### Training Calendar 2016

*All sessions are 1 hour*

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Your Outreach Librarian – Helen Pullen

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**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 1 to 1 session where we can guide you through the process of creating a well-focused literature research. Please email requests to [library@uhbristol.nhs.uk](mailto:library@uhbristol.nhs.uk)
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The Latest Evidence

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Journal Tables of Contents

The most recent issues of key journals. If you would like any of the papers in full text then please email the library: library@uhbristol.nhs.uk

Journal of Hand Surgery (British and European)

November 2016 41 (9)
http://jhs.sagepub.com/content/current

Journal of Hand Surgery (America)

October 41 (10)
http://www.jhandsurg.org/current

Journal of Hand Therapy

July-September 29 (3)
http://www.jhandtherapy.org/current
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?

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2. What would your research question be?

*Research question: In obese patients, does chitosan, compared to a placebo, decrease weight?*

*PICO: P = obese patients; I = chitosan; C = placebo; O = decrease weight*

Find out more about constructing an effective search strategy in one of our Literature searching training sessions.

For more details, email library@uhbristol.nhs.uk.
Current Awareness Database Articles

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

- Altered Neurodynamics upper limb
- Complex Regional Pain Syndrome (CRPS)
- De-Quervain’s tenosynovitis
- Dislocations Fingers (Proximal Interphalangeal Joints)
- Dupuytrens (fasciectomy)
- Flexor and Tendon Injuries
- Mallet Finger/Thumb Deformity
- Nerve Injuries
- Trapeziectomy (Osteoarthitis thumb)
- Trigger finger/thumb
- Ulnar Collateral ligament Sprain - Thumb
- Wrist and Finger fractures (distal radius/scaphoid)

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

Altered Neurodynamics upper limb

Complex Regional Pain Syndrome (CRPS)

Sensorimotor dysfunction after limb fracture - An exploratory study.

Source: European journal of pain (London, England); Oct 2016; vol. 20 (no. 9); p. 1402-1412
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Hall, J; Llewellyn, A; Palmer, S; Rowett-Harris, J; Atkins, R M; McCabe, C S

Abstract: Chronic pain is often associated with sensorimotor dysfunction but little is known about the early impact of limb fracture on sensory and motor performance. This exploratory study sought to assess these changes in patients with recent wrist and ankle fractures. A secondary aim was to determine the incidence of Complex Regional Pain Syndrome (CRPS) and its clinical features. Fifty-three patients at a UK fracture centre underwent Quantitative Sensory Testing (QST), Motor Imagery (MI) and Body Perception Disturbance (BPD) assessments ≤5 weeks post-fracture (Time 1). Subjective evaluation of recovery and clinical examination for CRPS was conducted 5 weeks later (Time 2, 50 patients). Patient-reported outcomes of pain, psychological distress and limb function were collected at Times 1 and 2, and 6 months after T1 (Time 3, 36 patients, postal questionnaire). Quantitative sensory testing at Time 1 demonstrated cold and pressure-pain hyperalgesia in the fractured limb compared to the non-fractured side (p < 0.05). Imagined movements were reported as significantly more difficult to perform on the fractured side (p < 0.001). There was evidence of
BPD in the fractured limb, similar to that found in CRPS. The incidence of CRPS was 9.4%; however, individual signs and symptoms of the condition were commonly present (70% reported ≥ one symptom). Only 33% of patients reported to being ‘back to normal’ 6 months after fracture with 34% reporting ongoing pain. Limb fracture is associated with changes in pain perceptions, motor planning, and disruption to body perception. Signs and symptoms of CRPS, ongoing pain and delayed recovery post-fracture are common. WHAT DOES THIS STUDY ADD?: In the immediate post-fracture period: Body perception disturbance is reported in the fractured limb. Imagined movements of the fractured limb are less vivid and associated with pain This study contributes to the incidence literature on CRPS. © 2016 European Pain Federation - EFIC®

De-Quervain's tenosynovitis

Sex differences in the radial grooves in the first extensor compartment.

