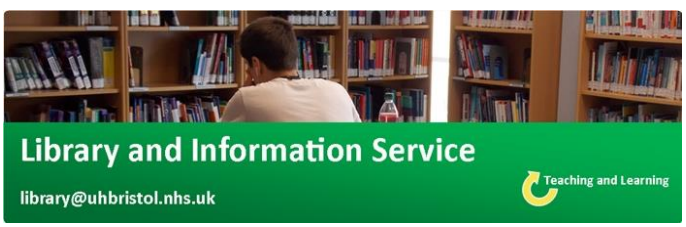
University Hospitals Bristol NHS
NHS Foundation Trust

Musculoskeletal Soft Tissue Clinic

Current Awareness Newsletter

September 2017 (Quarterly)

Respecting everyone
Embracing change
Recognising success
Working together
Our hospitals.



Training Sessions 2017

All sessions are one hour

October (12.00-13.00)

Fri 6th	Interpreting Statistics
Mon 9th	Literature Searching
Tue 17th	Critical Appraisal
Wed 25th	Interpreting Statistics

November (13.00-14.00)

Thu 2nd	Literature searching
Fri 10th	Critical Appraisal
Mon 13th	Statistics
Tue 21st	Literature searching

Your Local Librarian – Jo Hooper

Whatever your information needs, the library is here to help. As your outreach librarian I offer **literature searching services** as well as training and guidance in **searching the evidence** and **critical appraisal** – just email me at library @uhbristol.nhs.uk

OUTREACH: Your Outreach Librarian can help facilitate evidence-based practise, as well as assisting with academic study and research. We can help with **literature searching, obtaining journal articles and books**, and setting up individual **current awareness alerts**. We also offer one-to-one or small group training in **literature searching, accessing electronic journals, and critical appraisal**. Get in touch: library@uhbristol.nhs.uk

LITERATURE SEARCHING: We provide a literature searching service for any library member. For those embarking on their own research it is advisable to book some time with one of the librarians for a one-to-one session where we can guide you through the process of creating a well-focused literature research and introduce you to the health databases access via NHS Evidence. Please email requests to library@uhbristol.nhs.uk

Contents

UpToDate is the leading evidence-based clinical decision support system, designed for use at the point of care.

It contains more than 9,500 searchable topics across the following specialities:

- Adult and paediatric emergency medicine
- Allergy and immunology
- Cardiovascular medicine
- Dermatology
- Drug therapy
- Endocrinology and diabetes mellitus
- Family medicine
- Gastroenterology and hepatology
- General surgery
- Geriatrics
- Haematology
- Hospital Medicine
- Infectious diseases
- Nephrology and hypertension
- Neurology
- Obstetrics and gynaecology
- Oncology
- Paediatrics
- Primary care internal medicine
- Psychiatry
- Pulmonary, critical care and sleep medicine
- Rheumatology

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You will need your NHS Athens username/password (register through http://openathens.nice.org.uk/).

Updates

NICE National Institute for Health and Care Excellence

Soft-tissue disorders | Treatment summary

Source: British National Formulary - BNF - 15 August 2017

Soft-tissue disorders | Treatment summary

Source: British National Formulary for Children - BNFc - 15 August 2017

Hip and Groin Injuries in Dancers: A Systematic Review

Source: PubMed - 01 August 2017 - Publisher: Sports Health

Read Summary

Cochrane Library

No relevant up to date evidence

UpToDate®

OpenAthens login required. Register here: https://openathens.nice.org.uk/

Initial management of trauma in adults

- Emergency computed tomography (CT)
- Trauma team
- Summary and recommendations
- Blunt trauma mechanism (Tables)

Concussion and mild traumatic brain injury

- Other cranial nerve injuries
- Summary and recommendations
- Evaluation of patients with mild TBI (Algorithms)

Approach to eye injuries in the emergency department

- Injury classification
- Summary

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

Immediate emergency free anterolateral thigh flap after car-tyre friction injury: A case report with eight years follow-up.

Author(s): Merter, Abdullah; Armangil, Mehmet; Kaya, Burak; Bilgin, Sinan

Source: International journal of surgery case reports; 2017; vol. 38 ; p. 102-106

Publication Type(s): Journal Article

Abstract: The car-tyre friction injury has differences from other injuries. The components of injury which are burn, crushing, shearing, and degloving occur. Many treatment options can be performed for coverage of wound which are Vacuum Assisted Closure system (V.A.C), skin grafting, free flaps, local flaps and cross leg flap.

Necrotizing fasciitis attended in the Emergency Department in a tertiary Hospital: Evaluation of the LRINEC scale.

Author(s): Ballesteros-Betancourt, J R; García-Tarriño, R; Ríos-Guillermo, J; Rodriguez-Roiz, J M; Camacho, P; Zumbado-Dijeres, A; Domingo-Trepat, A; Llusá-Pérez, M; Combalia-Aleu, A; García-Ramiro, S; Soriano-Viladomiu, A

Source: Revista espanola de cirugia ortopedica y traumatologia; 2017; vol. 61 (no. 4); p. 265-272

Publication Type(s): Journal Article

Abstract:AIMTo describe mortality and complications of patients seen in the emergency room, diagnosed with necrotizing soft tissue infection (NSTI) and the correlation of such complications with the Laboratory Risk Indicator for Necrotizing fasciitis scale (LRINEC) .**[ABSTRACT EDITED]**

Pain management via Ultrasound-guided Nerve Block in Emergency Department; a Case Series Study.

Author(s): Nejati, Amir; Teymourian, Houman; Behrooz, Leili; Mohseni, Gholamreza

Source: Emergency (Tehran, Iran); 2017; vol. 5 (no. 1); p. e12

Publication Type(s): Journal Article

Abstract:INTRODUCTIONPain is the most common complaint of patients referring to emergency department (ED). Considering the importance of pain management in ED, this study aimed to investigate the efficacy and feasibility of ultrasound-guided nerve blocks in this setting. .**[ABSTRACT EDITED]**

Primary Small Bowel GIST Presenting as a Life-Threatening Emergency: A Report of Two Cases.

Author(s): Khuri, Safi; Gilshtein, Hayim; Darawshy, Abd-Alkarim; Bahouth, Hany; Kluger, Yoram

Source: Case reports in surgery; 2017; vol. 2017 ; p. 1814254

Publication Type(s): Journal Article

Available in full text at Case Reports in Surgery - from ProQuest

Abstract: Gastrointestinal stromal tumor (GIST) is a rare stromal neoplasm, which represents the most common mesenchymal tumor of the gastrointestinal tract. It is characterized by indolent clinical symptoms, although it can present as a life-threatening emergency. Herein, we present two cases of primary small bowel GIST treated at our department..**[ABSTRACT EDITED]**

Hydrochlorothiazide induced lichen planus in the emergency department: A case report

Author(s): Sin B.; Chew E.

Source: Journal of Pharmacy Practice; 2017; vol. 30 (no. 2); p. 266-269

Publication Type(s): Article

Abstract: Lichen planus (LP) is a mucocutaneous inflammatory disease that involves papulosquamous eruption of the skin, scalp, nails, and mucous membranes. This uncommon condition has a higher prevalence in African Americans and females. Women accounts for 50% of cutaneous LP (CLP) and 60% to 75% of oral LP (OLP) cases. Diagnosis is centered around clinical presentation. Patient evaluation requires a comprehensive physical examination to identify any potential sites of involvement. LP is usually described by the "Six P's": planar, purple, polygonal, pruritic, papules, and plaques. Drug-induced LP, or lichenoid drug reactions, is uncommon and usually indiscernible from other forms of LP. Lichenoid drug reactions exhibit parakeratosis, dermal infiltrates of eosinophils, or perivascular lymphocytic infiltrates affecting the reticular dermis. An extended time interval between the initiation of drug to the onset of symptoms usually does not exclude potential diagnosis of a lichenoid drug reaction. We describe a case of hydrochlorothiazide-induced LP without prolonged exposure to sunlight diagnosed in the emergency department (ED). In this case, a pharmacist-conducted medication reconciliation played an integral role in accurately recognizing this adverse drug reaction. Our case report adds to the limited available literature on the topic, most of which originated more than 30 years ago.

It's a cod! Finding Nemo (impacted fishbone) in the emergency department

Author(s): McCabe A.; Patton A.; Salter N.

