacme.com/
Journal has been transferred back to owner by the publishing company and appears to no longer be produced in English language
Full English archive is open access.

Exercise: Creating a search strategy

Scenario: A 64 year old obese male who has tried many ways to lose weight presents with a newspaper article about 'fat-blazer' (chitosan). He asks for your advice.

1. **What would your PICO format be?**

Population/problem	
Intervention/indicator	
Comparator	
Outcome	

2. **What would your research question be?**

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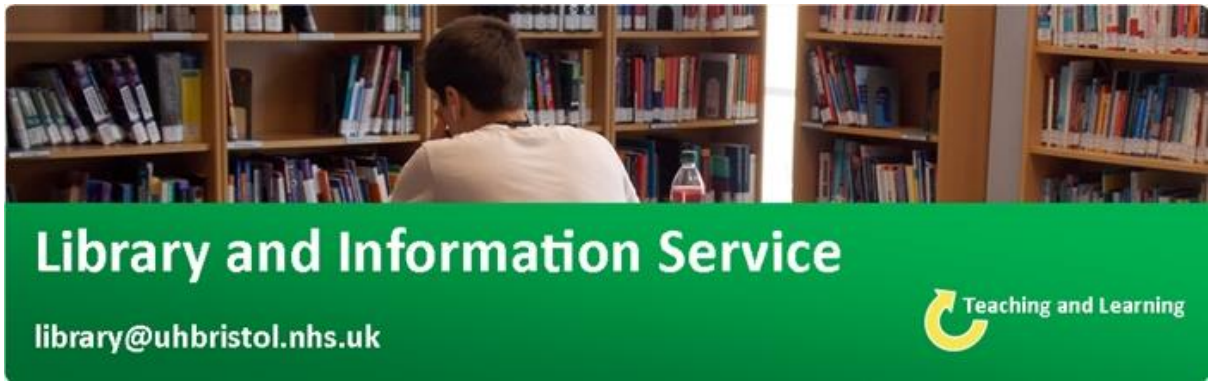
PICO: P = obese patients; I = chitosan; C = placebo; O = decrease weight
Research question: In obese patients, does chitosan, compared to a placebo, decrease weight?



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