Source: Skeletal radiology; Jul 2016; vol. 45 (no. 7); p. 955-958

Publication Date: Jul 2016

Publication Type(s): Journal Article

Author(s): Gurses, Ilke A; Turkay, Rustu; Inci, Ercan; Ors, Suna; Onal, Yilmaz; Ozel, Sevda; Vural, Meltem

Abstract: De Quervain tenosynovitis affects the first extensor compartment of the wrist and occurs more frequently in females. This high prevalence could not be explained by soft tissue. As the osseous anatomy has been mostly neglected, we aimed to compare the distal radius between the sexes. We evaluated the presence of a bony ridge on the floor of the first extensor compartment on CT images with multiplanar imaging. We included 244 wrists (72 females, 172 males) in the study. A bony ridge was present in 58 (23.8%) and absent in 186 (76.2%) wrists. A ridge was present in 24 (33.3%) wrists among females and 34 (19.8%) wrists among males. A groove with a bony ridge was statistically associated with females. We observed two tendon groove morphologies for the first extensor compartment. A groove with a bony ridge occurs more frequently in females. Further research is needed to clarify the relationship between the high frequency of a bony ridge and increased prevalence of de Quervain tenosynovitis in females.

Dislocations Fingers (Proximal Interphalangeal Joints)


Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 422-424

Publication Date: Oct 2016

Publication Type(s): Journal Article

Author(s): Mozaffarian, Kamran; Bayatpour, Abdollah; Vosoughi, Amir Reza

Abstract: Simultaneous volar dislocation of distal interphalangeal (DIP) joint and volar fracture-subluxation of proximal interphalangeal (PIP) joint of the same finger has not been reported yet. A 19-year-old man was referred due to pain on the deformed left little finger after a ball injury. Radiographs showed volar dislocation of the DIP joint and dorsal lip fracture of the middle phalanx with volar subluxation of PIP joint of the little finger. This case was unique in terms of the mechanism of injury which was hyperflexion type in two adjacent joints of the same finger. The
patient was treated by closed reduction of DIP joint dislocation and open reduction and internal fixation of the PIP joint fracture-subluxation and application of dorsal external fixator due to instability. Finally, full flexion of the PIP joint and full extension of the DIP joint were obtained but with 10 degree extension lag at the PIP joint and DIP joint flexion ranging from 0 degree to 30 degrees. Some loss of motion in small joints of the fingers after hyperflexion injuries should be expected.

Oligodactyly with Thumb.

Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 283-291
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Baek, Goo Hyun; Kim, Jihyeung

Abstract: Oligodactyly of the hand is one of the rarest congenital anomalies of upper extremities and defined as the presence of fewer than five fingers on a hand. Although it usually occurs in association with hypoplasia or absence of ulna, it can occur without abnormality of the forearm bones. The purpose of this study is to present clinical features and radiographic characteristics of hand oligodactyly with thumb. Five patients of oligodactyly with thumb who showed normal forearm bones, were evaluated. Two patients had threefingered hand with thumb, and three had two-fingered hand with thumb. We analyzed associated abnormalities of carpal and metacarpal bones and measured the lengths of radius and ulna, and width of the wrist on the simple radiographs. We also devised new classification system of oligodactyly based on the thumb deformities and locations of missing digits. Syndactyly among fingers was associated in four patients, clinodactyly caused by delta bone in one, hypoplasia of the thumb in one, camptodactylies in one, and radial head dislocation in one. Considering the abnormalities of the carpal bones, the missing digits were presumed to be ulnar-sided digits in two patients, central digits in one patient and both ulnar-sided and central digits in two patients. In patients with missing of central digits, an adjacent metacarpal was hypertrophied. Although the ulnar variances were within normal range, the average lengths of radius and ulna were 6% and 5% shorter than those of contralateral normal side. The average width of the wrist was 9% narrower than that of contralateral normal side. Syndactyly and hypertrophied metacarpal were most commonly observed findings in the oligodactyly with thumb. Although oligodactyly with thumb may be a type of ulnar longitudinal deficiency, however, it can also be a type of central deficiency or combined type of ulnar longitudinal deficiency with central deficiency or radial longitudinal deficiency. We suggest a classification system of oligodactyly with thumb based on locations of missing digits and associated thumb deformities.