Source: BMJ Case Reports; 2017; vol. 2017

Publication Type(s): Article

Abstract:A 23-year-old woman presented to the emergency department (ED) with a sensation of a a fish bone' stuck in her throat after eating cod. On physical examination, while she reported an uncomfortable sensation in her throat, no airway compromise was evident. Clinical examination, including ear, nose and throat (ENT) and oropharyngeal assessment, was unremarkable. A linear opacity consistent with a fishbone was visualised on a soft tissue lateral neck X-ray anterior to the vertebral body of C4-6. One attempt to visualise the fishbone on direct laryngoscopy failed in the ED. The fishbone was later removed the next day via direct visualisation with a flexible endoscope in the operating theatre by the ENT surgical team. The patient's recovery was uneventful.

What Is the Utility of Ultrasonography for the Identification of Skin and Soft Tissue Infections in the Emergency Department?

Author(s): Gottlieb M.; Pandurangadu A.V.

Source: Annals of Emergency Medicine; 2017

Publication Type(s): Article In Press

Angiographic management of the left hepatic artery disruption following motor vehicle accident

Author(s): Dullet N.; Marshall D.

Source: Radiology Case Reports; Sep 2017; vol. 12 (no. 3); p. 534-536

Publication Type(s): Article

Abstract: Trauma is a leading cause of death in younger individuals. Blunt abdominal trauma has the potential to mask severe injuries-there can be serious organ or vascular injury underneath intact skin. Increasingly, there is a trend toward nonoperative management of blunt abdominal trauma. We report the case of a left hepatic artery transection managed in the interventional radiology suite.

Soft tissue oxygen saturation to predict admission from the emergency department: A prospective observational study.

Author(s): Davis, William T.; Lospinso, Josh; Barnwell, Robert M.; Hughes, John; Schauer, Steven G.; Smith, Thomas B.; April, Michael D.

Source: American Journal of Emergency Medicine; Aug 2017; vol. 35 (no. 8); p. 1111-1117

Publication Type(s): Academic Journal

Abstract: Objective: We evaluated a soft tissue oxygen saturation (Sto2) measurement at triage for predicting admission to the hospital in adults presenting to the emergency department (ED) in addition to data routinely gathered at triage.Methods: This was a prospective, observational, single center study of adults presenting to the ED for evaluation. Research assistants obtained thenar eminence Sto2 measurements on subjects in ED triage. ED providers not involved in the study then made all management and disposition decisions. We prospectively collected data on each subject's final ED disposition (admission versus discharge). We identified the optimal Sto2 cutoff value for predicting admission. We then used logistic regression modeling to describe the added predictive value of Sto2 beyond routinely collected triage data including Emergency Severity Index level, age, and vital signs.Results: We analyzed 2588 adult (>17years) subjects with 743 subjects (28.7%) admitted to the hospital. Sto2<76% was the optimal diagnostic cutoff for predicting admission. Of subjects with Sto2<76%, 158 of 384 (41.1%) underwent admission versus 585 of 2204 (26.5%) subjects with Sto2≥76. After controlling for age, vital signs, and ESI level in the logistic regression analysis, Sto2<76% had an odds ratio of 1.54 (95% confidence interval (CI), 1.19 to 1.98) for predicting admission.Conclusions: Sto2 may provide additional prognostic data to routine triage assessment regarding the disposition for undifferentiated adult patients presenting to the ED.

Don't Forget the Abdominal Wall: Imaging Spectrum of Abdominal Wall Injuries after Nonpenetrating Trauma.

Author(s): Matalon, Shanna A; Askari, Reza; Gates, Jonathan D; Patel, Ketan; Sodickson, Aaron D; Khurana, Bharti

Source: Radiographics : a review publication of the Radiological Society of North America, Inc; 2017; vol. 37 (no. 4); p. 1218-1235

Publication Type(s): Journal Article

Abstract: Abdominal wall injuries occur in nearly one of 10 patients coming to the emergency department after nonpenetrating trauma. Injuries range from minor, such as abdominal wall contusion, to severe, such as abdominal wall rupture with evisceration of abdominal contents. Examples of specific injuries that can be detected at cross-sectional imaging include abdominal muscle strain, tear, or hematoma, including rectus sheath hematoma (RSH); traumatic abdominal wall hernia (TAWH); and Morel-Lavallée lesion (MLL) (closed degloving injury). These injuries are often overlooked clinically because of (a) a lack of findings at physical examination or (b) distraction by more-severe associated injuries. However, these injuries are important to detect because they are highly associated with potentially grave visceral and vascular injuries, such as aortic injury, and because their detection can lead to the diagnosis of these more clinically important grave traumatic injuries. Failure to make a timely diagnosis can result in delayed complications, such as bowel hernia with potential for obstruction or strangulation, or misdiagnosis of an abdominal wall neoplasm.

Groin injuries, such as athletic pubalgia, and inferior costochondral injuries should also be considered in patients with abdominal pain after nonpenetrating trauma, because these conditions may manifest with referred abdominal pain and are often included within the field of view at cross-sectional abdominal imaging. Radiologists must recognize and report acute abdominal wall injuries and their associated intra-abdominal pathologic conditions to allow appropriate and timely treatment. © RSNA, 2017.

Database: Medline

Musculoskeletal

The Ilizarov Mini-External Fixator for the Treatment of First Metatarsal Fracture: A Case Report.

Author(s): Kataoka, Tatsunori; Kodera, Norie; Takai, Shinro

Source: Journal of Nippon Medical School = Nippon Ika Daigaku zasshi; 2017; vol. 84 (no. 3); p. 144-147

Publication Type(s): Journal Article

Available in full text at Journal of Nippon Medical School = Nippon Ika Daigaku zasshi [J Nippon Med Sch] NLMUID: 100935589 - from EBSCOhost

Abstract: Forefoot fractures are frequently accompanied by severe soft tissue damage. Therefore, treatment should focus not only on fractures but also on soft tissue damage, for which external fixation can be used as a surgical option. A 63-year-old woman presented to the emergency clinic of our hospital with forefoot pain after a motorcycle accident. Comminuted fracture of the proximal part of the metatarsal was diagnosed. Because of the swollen foot and fracture comminution, an operation using the Ilizarov mini external fixator was performed to prevent further damage to the soft tissue. Weight-bearing was permitted seven weeks after the operation, and the extraction of the apparatus was performed nine weeks postoperatively. One year later, the patient had no pain and had returned to ballroom dancing, a hobby which she performed five days a week, with no difficulties. Our results suggest that the Ilizarov mini external fixator should be considered not only for temporary treatment, but also for the entire duration of treatment of first metatarsal fractures associated with severe soft tissue damage.

Prevalence of morphometric deformities in patients with lumbar or dorsal acute pain

Author(s): Guillen Astete C.A.; Moratalla C.P.; Quinones Torres J.R.

Source: Osteoporosis International; 2017; vol. 28

Publication Type(s): Conference Abstract

Abstract: Objective: To determine the prevalence of morphometric de-formities in vertebral bodies of postmenopausal women radio-logically assessed due to lumbar or dorsal acute pain in a urgency and emergency environment. Methods: A simple randomization of registries of women of 65+ years old who consulted in our AandE Department in 2015 and 2016 were performed. The registries collected were 120% of the amount of the sample size calculated for a not finite population of urgent consultation, with a 3% precision and a theoretical estimated prevalence of 7% based on local studies about vertebral fractures. Metrical studies on the ra-diographic charts were performed in every registry on D9 to L5 vertebral bodies from the lateral approach using the Genant scale recommendations. The study were performed by an expert rheumatologist blinded to the clinical AandE report. Results: Two hundreds and seventy five registries were included with dorsal and lumbar acute pain. Grade I, II and III Genant deformities were identified among 62 (22. 5%), 30 (10. 9%) and 18 (6. 5%) of radiological studies from patients assessed due to dorsal acute pain,

respectively. Grade I, II and III Genant deformities were identified among 31 (11. 2%), 49 (17. 8%) and 33 (12. 0%) of radiological studies from patients assessed due to lumbar acute pain, respectively. Prevalence of at least one dorsal vertebral body deformity was 40.0% (95% CI 34.39-45. 89%). Prevalence of at least one lumbar vertebral body deformity was 41.09% (95% CI 35.44-46. 99%). Lumbar deformities grade I and II counted as much as 70.7%. Dorsal deformities grade I and II counted as much as 83.6%. From all the 93 grade I deformities, 6.4% were reported as fractures in the clinical report. Grade II deformities were recognized in 20.2% of all the cases and Grade III deformities were recognized in 92.1% (P<0. 001). Conclusions: Although this is an study focused in symptomatic patients, it presents the prevalence of grades I and II Genant deformities that are usually clinically ignored. Since the consideration of morphometrical vertebral deformities is relevant in order to choose how to treat a patient with osteoporosis, it is highly important to take into account that many of these fractures are ignored on AandE environment even in symptomatic patients.