Dupuytrens (fasciectomy)

Comparative Effectiveness of Percutaneous Needle Aponeurotomy and Limited Fasciectomy for Dupuytren's Contracture: A Multicenter Observational Study.

Source: Plastic and reconstructive surgery; Oct 2016; vol. 138 (no. 4); p. 837-846
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Zhou, Chao; Selles, Ruud W; Slijper, Harm P; Feitz, Reinier; van Kooij, Yara; Moojen, Thybout M; Hovius, Steven E R

Abstract: Percutaneous needle aponeurotomy is a less invasive surgical alternative to limited fasciectomy for Dupuytren's contracture, but appeared less efficacious in a previous randomized
clinical trial. This study compared the effectiveness of both techniques in contemporary clinical practice. The authors evaluated prospectively gathered data from all patients who were treated with percutaneous needle aponeurotomy or limited fasciectomy between 2011 and 2014 at six hand surgery practice sites in The Netherlands. The degree of total active extension deficit, Michigan Hand Outcomes Questionnaire subscores, and complications evaluated at 6 to 12 weeks after treatment were compared after propensity score-based inverse-probability weighting to account for the differences in baseline characteristics between the treatment groups. After inverse-probability weighting, 78 percutaneous needle aponeurotomy patients and 103 limited fasciectomy patients remained with similar characteristics (88 percent Tubiana grade I or II). The degree of total residual extension deficit at follow-up was similar between the weighted groups (percutaneous needle aponeurotomy, 21 degrees; limited fasciectomy, 18 degrees; p = 0.330). Furthermore, percutaneous needle aponeurotomy was associated with a lower mild complication rate (percutaneous needle aponeurotomy, 5.2 percent; limited fasciectomy, 24.3 percent; p < 0.001) and larger increases in the subdomain scores of satisfaction (p < 0.001), work performance (p < 0.001), activities of daily living (p = 0.009), and overall hand function (p = 0.001). This multicenter observational study found that, among patients with mildly to moderately affected digits, percutaneous needle aponeurotomy reduced contractures as effectively as limited fasciectomy does in clinical practice. Furthermore, percutaneous needle aponeurotomy provided a more rapid functional recovery and had a lower rate of mild complications. Therapeutic, III.

Flexor and Tendon Injuries

Predictors of outcome after primary flexor tendon repair in zone 1, 2 and 3.

Source: The Journal of hand surgery, European volume; Oct 2016; vol. 41 (no. 8); p. 793-801

Publication Date: Oct 2016

Publication Type(s): Journal Article

Author(s): Rigo, I Z; Røkkum, M

Abstract: We retrospectively reviewed the outcomes of flexor tendon repairs in zones 1, 2 and 3 in 356 fingers in 291 patients between 2005 and 2010. The mean (standard deviation) active ranges of motion of two interphalangeal joints of the fingers were 98° (40) and 114° (45) at 8 weeks postoperatively and at the last follow-up (mean 7 months, range 3-98), respectively. Using the Strickland criteria, 'excellent' or 'good' function was obtained in 95 (30%) out of 322 fingers at 8 weeks and 107 (48%) out of 225 fingers at the last follow-up. A total of 48 (13%) fingers required reoperation because of rupture, adhesion, contracture or other complications. The prevalence of rupture was 4%. We carried out multiple linear regression analysis to identify the predictors of the active digital motion. The following variables were found as negative predictors: age; smoking; injury localization between subzones 1C and 2C; injury to the little finger; the extent of soft tissue damage; concomitant skeletal injury; delay to surgery; use of a 2-strand Kessler repair technique; attempted suture or preservation of the tendon sheath-pulley system; and resecting or leaving the concomitant superficial flexor tendon cuts untreated. Analysing the 8 weeks results of tendon repairs in zones 1 and 2, early active mobilization was found to be superior to Kleinert’s regime. III. © The Author(s) 2016.
**Ulnar Nerve Injury after Flexor Tendon Grafting.**