A data linkage study examining emergency department re-presentations among older adults hospitalised with osteoporotic fractures

Author(s): Mathew S.; Heesch K.; McPhail S.

Source: Osteoporosis International; 2017; vol. 28

Publication Date: 2017

Publication Type(s): Conference Abstract

Abstract: Objective: This study examined rates of re-presentation to hospital emergency Departments (with or without admission) and mortality among older adults presenting to hospital with osteoporotic fractures, including patient and clinical factors associated with risk of emergency re-presentation (within 2 years) and post-discharge mortality. Materials and Methods: Linked emergency Department and hospital admission records (2009-14) for adults aged >65 years, who presented to public or private emergency Departments in Queensland (Australia) with osteoporotic fractures were identified using ICD-10 diagnosis codes. Demographic and clinical characteristics, hospital re-presentation (within 2 years post-discharge) and mortality rates were described. Cox proportional hazards model was used to evaluate patient and clinical factors associated with risk of hospital re-presentations and mortality. Results: 12,224 unique patients (70% female, mean (SD) age 81(8)) with emergency Department presentations for osteopo-rotic fractures were identified from 153 hospitals. 7,155 patients (59%) were readmitted at least once and n=5,895 (48%) had died (censored at 2015). Hip fractures (n=2,705, 14%) were the most common reason for subsequent emergency Department representations followed by cardiovascular diseases (n=1,289, 7%) and head trauma (n=798, 4%). At the emergency re-presentations, approximately half were discharged without admission to hospital (n=6,477, 52%). The Cox proportional hazards model indicated (HR; 95%Cis, p-value): Age at index admission (0. 93; 0.89, 0.96, p<0. 001), longer length of stay (1. 01; 1.00, 1.01, p<0. 001), and a range of comorbidities including myocardial infarction, peripheral vascular disease, congestive heart failure, and dementia (all p<0. 05) were associated with risk of ED re-presentation within 2 years. Age (1. 38; 1.33, 1.42, p<0. 001), longer length of stay (1. 01; 1.00, 1.01, p<0. 001) male gender (0. 82; 0.76, 0.88, p<0. 001), as well as dementia, COPD, diabetes, presence of metastatic cancer (all p<0. 05) at their index hospitalisation were associated with post-discharge mortality. Conclusion: This study was novel in reporting findings not only for hospital re-admissions, but also emergency representations to ED (without admission) and mortality rates, which were high.

Incidence and clinical features of sacral insufficiency fracture in the emergency department.

Author(s): Tamaki, Yasuaki; Nagamachi, Akihiro; Inoue, Kazumasa; Takeuchi, Makoto

Source: The American journal of emergency medicine; Sep 2017; vol. 35 (no. 9); p. 1314-1316

Publication Type(s): Journal Article

Abstract:INTRODUCTIONA sacral insufficiency fracture (SIF) often manifests as low back pain or sciatica in the absence of any antecedent trauma. These fractures may be missed because of lack of appropriate imaging. The purpose of this study was to clarify the incidence and clinical features of SIF as well as the characteristic findings on magnetic resonance imaging (MRI) of the lumbar spine.MATERIALS AND METHODSThe study participants comprised 250 patients (132 male, 118 female; mean age 58.6years) with pelvic trauma. SIF was identified on computed tomography or MRI. The incidence, initial symptoms, and time delay between the first visit and an accurate diagnosis of SIF were recorded.RESULTSWe detected 11 cases of SIF. Initial symptoms of SIF were low back pain (36.4%), gluteal pain (63.6%), and coxalgia (18.2%). Two patients complained of both low back pain and gluteal pain. The mean delay between the first visit and an accurate diagnosis of SIF was 23.9days. This time interval was significantly longer than in patients with other types of pelvic fracture. Four patients underwent MRI targeting the lumbar spine to investigate their symptoms. In all 4 patients, the signal intensity on T1-weighted and fat-suppressed images of the second sacral segment was low and high, respectively.CONCLUSIONThis study demonstrates that accurate diagnosis of SIF may be delayed because of difficulties in detecting this type of fracture on plain X-ray and the non-specific nature of the presenting complaints. Emergency physicians should keep SIF in mind when investigating patients who complain of low back pain or gluteal pain. Findings at the second sacral segment on MRI targeting the lumbar spine may aid early diagnosis of this type of pelvic fracture.

Detection of Bone Marrow Edema in Nondisplaced Hip Fractures: Utility of a Virtual Noncalcium Dual-Energy CT Application.

Author(s): Kellock, Trenton T; Nicolaou, Savvas; Kim, Sandra S Y; Al-Busaidi, Sultan; Louis, Luck J; O'Connell, Tim W; Ouellette, Hugue A; McLaughlin, Patrick D

Source: Radiology; Sep 2017; vol. 284 (no. 3); p. 798-805

Publication Type(s): Journal Article

Abstract: Purpose To quantify the sensitivity and specificity of dual-energy computed tomographic (CT) virtual noncalcium images in the detection of nondisplaced hip fractures and to assess whether obtaining these images as a complement to bone reconstructions alters sensitivity, specificity, or diagnostic confidence. Materials and Methods The clinical research ethics board approved chart review, and the requirement to obtain informed consent was waived. The authors retrospectively identified 118 patients who presented to a level 1 trauma center emergency department and who underwent dual-energy CT for suspicion of a nondisplaced traumatic hip fracture. Clinical follow-up was the standard of reference. Three radiologists interpreted virtual noncalcium images for traumatic bone marrow edema. Bone reconstructions for the same cases were interpreted alone and then with virtual noncalcium images. Diagnostic confidence was rated on a scale of 1 to 10. McNemar, Fleiss κ, and Wilcoxon signed-rank tests were used for statistical analysis. Results Twenty-two patients had nondisplaced hip fractures and 96 did not have hip fractures. Sensitivity with virtual noncalcium images was 77% and 91% (17 and 20 of 22 patients), and specificity was 92%-99% (89-95 of 96 patients). Sensitivity increased by 4%-5% over that with bone reconstruction images alone for two of the three readers when both bone reconstruction and virtual noncalcium images were used. Specificity remained unchanged (99% and 100%). Diagnostic confidence in the exclusion of fracture was improved with combined bone reconstruction and virtual noncalcium images (median score: 10, 9, and 10 for readers 1, 2, and 3, respectively) compared with bone reconstruction images alone (median score: 9, 8, and 9). Conclusion When used as a supplement to standard bone reconstructions, dual-energy CT virtual noncalcium images increased sensitivity for the detection of nondisplaced traumatic hip fractures and improved diagnostic confidence in the

exclusion of these fractures. © RSNA, 2017 Online supplemental material is available for this article. An earlier incorrect version of this article appeared online. This article was corrected on March 17, 2017.

Economic Burden of Inpatient Admission of Ankle Fractures.

Author(s): Stull, Justin D; Bhat, Suneel B; Kane, Justin M; Raikin, Steven M

Source: Foot & ankle international; Sep 2017; vol. 38 (no. 9); p. 997-1004

Publication Type(s): Journal Article

Abstract:BACKGROUNDAnkle fractures are among the most prevalent traumatic orthopaedic injuries. A large proportion of patients sustaining operative ankle fractures are admitted directly from the emergency department prior to operative management. In the authors' experience, however, many closed ankle injuries may be safely and effectively managed on an outpatient basis. The aim of this study was to characterize the economic impact of routine inpatient admission of ankle fractures.METHODSA retrospective review of all outpatient ankle fracture surgery performed by a single foot and ankle fellowship-trained surgeon at a tertiary level academic center in 2012 was conducted to identify any patients requiring postoperative inpatient admission. The National Inpatient Sample was queried for operative management of lateral malleolus, bimalleolar, and trimalleolar ankle fractures in 2012 with regard to national estimates of total volume and length of stay by age. The maximum allowable Medicare inpatient facility reimbursements for diagnosis related group 494 and Medicare outpatient facility reimbursements for Current Procedural Terminology codes 27792, 27814, and 27822 were obtained from the Medicare Acute Inpatient Prospective Pricer and the Medicare Outpatient Pricer Code, respectively. Private facility reimbursement rates were estimated at 139% of inpatient Medicare reimbursement and 280% of outpatient reimbursement, as described in the literature. Surgeon and anesthesiologist fees were considered similar between both inpatient and outpatient groups. A unique stochastic decision-tree model was derived from probabilities and associated costs and evaluated using modified Monte Carlo simulation.RESULTSOf 76 lateral malleolar, bimalleolar, and trimalleolar ankle fracture open reduction internal fixation cases performed in 2012 by the senior author, 9 patients required admission for polytrauma, medical comorbidities, or age. All 67 outpatients were discharged home the day of surgery. In the 2012 national cohort analyzed, 48,044 estimated inpatient admissions occurred postoperatively for closed ankle fractures. The median length of stay was 3 days for each admission and was associated with an estimated facility reimbursement ranging from $12,920 for Medicare reimbursement of lateral malleolus fractures to $18,613 for private reimbursement of trimalleolar fractures. Outpatient facility reimbursements per case were estimated at $4,125 for Medicare patients and $11,459 for private insurance patients. Nationally, annual inpatient admissions accounted for $796,033,050 in reimbursements, while outpatient surgery would have been associated with $419,327,612 for treatment of these same ankle fractures.CONCLUSIONIn the authors' experience, closed lateral malleolus, bimalleolar, and trimalleolar fractures were safely and effectively treated on an outpatient basis. Routine perioperative admission of patients sustaining ankle fractures likely results in more than $367 million of excess facility reimbursements annually in the United States. Even if a 25% necessary admission rate were assumed, routine inpatient admission of ankle fractures would result in a $282 million excess economic burden annually in the United States. Although in certain cases, inpatient admission may be necessary, with value-based decision making becoming increasingly the responsibility of the orthopaedic surgeon, understanding the implications of inpatient stays for ankle fracture surgery can ultimately result in cost savings to the US health care system and patients individually.LEVEL OF EVIDENCELevel III, comparative series.