**Source:** The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 425-427

**Publication Date:** Oct 2016

**Publication Type(s):** Journal Article

**Author(s):** McCleave, Michael John

**Abstract:** A 43-year-old female is presented who underwent a two-stage tendon reconstruction and developed a low ulnar nerve palsy postoperatively. Exploration found that the tendon graft was passing through Guyon's canal and that the ulnar nerve was divided. This is a previously unreported complication. The reconstruction is discussed, the literature reviewed and a guide is given on how to identify the correct tissue plane when passing a tendon rod.

**Hand trauma: A prospective observational study reporting diagnostic concordance in emergency hand trauma which supports centralised service improvements.**

**Source:** Journal of plastic, reconstructive & aesthetic surgery : JPRAS; Oct 2016; vol. 69 (no. 10); p. 1397-1402

**Publication Date:** Oct 2016

**Publication Type(s):** Journal Article

**Author(s):** Miranda, B H; Spilsbury, Z P; Rosala-Hallas, A; Cerovac, S

**Abstract:** Hand injuries are common, contributing up to 30% of accident and emergency (A&E) attendances. The aim of this study was to prospectively analyse the pathological demographics of hand injuries in a level 1 trauma centre with a Hand Trauma Unit and direct A&E links, and compare clinical and intra-operative findings. The null hypothesis was that there would be no differences between clinical and intra-operative findings (100% diagnostic concordance). Data were prospectively collected for referrals during 2012. Referral diagnosis, additional pathologies found on clinical assessment and intra-operative findings were documented on a live database accessible from both the Hand Unit and associated operating theatres. Odds ratios were calculated using SAS. Injuries (1526) were identified in 1308 patients included in the study.Diagnostic concordance between Hand Unit clinical examination and intra-operative findings was 92.5% ± 2.85% (mean ± SEM); this was lower for flexor tendon injuries (56.3%) because a greater number of additional pathologies were found intra-operatively (2.25 ± 0.10). This ‘trend’ was noted across multiple referral pathologies including phalangeal fractures (1.28 ± 0.02; 82.9%), lacerations (1.33 ± 0.04; 79.1%), extensor tendon injuries (1.30 ± 0.05; 87.8%) and dislocations (1.18 ± 0.05; 87.8%). Odds ratio analysis indicated a relationship between primary referral diagnoses that were more or less likely to be associated with additional injuries (p < 0.05); referral diagnoses of flexor tendon injuries and lacerations were most likely to be associated with additional injuries. As hand injuries are a common presentation to A&E departments, greater emphasis should be placed on training clinicians in the management of hand trauma. Our findings, coupled with the presented relevant literature reports, lead us to advocate that A&E departments should move towards a system wherein links to specialist hand trauma services are in place; we hereby present useful data for hospitals implementing such services. Crown Copyright © 2016. Published by Elsevier Ltd. All rights reserved.