Pure distraction injury of T1-2 with quad fever.

Author(s): Seo, Jun-Yeong; Lim, Chae-Moon; Kim, Young-Hoon; Ha, Kee-Yong

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; Aug 2017

Publication Type(s): Journal Article

Abstract:INTRODUCTIONWe report a pure distraction injury of the upper thoracic spine and uncontrolled hyperthermia without an infectious cause. Quad fever appears in the first several weeks to months after a cervical or upper thoracic SCI and is characterized by an extreme elevation in body core temperature beyond 40 °C without an infectious cause. Discriminating between infectious and noninfectious causes is important, and a thorough clinical assessment is required.MATERIALS AND METHODSA 52-year-old male visited the emergency room complaining of back pain with complete paralysis [American Spinal Injury Association (ASIA) A] of both lower extremities after a pedestrian-motor vehicle accident. He had trouble breathing due to a hemothorax and flail chest caused by fractures of the right second to eleventh and left fourth to seventh ribs. A computed tomography scan revealed severe distraction of the T1-2 intervertebral space. A magnetic resonance image showed signal changes in the spinal cord and a clean-cut margin between the T1-2 disc and T2 body. The neurological level of injury was C8 upon the initial neurological assessment. Emergency surgery was performed. C6-T3 posterior instrumentation and an autologous iliac bone graft were performed.RESULTSAfter surgery, the core temperature increased gradually to above 38.0 °C on post-trauma day 4 and increased to 40.8 °C on post-trauma day 7. None of the repeated aerobic, anaerobic, or fungal cultures of the blood, tracheal aspirate, line tips, urine, or stool was positive until post-trauma day 21, when Candida tropicalis was identified in the urine culture. On post-trauma day 63, the blood pressure, pulse, and body temperature stabilized and the patient was transferred to the general ward. At post-trauma year 6, the injury state was still complete and the neurological level of injury was changed to C4.CONCLUSIONSBased on the Grand Round case and relevant literature, we discuss the case of pure distraction injury of T1-2 with quad fever. Spinal surgeons should be knowledgeable regarding quad fever as well as the differential diagnoses and treatment strategies.

Utility of the simplified Wells and revised Geneva scores to exclude pulmonary embolism in femur fracture patients.

Author(s): Kim, Youn-Jung; Choi, Dae-Hee; Lee, Eu Sun; Ryoo, Seung Mok; Ahn, Shin

Source: The American journal of emergency medicine; Aug 2017; vol. 35 (no. 8); p. 1131-1135

Publication Type(s): Journal Article

Abstract:OBJECTIVESThe diagnosis of acute pulmonary embolism (PE) in trauma patients is challenging. This study evaluated the diagnostic value of simplified Wells and simplified revised Geneva scores to predict PE in femur fracture patients in emergency department (ED).METHODSAll consecutive adult patients with femur fractures and elevated D-dimer levels (>0.5μg/mL) who underwent CTPA within 72h of injury from January 2010 to December 2014 were included. The simplified Wells and simplified revised Geneva scores were applied to evaluate the clinical probability of PE.RESULTSAmong 519 femur fracture patients, 446 patients were finally included, and 23 patients (5.2%) were diagnosed with acute PE. The median values of simplified Wells and simplified revised Geneva scores [0 (IQR: 0-1) vs. 0 (IQR: 0-0), P=0.23; 3 (IQR: 2-4) vs. 3 (IQR: 2-3), P=0.48] showed no differences between the PE (n=23) and non-PE (n=423) groups. Using the simplified Wells score, 98% of the patients were categorized into the "PE unlikely" group. The sensitivity, specificity, positive predictive value, and negative predictive value of the simplified revised Geneva score (≥3 points) for the diagnosis of PE were 74%, 35%, 6%, and 96%, respectively.CONCLUSIONIn femur fracture patients with elevated D-dimer levels, the simplified Wells and simplified revised Geneva scores have limited predictive value. However, the simplified revised Geneva score of <3 points may be possibly used as a diagnostic tool.

The effect of time to surgery on functional ability at six weeks in a hip fracture population in Mid-West Ireland.

Author(s): Butler, Audrey; Hahessy, Sinead; Condon, Finbarr

Source: International journal of orthopaedic and trauma nursing; Aug 2017; vol. 26 ; p. 36-42

Publication Type(s): Journal Article

Abstract: Patients with a hip fracture may be appropriately delayed for surgery as they require optimisation or clinical interventions to treat acute medical illnesses (Moja et al., 2012). Other patients are inappropriately delayed due to hospital factors (Brener, 2013; Lee & Elfar, 2014). Timely efficient admission and surgery is well documented as the best course of management for these patients. The aim of this prospective cohort longitudinal follow-up study was to establish if a relationship existed between duration of time spent in the Emergency Department (ED), time to surgery and functional ability in patients with hip fractures and to examine the effect prolonged waits may have on ability to return home. Functional ability for fifty one patients with a hip fracture was evaluated using the Barthel Index Score (BIS) on admission and at six weeks post-surgery. Data were analysed by using SPSS version 20. The findings reveal a change in BIS at 6 weeks for patients whose surgery is delayed. Patients who experienced long delays awaiting admission (>12 h) in the ED functioned less well (Kruskal-Wallis test p = 0.033). Correlation existed between time to surgery and returning to pre-fracture place of residence, (p = 0.000 Pearson chi-square), which also remained significant while controlling for age. Prolonged waits had an overall negative impact on patients' post-fracture functional ability. This study highlights the deleterious effects on functional ability when surgery is delayed.

Diagnostic accuracy of ultrasound for identifying shoulder dislocations and reductions: A systematic review of the literature

Author(s): Gottlieb M.; Russell F.

Source: Western Journal of Emergency Medicine; Aug 2017; vol. 18 (no. 5); p. 937-942

Publication Date: Aug 2017

Publication Type(s): Review

Available in full text at Western Journal of Emergency Medicine - from National Library of Medicine

Abstract: Introduction: Patients with shoulder dislocations commonly present to the emergency department. Ultrasound has the potential to save time, radiation exposure, healthcare costs, and possible need for re-sedation. We conducted this systematic review to compare the diagnostic accuracy of ultrasound compared with plain radiography in the assessment of shoulder dislocations. Methods: We searched PubMed, Scopus, the Cochrane Database of Systematic Reviews, and the Cochrane Central Register of Controlled Trials for relevant trials. Primary data and test characteristics were obtained for all included studies. We used QUADAS-2 to assess study quality. Meta-analysis was not performed due to significant heterogeneity. Results: Four studies met our inclusion criteria, comprising 531 assessments with 202 dislocations. Most studies had a sensitivity of 100% for identifying dislocations. One study demonstrated a sensitivity of 54%, and another had only one dislocation that was misidentified. All studies were 100% specific for detecting dislocation. Conclusion: Ultrasound may be considered as an alternative diagnostic method for the detection of shoulder dislocation and reduction, but further studies are necessary before routine use.

Less Is More: Efficacy of Rapid 3D-T2 SPACE in ED Patients with Acute Atypical Low Back Pain

Author(s): Koontz N.A.; Wiggins R.H.; Mills M.K.; McLaughlin M.S.; Pigman E.C.; Anzai Y.; Shah L.M.