**Freehand three-dimensional ultrasound to assess semitendinosus muscle morphology.**

**Source:** Journal of anatomy; Oct 2016; vol. 229 (no. 4); p. 591-599

**Publication Date:** Oct 2016
Publication Type(s): Journal Article

Author(s): Haberfehlner, Helga; Maas, Huub; Harlaar, Jaap; Becher, Jules G; Buizer, Annemieke I; Jaspers, Richard T

Abstract: In several neurological disorders and muscle injuries, morphological changes of the m. semitendinosus (ST) are presumed to contribute to movement limitations around the knee. Freehand three-dimensional (3D) ultrasound (US), using position tracking of two-dimensional US images to reconstruct a 3D voxel array, can be used to assess muscle morphology in vivo. The aims of this study were: (i) to introduce a newly developed 3D US protocol for ST; and (ii) provide a first comparison of morphological characteristics determined by 3D US with those measured on dissected cadaveric muscles. Morphological characteristics of ST (e.g. muscle belly length, tendon length, fascicle length and whole muscle volume, and volumes of both compartments) were assessed in six cadavers using a 3D US protocol. Subsequently, ST muscles were removed from the body to measure the same morphological characteristics. Mean differences between morphological characteristics measured by 3D US and after dissection were smaller than 10%. Intra-class correlation coefficients (ICCs) were higher than 0.75 for all variables except for the lengths of proximal fascicles (ICC = 0.58). Measurement of the volume of proximal compartment by 3D US was not feasible, due to low US image quality proximally. We conclude that the presented 3D US protocol allows for reasonably accurate measurements of key morphological characteristics of ST muscle. © 2016 The Authors. Journal of Anatomy published by John Wiley & Sons Ltd on behalf of Anatomical Society.

Treatment of Chronic Achilles Tendon Ruptures With Large Defects.

Source: Foot & ankle specialist; Oct 2016; vol. 9 (no. 5); p. 400-408

Publication Date: Oct 2016

Publication Type(s): Journal Article

Author(s): Ahmad, Jamal; Jones, Kennis; Raikin, Steven M

Abstract: Background When Achilles tendon ruptures become chronic, a defect often forms at the rupture site. There is scant literature regarding the treatment of chronic Achilles ruptures with defects of 6 cm or larger. We examined outcomes from combining a turndown of the proximal, central Achilles with a flexor hallucis longus (FHL) tendon transfer to treat this condition. Materials Between September 2002 and December 2013, 32 patients presented with a chronic Achilles rupture and a defect of 6 cm or more. Twenty patients were male and 12 were female. Patient age was between 20 and 74 years, with a mean of 53.3 years. Eighteen and 14 patients had their right and left Achilles tendon affected, respectively. The number of days between injury and surgery ranged from 30 to 315 days, with a mean of 102 days. Reconstruction of the Achilles involved a turndown of the proximal, central tendon and FHL augmentation. Final patient follow-up ranged from 18 to 150 months, with a mean of 62.3 months. At surgery, the gap between the ruptured ends of the Achilles ranged from 6 to 12 cm, with a mean gap of 7.5 cm. Full healing was achieved in all 32 patients (100%) by 5 months postoperatively. Mean Foot and Ankle Ability Measures scores increased from 36.3% to 90.2% between initial and latest follow-up (P < .05). Mean visual analogue scales of pain decreased from 6.6 to 1.8 of 10 between first and last encounter (P < .05). Postoperative complications occurred in 5 patients (15.6%), including 3 (9.4%) superficial wound problems, 1 (3.1%) deep wound infection, and 1 (3.1%) deep vein thrombosis. Discussion Outcomes from treating chronic Achilles ruptures with large defects are scant within the orthopaedic literature. Our method of Achilles reconstruction results in a high rate of improved function and pain relief. Therapeutic, Level IV: Case series. © 2016 The Author(s).
Therapeutic augmentation of the growth hormone axis to improve outcomes following peripheral nerve injury.