Source: Academic Radiology; Aug 2017; vol. 24 (no. 8); p. 988-994

Publication Date: Aug 2017

Publication Type(s): Article

Abstract: Rationale and Objectives Emergency department (ED) patients with acute low back pain (LBP) may present with ambiguous clinical findings that pose diagnostic challenges to exclude cauda equina syndrome (CES). As a proof of concept, we aimed to determine the efficacy of a rapid lumbar spine (LS) magnetic resonance imaging (MRI) screening protocol consisting of a single 3D-T2 SPACE FS (3D-T2 Sampling Perfection with Application optimized Contrasts using different flip angle Evolution fat saturated) sequence relative to conventional LS MRI to exclude emergently treatable pathologies in this complex patient population. Materials and Methods LS MRI protocol including a sagittal 3D-T2 SPACE FS pulse sequence was added to the routine for ED patients presenting with acute atypical LBP over a 12-month period. Imaging findings were categorically scored on the 3D-T2 SPACE FS sequence and separately on the reference standard conventional LS MRI sequences. Patients' symptoms were obtained from review of the electronic medical record. Descriptive test statistics were performed. Results Of the 206 ED patients who obtained MRI for acute atypical LBP, 118 (43.3 +/- 13.5 years of age; 61 female) were included. Specific pathologies detected on reference standard conventional MRI included disc herniation (n = 30), acute fracture (n = 3), synovial cyst (n = 3), epidural hematoma (n = 2), cerebrospinal fluid leak (n = 1), and leptomeningeal metastases (n = 1), and on multiple occasions these pathologies resulted in nerve root impingement (n = 36), severe spinal canal stenosis (n = 13), cord/conus compression (n = 2), and cord signal abnormality (n = 2). The 3D-T2 SPACE FS sequence was an effective screen for fracture (sensitivity [sens] = 100%, specificity [spec] = 100%), cord signal abnormality (sens = 100%, spec = 99%), and severe spinal canal stenosis (sens = 100%, spec = 96%), and identified cord compression not seen on reference standard. Motion artifact was not seen on the 3D-T2 SPACE FS but noted on 8.5% of conventional LS MRI. Conclusions The 3D-T2 SPACE FS sequence MRI is a rapid, effective screen for emergently actionable pathologies that might be a cause of CES in ED patients presenting with acute atypical LBP. As this abbreviated, highly sensitive sequence requires a fraction of the acquisition time of conventional LS MRI, it has the potential of contributing to increased efficiencies in the radiology department and improved ED throughput.

Improving identification of auto accident concussions using the concussion prediction index (CPI)

Author(s): Clionsky M.; Clionsky E.

Source: Brain Injury; 2017; vol. 31 (no. 6); p. 808-809

Publication Date: 2017

Publication Type(s): Conference Abstract

Abstract: Introduction: Concussions or mild TBI have been extensively studied in sports, but not as much in automobile accidents. Because concussions are rarely observed directly in auto trauma, they are often underdiagnosed in emergency settings and outpatient rehabilitation programmes. While diagnosis is straightforward in patients who struck their heads and lost consciousness, many without direct head trauma or with no observed loss of consciousness will develop symptoms of Post-concussional Syndrome (PCS). PCS often reflects an important neurological injury that impairs cognition, mood and function. Better assessment would document injury, avoid potential second impacts from premature return to sports and guide accommodations for school and jobs.
[ABSTRACT EDITED]

Sports Injuries

Internal Carotid Artery Dissection After Indirect Blunt Cervical Trauma in an Ice Hockey Goaltender.

Author(s): Degen, Ryan M; Fink, Matthew E; Callahan, Lisa; Fibel, Kenton; Ramsay, Jim; Kelly, Bryan T

Source: American journal of orthopedics (Belle Mead, N.J.); ; vol. 46 (no. 3); p. E139

Publication Type(s): Journal Article

Abstract: Internal carotid artery dissections are rare injuries that can result from both direct cervical trauma and indirect trauma causing sudden cervical hyperextension. Depending on the magnitude of the dissection, clinical presentation ranges from neurologic symptoms, such as Horner syndrome, to relatively mild but persistent headache symptoms, as in the case reported in this article. High clinical suspicion with subsequent neuroimaging is recommended in similar clinical scenarios. Our patient, an ice hockey goaltender, was conservatively treated with rest and serial neuroimaging studies to ensure resolution of the dissection. Eight weeks later, he returned to athletic competition with resolved symptoms and radiologically improved arterial stenosis.

Sports-Related Emergency Preparedness in Oregon High Schools.

Author(s): Johnson, Samuel T; Norcross, Marc F; Bovbjerg, Viktor E; Hoffman, Mark A;

Source: Sports health; ; vol. 9 (no. 2); p. 181-184

Publication Type(s): Journal Article

Abstract:BACKGROUNDBest practice recommendations for sports-related emergency preparation include implementation of venue-specific emergency action plans (EAPs), access to early defibrillation, and first responders-specifically coaches-trained in cardiopulmonary resuscitation and automated external defibrillator (AED) use. The objective was to determine whether high schools had implemented these 3 recommendations and whether schools with a certified athletic trainer (AT) were more likely to have done so.HYPOTHESISSchools with an AT were more likely to have implemented the recommendations.STUDY DESIGNCross-sectional study.LEVEL OF EVIDENCELevel 4.METHODSAll Oregon School Activities Association member school athletic directors were invited to complete a survey on sports-related emergency preparedness and AT availability at their school. Chi-square and Fisher exact tests were used to analyze the associations between emergency preparedness and AT availability.RESULTSIn total, 108 respondents (37% response rate) completed the survey. Exactly half reported having an AT available. Only 11% (95% CI, 6%-19%) of the schools had implemented all 3 recommendations, 29% (95% CI, 21%-39%) had implemented 2, 32% (95% CI, 24%-42%) had implemented 1, and 27% (95% CI, 19%-36%) had not implemented any of the recommendations. AT availability was associated with implementation of the recommendations ($\chi 2 = 10.3$, $P = 0.02$), and the proportion of schools with ATs increased with the number of recommendations implemented ($\chi 2 = 9.3$, $P < 0.01$). Schools with an AT were more likely to implement venue-specific EAPs (52% vs 24%, $P < 0.01$) and have an AED available for early defibrillation (69% vs 44%, $P = 0.02$) but not more likely to require coach training (33% vs 28%, $P = 0.68$).CONCLUSIONSDespite best practice recommendations, most schools were inadequately prepared for sports-related emergencies. Schools with an AT were more likely to implement some, but not all, of the recommendations. Policy changes may be needed to improve implementation.CLINICAL RELEVANCEMost Oregon high schools need to do more to prepare for sports-related emergencies. The results provide evidence for sports medicine professionals and administrators to inform policy changes that ensure the safety of athletes.

Facial Trauma in Sports.

Author(s): Leinhart, James; Toldi, James; Tennison, Matthew

Source: Current sports medicine reports; ; vol. 16 (no. 1); p. 23-29

Publication Type(s): Journal Article

Available in full text at Current sports medicine reports [Curr Sports Med Rep] NLMUID: 101134380 - from EBSCOhost

Abstract: Injuries resulting from facial trauma are common in all sports. Athlete-to-athlete contact, falls, and blows from equipment account for the majority of these events. Appropriate knowledge of basic science, relevant anatomy, and clinical skills is required to provide the correct medical care. While true medical emergencies are infrequent, a prompt accurate diagnosis is essential in developing targeted management and return to play options.

Successful Treatment of Painful Synchondrosis of Bipartite Patella after Direct Trauma by Operative Fixation: A Series of Six Cases.

Author(s): Radha, Sarkhell; Shenouda, Michael; Konan, Sujith; Lavelle, Jonathon; Church, Samuel

Source: The open orthopaedics journal; 2017; vol. 11 ; p. 390-396

Publication Date: 2017

Publication Type(s): Journal Article

PubMedID: 28603570

Available in full text at Open Orthopaedics Journal, The - from National Library of Medicine

Abstract:INTRODUCTIONThe patella is the largest sesamoid bone in the body and may have one (77%) or multiple (23%) ossification centres. Patellar and patellofemoral joint abnormalities are a common cause of anterior knee pain but symptomatic bipartite patella is an uncommon problem.CASE SERIESWe report a series of six cases of painful synchondrosis in bipartite patellae, all in keen athletes following a direct blow to the anterior aspect of the knee. A complete rupture of the synchondrosis with evidence of retropatellar chondral separation was seen on MRI scan in all cases. Successful surgical fixation was undertaken with complete resolution of symptoms in all patients at an average of three months post-operatively.CONCLUSIONPainful synchondrosis of a bipartite patella in young and active individuals following direct trauma is a relatively rare cause of anterior knee pain, but may be associated with significant morbidity. In cases refractory to non-operative management, successful symptomatic treatment can be achieved by operative fixation.

The influence of sex and trauma impact on the rupture site of the ulnar collateral ligament of the thumb.

Author(s): Boesmueller, Sandra; Huf, Wolfgang; Rettl, Gregor; Dahm, Falko; Meznik, Alexander; Muschitz, Gabriela; Kitzinger, Hugo; Bukaty, Adam; Fialka, Christian; Vierhapper, Martin

Source: PloS one; 2017; vol. 12 (no. 7); p. e0181754

Publication Type(s): Journal Article

Available in full text at PLoS One - from ProQuest

Abstract:PURPOSE AND HYPOTHESISAlthough sex- and gender-specific analyses have been gaining more attention during the last years they have rarely been performed in orthopaedic literature. The primary purpose of this study was to investigate whether for injuries of the UCL the specific location of the rupture is influenced by sex. A secondary study question addressed the sex-independent effect of trauma intensity on the rupture site of the UCL.METHODSThis study is a retrospective analysis of all patients with either a proximal or distal bony avulsion or with a mid-substance tear or ligament avulsion of the UCL treated surgically between 1992 and 2015 at two level-I trauma centres. Trauma mechanisms leading to the UCL injury were classified into the following categories:

(1) blunt trauma (i.e., strains), (2) low-velocity injuries (e.g., fall from standing height, assaults), and (3) high-velocity injuries (e.g., sports injuries, motor vehicle accidents). After reviewing the surgical records, patients were divided into three groups, depending upon the ligament rupture site: (1) mid-substance tears, (2) proximal ligament or bony avulsions and (3) distal ligament or bony avulsions. Dependencies between the specific rupture site and the explanatory variables (sex, age, and trauma intensity) were evaluated using χ2 test and logistic regression analysis.RESULTSIn total, 1582 patients (1094 males, 488 females) met the inclusion criteria. Mean age was 41 years (range: 9-90 years). Taking into account the effects of sex on trauma intensity ($p<0.001$) and of trauma intensity on rupture site ($p<0.001$), mid-substance tears occurred more frequently in women, whereas men were more prone to distal ligament or bony avulsions ($p<0.001$). In other words, sex and rupture site correlated due to the effects of sex on trauma intensity and of trauma intensity on rupture site, but taking into account those effects there still was a significant effect of sex on rupture site.CONCLUSIONSThe results of this study demonstrate that with regression analysis both sex and trauma intensity allow to predict rupture site in UCL injuries.

Multi-directional dynamic injury metric for mild brain trauma detection

Author(s): Laksari K.; Wu L.; Nguyen T.; Camarillo D.; Kurt M.; Fanton M.; Ruan J.; Barbat S.

Source: Journal of Neurotrauma; 2017; vol. 34 (no. 13)

Publication Date: 2017

Publication Type(s): Conference Abstract

Abstract: Background: Mild traumatic brain injury (mTBI), or concussion, has received heightened awareness due to its devastating effects on professional athletes, military personnel and more broadly general public. Mounting evidence suggests heightened risk of chronic neurodegeneration with repeated mTBI. Return to play guidelines and legislations try to protect athletes from repeat trauma, which is the implicated cause of long term brain damage. Despite increasing awareness of mTBI, timely diagnosis and prevention of repeat injury are difficult due to a lack of understanding of injury mechanisms. Methods: We included human injury (49) and non-injury (1140) datasets from multiple loading regimes, including football head impacts, soccer headers, voluntary headmotions and car accidents.We investigated multiple established kinematics injury metrics, and also used a novel under-damped lumped-parameter model in 3 dimensions to represent the brain-skull interface, whichwas validated finite element simulation results. Results and Discussion: We fitted a multi-regression logistic model to classify the injured and non-injured kinematics, and we compared the performances using deviance, area under the receiveroperating curve. Various metrics fared differently in different loading conditions of loading magnitude and duration, therefore a model accounting both head kinematics and brain-skull dynamics showed superior classifying performance. Conclusion: In this study, we used a combination of datasets from contact sports, voluntary experiments and car accidents to develop a lumped-parameter multi-directional metric that takes into account both the head kinematics and skull-brain dynamics. We formally compensated for the effect of incidence rate in contact sports in developing the metric and showed that it significantly affects the injury threshold. We showed that current government endorsed metrics such as BrIC perform reasonably well in the high angular velocity regimes (longer durations) but not as well in high acceleration regimes (shorter durations).

Spatial and temporal deformation patterns of the brain under blunt and blast trauma

Author(s): Ali A.; Chandra N.; Pfister B.

Source: Journal of Neurotrauma; 2017; vol. 34 (no. 13)

Publication Type(s): Conference Abstract

Abstract: It is widely accepted that trauma to the head causes the brain to deform inside the skull, creating large strains that cause damage. It is unknown, however, how the brain deforms in many types of trauma such as sports contact, falls and exposure to blasts. We hypothesize that each trauma to the head will lead to distinct magnitudes and rates of deformation that varies spatially and temporally across the brain. The objective of this study was to recreate spatial and temporal deformations that are likely to occur in blast and blunt injuries. For this study a full scale human head surrogate was created from a PVC skull, ballistic gel brain, and hybrid III anthropomorphic neck. Blunt injuries were created with a 2 kg impactor on a drop tower system at velocities of 3&5 mph. For blast injury overpressures of 180 kPa were generated in a field-validated shock tube. Markers in the brain were motion tracked from high speed video and analyzed to compute skull deflections, principal strains and the associated strain rates across the brain. Contour maps were generated to view the spatial and temporal distribution of strains caused by each injury event. In blunt injury, the span and degree of tissue deformation were localized in particular regions and unique to the biomechanical parameters of the blunt injury event (velocity, momentum, direction). 5 mph impacts induced higher strains than 3 mph while crown injuries caused larger skull deflections as well as higher strains and rates than frontal impacts. Preliminary blast experiments produced more widely distributed contour profiles of strain fields within the brain. Maximum principal tensile, compressive, and shear strains were surprisingly high 52-55% that oscillate and decay over several seconds. The data from these experiments may help to identify vulnerable injury sites with more understanding of the relative effects of specific injury loading conditions. This model can act as a platform to build more complex and biofidelic heads as well as a metric to evaluate helmet designs.

Awareness of dental trauma management at combat sport

Author(s): Cimic S.; Luksic I.; Luznik Z.; Kopic M.

Source: Research Journal of Pharmaceutical, Biological and Chemical Sciences; 2017; vol. 8 (no. 4); p. 469-473

Publication Type(s): Article

Abstract: The purpose of this study was to investigate awareness of possible tooth replantation after avulsion and awareness of optimal time for tooth replantation at different combat sports. Study included 56 participants (average 26,7 +/- 9,3 years). All responses were collected with anonymous electronic survey which was sent to different combat sports clubs in Croatia. Survey recorded type of combat sport, past dental traumas, loss of consciousness, awareness of possible tooth replantation and awareness of optimal period for replantation. 42 participants (75,0 %) did not experience dental trauma. Two participants (3,6%) had tooth avulsion, 11 (19,6 %) tooth fracture and 1 participant (1,8 %) had tooth dislocation. Eleven participants (19,6 %) experienced loss of consciousness during sparing of fight. Twenty eight participants (50 %) responded negatively on question "Do You know that avulsed tooth can be replanted". Nine participants (16,1 %) new optimal time for tooth replantation. Combat sports fighters showed low level of knowledge about tooth avulsion and replantation, and low level of knowledge about optimal time for tooth replantation. It is necessary to provide knowledge about dental traumas and dental trauma management information to all combat sports participants, especially fighters.

Epidemiologic comparisons of soccer-related injuries presenting to emergency departments and reported within high school and collegiate settings.

Author(s): Kerr, Zachary Y; Pierpoint, Lauren A; Currie, Dustin W; Wasserman, Erin B;

Source: Injury epidemiology; Dec 2017; vol. 4 (no. 1); p. 19

Publication Date: Dec 2017

Publication Type(s): Journal Article

PubMedID: 28670666

Abstract:BACKGROUNDFew studies compare sports injury patterns in different settings. This study described the epidemiology of soccer injuries presenting to emergency departments (EDs) and compared injuries presenting to EDs to injuries presenting to collegiate and high school athletic trainers (ATs).METHODSSoccer-related injuries (product code 1267) in the National Electronic Injury Surveillance System (NEISS) that were sustained by individuals at least two years of age in 2004-2013 were included. High School Reporting Information Online (HS RIO) data for high school soccer injuries during the 2005/06-2013/14 academic years were compared to NEISS data for those aged 14-17 years in 2005-2013. National Collegiate Athletic Association Injury Surveillance Program (NCAA-ISP) data for collegiate soccer injuries during the 2009/10-2013/14 academic years were compared to NEISS data for those aged 18-22 years in 2009-2013. All datasets included weights to calculate national estimates. Injury proportion ratios (IPRs) with 95% confidence intervals (CIs) compared nationally estimated injury distributions between the HS RIO/NCAA-ISP and NEISS data subsets.RESULTSDuring the study period, 63,258 soccer-related injuries were captured by NEISS, which translates to an estimated 2,039,250 injuries seen at US EDs nationwide. Commonly injured body parts included the head/face (19.1%), ankle (17.6%), hand/wrist (15.3%), and knee (12.2%). Common diagnoses included sprains/strains (34.0%), fractures (22.2%), and contusions (17.7%). Compared to their respective age ranges in NEISS, sprains/strains comprised a larger proportion of injuries in HS RIO (48.3% vs. 33.7%; IPR = 1.38; 95% CI: 1.33, 1.42) and NCAA-ISP (51.3% vs. 37.0%; IPR = 1.39; 95% CI: 1.31, 1.46). In contrast, fractures comprised a smaller proportion of injuries in HS RIO than in NEISS (7.5% vs. 18.6%; IPR = 0.43; 95% CI: 0.39, 0.47) and NCAA-ISP (2.8% vs. 15.7%; IPR = 0.18; 95% CI: 0.14, 0.22).CONCLUSIONSATs more commonly reported injuries that are easily diagnosed and treated (e.g., sprains/strains); EDs more commonly reported injuries with longer recovery times and rehabilitation (e.g., fractures). Although ED surveillance data can identify the most severe sports-related injuries, high school and college sports surveillance may better describe the breadth of sports-related injuries. Our findings may provide further support for school-based sports medicine professionals, but further research is needed to comprehensively examine the potential economic and health-related benefits.

Head impact in a snowboarding accident.

Author(s): Bailly, N; Llari, M; Donnadieu, T; Masson, C; Arnoux, P J

Source: Scandinavian journal of medicine & science in sports; Sep 2017; vol. 27 (no. 9); p. 964-974

Publication Type(s): Journal Article

Abstract: To effectively prevent sport traumatic brain injury (TBI), means of protection need to be designed and tested in relation to the reality of head impact. This study quantifies head impacts during a typical snowboarding accident to evaluate helmet standards. A snowboarder numerical model was proposed, validated against experimental data, and used to quantify the influence of accident conditions (speed, snow stiffness, morphology, and position) on head impacts (locations, velocities, and accelerations) and injury risk during snowboarding backward falls. Three hundred twenty-four scenarios were simulated: 70% presented a high risk of mild TBI (head peak acceleration >80 g) and 15% presented a high risk of severe TBI (head injury criterion >1000). Snow stiffness, speed, and snowboarder morphology were the main factors influencing head impact metrics. Mean normal head impact speed (28 ± 6 km/h) was higher than equivalent impact speed used in American standard helmet test (ASTM F2040), and mean tangential impact speed, not included in standard tests, was 13.8 (±7 km/h). In 97% of simulated impacts, the peak head acceleration was below 300 g, which is the pass/fail criteria used in standard tests. Results suggest that initial speed, impacted surface, and pass/fail criteria used in helmet standard performance tests do not fully reflect magnitude and variability of snowboarding backward-fall impacts.

Blunt airway trauma with cricoid fracture

Author(s): Milton A.; Nellgard P.

Source: Acta Anaesthesiologica Scandinavica; Sep 2017; vol. 61 (no. 8); p. 1034

Publication Date: Sep 2017

Publication Type(s): Conference Abstract

Abstract: Background: Severe blunt trauma of the airway is rare but potentially lethal due to airway occlusion. Over a ten-year period five severe laryngeal fractures have been successfully intubated using flexible bronchoscopy at our hospital. Methods: We report a recent case of severe cricoid trauma surviving emergency airway management. Results: While doing lunges on a box, a 22 year-old female athlete, exercising at the gym with a more than 100-kilogram bar on her shoulders, fell forwards and crushed her anterior neck on the edge. During the ambulance ride she was awake under respiratory distress with a patent but unstable airway. Her oxygen saturation (SpO2) was around 85% on air. At the emergency department her airway totally occluded after slight manipulation of the larynx. A rapid sequence induction of general anaesthesia was performed and two unsuccessful attempts at intubation were made. Her laryngeal inlet was fully occluded, and she had subcutaneous emphysema and swelling of soft tissues of the neck. An attempt at cricothyroidotomy was made, but ventilation was impossible after insertion of a tube into what was assumed to be the trachea. A low tracheostomy was instead attempted, and after the third attempt at cannulation, the patient was successfully ventilated. At this point she was bradycardic with SpO2 65%. Radiography showed bilateral pneumothorax and a stable fracture of a cervical transversal process. Conclusions: Give nasal or oral high-flow oxygen in a patient with a patent airway. Consider surgical tracheostomy in local anaesthesia as the first choice in suspected or verified cricoid fracture with risk for airway occlusion. Try flexible bronchoscopy in patients with suspected or verified laryngeal fracture. Ventrain transtracheal ventilation or supply of oxygen in patients with total occlusion of the upper airways.

Blunt injuries related to equestrian sports: results from an international prospective trauma database analysis.

Author(s): Weber, Christian D; Nguyen, Anthony R; Lefering, Rolf; Hofman, Martijn;

Source: International orthopaedics; Aug 2017

Publication Type(s): Journal Article

Abstract:INTRODUCTIONThe objective of this study was to investigate the nature, management, and outcome of major injuries related to equestrian sports and to define the at-risk groups for serious and life-threatening injuries.METHODSWe analyzed demographic, pre-hospital, clinical, and outcome data from an international population-based prospective trauma database (TraumaRegister DGU®). Patients with major injuries (Injury Severity Score [ISS] ≥9 points) related to equestrian sports activities were included (January 1, 1993, to December 31, 2012). Clinical and outcome parameters were stratified for four different types of injury mechanisms: fall from horse (FFH), horse-kick (HK), horse crush (HC), and carriage-related accidents (CRA). Participating countries included Germany, Austria, Switzerland, Finland, Slovenia, Belgium, Luxembourg, and The Netherlands. Statistical analyses were performed with SPSS (Version 22, IBM Inc., Armonk, NY).RESULTSThe Database identified 122,000 documented patients, of whom 679 were equestrian incidents. Among these, the four major injury mechanisms were: FFH (n = 427), HK (n = 188), HC (n = 34), and the CRA (n = 30). Females were more likely to sustain FFH (75.5%, $p < 0.001$), leading to head injuries (n = 204, 47.8%) and spinal fractures (n = 109, 25.5%). HK injuries often resulted in facial fractures (29.3%, $p < 0.001$). Individuals sustaining HC injuries had a high risk for pelvic (32.4%, $p < 0.001$) and abdominal injuries (35.2%, $p < 0.001$). In contrast to the FFH cohort, the CRA cohort involved older males

(57 ± 13 years), with chest (63.3% p = 0.001), and extremity injuries, resulting in significant injury severity (ISS 20.7 ± 10.6). In the CRA cohort, 16% were in haemorrhagic shock on scene, and also the highest in-hospital mortality (14.8%, p = 0.006) was observed.CONCLUSIONSYoung female riders are at risk from falling, horse-kicks, and crush-injuries. Older males in carriage-related accidents sustained the highest injury severity and mortality rate, and must specifically be targeted by future prevention initiatives. Level of evidence Descriptive Epidemiologic Study, Level II.

Blunt laryngeal trauma secondary to sporting injuries.

Author(s): Mendis, D; Anderson, J A

Source: The Journal of laryngology and otology; Aug 2017; vol. 131 (no. 8); p. 728-735

Publication Type(s): Journal Article

Abstract:BACKGROUNDLaryngeal injury after blunt trauma is uncommon, but can cause catastrophic airway obstruction and significant morbidity in voice and airway function. This paper aims to discuss a case series of sports-related blunt laryngeal trauma patients and describe the results of a thorough literature review.METHODRetrospective case-based analysis of laryngeal trauma referrals over six years to a tertiary laryngology centre.RESULTSTwenty-eight patients were identified; 13 (46 per cent) sustained sports-related trauma. Most were young males, presenting with dysphonia, some with airway compromise (62 per cent). Nine patients were diagnosed with a laryngeal fracture. Four patients were managed conservatively and nine underwent surgery. Post-treatment, the majority of patients achieved good voice outcomes (83 per cent) and all had normal airway function.CONCLUSIONSports-related neck trauma can cause significant injury to the laryngeal framework and endolaryngeal soft tissues, and most cases require surgical intervention. Clinical presentation may be subtle; a systematic approach along with a high index of suspicion is essential, as early diagnosis and treatment have been reported to improve airway and voice outcome.

Neurosurgical Emergencies in Sport.

Author(s): Sindelar, Brian; Bailes, Julian E

Source: Neurologic clinics; Aug 2017; vol. 35 (no. 3); p. 451-472

Publication Date: Aug 2017

Publication Type(s): Journal Article Review

PubMedID: 28673409

Abstract: Sports related severe brain and spinal cord injuries are medical and potentially surgical emergencies that require timely intervention in order to reduce worsening secondary injury. For this reason, it is important for all medical professionals managing athletic injuries to be knowledgeable in the clinical approach to this type of acute event. This article reviews the initial evaluation of the athlete that occurs on the field and also within the emergency department with a focus on presenting clinical signs of a neurosurgical emergency. We present a basic overview of the types of intracranial injuries requiring emergent neurosurgical intervention.

Retinal Detachment Associated With Basketball-Related Eye Trauma.

Author(s): Lee, Tsung-Han; Chen, Yi-Hao; Kuo, Hsi-Kung; Chen, Yung-Jen; Chen, Chih-Hsin; Lee, Jong-Jer; Wu, Pei-Chang

Source: American journal of ophthalmology; Aug 2017; vol. 180 ; p. 97-101

Publication Date: Aug 2017

Publication Type(s): Journal Article

Abstract:PURPOSEBasketball is a popular sport involving significant body contact, which may frequently result in ocular trauma. The aim of this study was to evaluate the characteristics and visual outcomes of retinal detachment associated with basketball-related injury.DESIGNRetrospective, interventional case series.METHODSWe reviewed the course of patients who sustained traumatic retinal detachment from basketball-related ocular trauma between 2003 and 2015.RESULTSThirteen patients were evaluated for basketball-related traumatic retinal detachment. Twelve (92%) were male and 1 (8%) female, with an average age of 18.2 years. The majority (9 of 13, 70%) of patients had moderate-to-high myopia, and none were using protective eyewear when they sustained the eye trauma. Rhegmatogenous retinal detachment was observed in all eyes. The preoperative mean visual acuity was 20/625 (range, hand motions to 20/20). Initial surgery using scleral buckling alone was performed in most (8 of 13, 62%) of the patients. Retinal reattachment was achieved in 10 (76%) eyes after the first operation and in 12 (92%) at the end of the intervention. The mean follow-up was 3.9 years (range, 4 months to 12 years). The visual acuity during last follow-up was 20/231 (range, light perception to 20/20). In the multivariable analysis, initial visual acuity was an independent factor affecting the final visual outcome (P = .006).CONCLUSIONRetinal detachment associated with basketball-related injury may cause severe visual loss. In the current study, all retinal detachments were of rhegmatogenous type and commonly occurred in young individuals with myopia. Initial visual acuity was associated with the prognosis. Risk awareness for early detection and intervention are important in these traumas.

Characterization of the morphological profiles at risk of a cervical spine accident by personalised modelling of the finite element

Author(s): Brauge D.; Laporte S.; Laniece A.; Laville A.; Skalli W.

Source: European Spine Journal; Jul 2017; vol. 26 (no. 7); p. 1982-1983

Publication Date: Jul 2017

Publication Type(s): Conference Abstract

Abstract: Introduction: The prevention of cervical spine accidents constitutes a major challenge in sports. Among the measures adopted, the screening of subjects most at risk constitutes a long period of medical examinations at the start of the season. Unfortunately, the guidelines published are more often based on expert recommendations than on real biomechanical or epidemiological works. We are presenting an original approach, the aim of which is to detect the morphological susceptibility to a serious cervical spine accident. **[ABSTRACT EDITED]**

Hip and Pelvis: MRI of Musculotendinous Trauma and Mimickers

Author(s): Tsifountoudis I.; Kraniotis P.; Karantanas A.H.

Source: Seminars in Musculoskeletal Radiology; Jul 2017; vol. 21 (no. 3); p. 218-239

Publication Date: Jul 2017

Publication Type(s): Article

Abstract: The spectrum of disorders in musculotendinous trauma (MTt) includes acute traumatic and subacute/chronic lesions caused by repetitive microtrauma. The imaging findings differ in the immature versus the mature skeleton in both categories. Sport-related MTt also depends on age, sex, and type of activity. Magnetic resonance imaging (MRI) is the modality of choice for exploring most MTt injuries and is invaluable for assessing severity and for planning management and return to activity. In some circumstances such as minimally displaced avulsion injuries, MRI findings need to be matched with plain radiographs or computed tomography. Ultrasonography is helpful in exploring superficial structures such as tendons, particularly if dynamic studies are required. Rarely,

inflammatory or neoplastic disorders may simulate MTt in the hip and pelvis.

Corrigendum...Krosshaug T, Steffen K, Kristianslund E, et al. The vertical drop jump is a poor screening test for ACL injuries in female elite soccer and handball players: a prospective cohort study of 710 athletes. Am J Sports Med . 2016;44(4):874-883.

Author(s):

Source: American Journal of Sports Medicine; Jul 2017; vol. 45 (no. 9)

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract: Krosshaug T, Steffen K, Kristianslund E, et al. The vertical drop jump is a poor screening test for ACL injuries in female elite soccer and handball players: a prospective cohort study of 710 athletes. Am J Sports Med. 2016;44(4):874-883. (Original DOI: 10.1177/0363546515625048)

Sports Medicine for the Emergency Physician: A Practical Handbook.

Author(s): Burg, Michael D.

Source: Academic Emergency Medicine; Jul 2017; vol. 24 (no. 7); p. 887-887

Publication Date: Jul 2017

Publication Type(s): Academic Journal

ERRATUM...Lebrun CM, Esfandiarpour F, Dhillon S, et al. In-Vivo Patellar Motion Under a Dynamic Weight-Bearing Condition in Individuals With Patellofemoral Pain Syndrome. Clin J Sport Med . 2016; e22 – e27.

Author(s):

Source: Clinical Journal of Sport Medicine; Jul 2017; vol. 27 (no. 4); p. 422-422

Publication Date: Jul 2017

Publication Type(s): Academic Journal

Abstract:A correction to the article "In-Vivo Patellar Motion Under a Dynamic Weight-Bearing Condition in Individuals With Patellofemoral Pain Syndrome," by C. M. Lebrun and colleagues that was published in the 2016 issue is presented.

Journal Tables of Contents

The most recent issues of the following journals:

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The American Journal of Sports Medicine

September 2017; Volume 45; Issue 11

British Journal of Sports Medicine

September 2017; Volume 51; Issue 18

Emergency Medicine Journal

September 2017; Volume 34; Issue 9

Spine

September 2017; Volume 42; Issue 17

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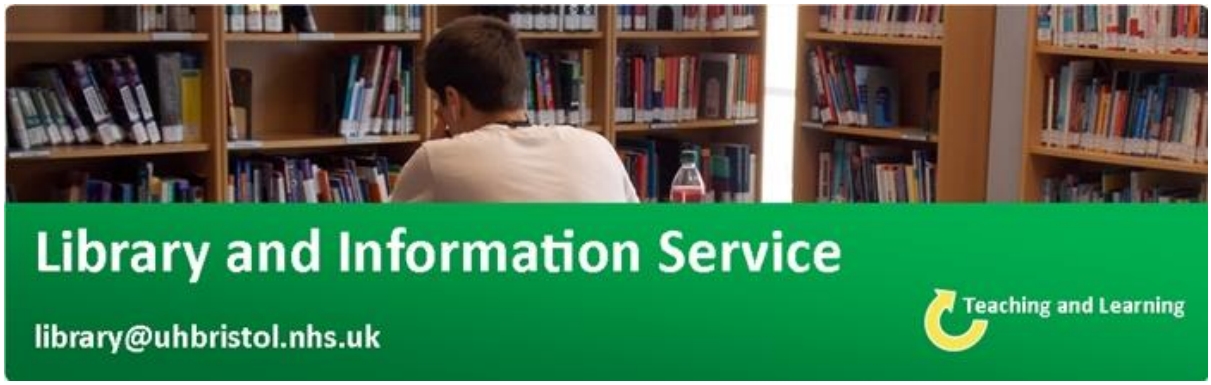
PICO: P = obese patients; I = chitosan; C = placebo; O = decrease weight
Research question: In obese patients, does chitosan, compared to a placebo, decrease weight?



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