**Source:** Expert opinion on therapeutic targets; Oct 2016; vol. 20 (no. 10); p. 1259-1265

**Publication Date:** Oct 2016

**Publication Type(s):** Journal Article

**Author(s):** Tuffaha, Sami H; Singh, Prateush; Budihardjo, Joshua D; Means, Kenneth R; Higgins, James P; Shores, Jaimie T; Salvatori, Roberto; Höke, Ahmet; Lee, W P Andrew; Brandacher, Gerald

**Abstract:** Peripheral nerve injuries often result in debilitating motor and sensory deficits. There are currently no therapeutic agents that are clinically available to enhance the regenerative process. Following surgical repair, axons often must regenerate long distances to reach and reinnervate distal targets. Progressive atrophy of denervated muscle and Schwann cells (SCs) prior to reinnervation contributes to poor outcomes. Growth hormone (GH)-based therapies have the potential to accelerate axonal regeneration while at the same time limiting atrophy of muscle and the distal regenerative pathway prior to reinnervation. In this review, we discuss the potential mechanisms by which GH-based therapies act on the multiple tissue types involved in peripheral nerve regeneration to ultimately enhance outcomes, and review the pertinent mechanistic and translational studies that have been performed. We also address potential secondary benefits of GH-based therapies pertaining to improved bone, tendon and wound healing in the setting of peripheral nerve injury. GH-based therapies carry great promise for the treatment of peripheral nerve injuries, given the multi-modal mechanism of action not seen with other experimental therapies. A number of FDA-approved drugs that augment the GH axis are currently available, which may facilitate clinical translation.

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**Mallet Finger/Thumb Deformity**

**The challenge of the mallet orthosis: A simple solution.**

**Source:** Journal of hand therapy : official journal of the American Society of Hand Therapists; 2016; vol. 29 (no. 3); p. 348-351

**Publication Date:** 2016

**Publication Type(s):** Journal Article

**Author(s):** Harte, Daniel

Available in full text at Journal of Hand Therapy - from ProQuest

**Abstract:** This author provides instruction regarding an alternative, simple, and custom-made orthotic device to manage the mallet finger that may stay in place more securely while also allowing for proximal interphalangeal joint flexion during the healing of the terminal tendon.

- Kristin Valdes, OTD, OT, CHT, Practice Forum Editor, Journal of Hand Therapy. Copyright © 2016 Hanley & Belfus. Published by Elsevier Inc. All rights reserved.

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**Bony mallet finger injuries: assessment of stability with extension stress testing.**

**Source:** The Journal of hand surgery, European volume; Sep 2016; vol. 41 (no. 7); p. 696-700

**Publication Date:** Sep 2016

**Publication Type(s):** Journal Article

**Author(s):** Giddins, G E
**Abstract:** Bony mallet injuries with a large dorsal fracture fragment may sublux giving a poor outcome. The hypothesis that was tested was that subluxation could be predicted by extension stress lateral radiographs. It was anticipated that the main distal fracture fragment would glide and be stable or pivot and be unstable. There were 32 bony mallet injuries with dorsal fracture fragments of >1/3 in 31 patients. There were three patterns shown on lateral extension stress radiographs: gliding, pivoting, and tilting - a combination of the former two. Defining stability as congruence or subluxation $\leq 1$ mm at final radiographs and instability as subluxation $>1$ mm, there was a very strong association with pivoting and subluxation, and gliding and congruence ($p < 0.001$). Tilting gave mixed results. There was significant difference in the size of the fracture fragment in stable (mean 49%) and unstable injuries (54%) ($p = 0.044$). Extension stress testing has a sensitivity of 89% and a specificity of 100%. Extension stress testing highlights that instability is not just a function of fracture fragment size and is a more reliable method of predicting subluxation than any previously described. V. © The Author(s) 2016.

**The "Fish Hook" Technique for Bony Mallet Finger.**

**Source:** Orthopedics; Sep 2016; vol. 39 (no. 5); p. 295-298

**Publication Date:** Sep 2016

**Publication Type(s):** Journal Article

**Author(s):** Kim, Dong Hee; Kang, Hong Je; Choi, Ji Woong

Available in full text at Orthopedics - from ProQuest

**Abstract:** This study describes a new technique called the "fish hook" technique for the treatment of bony mallet finger. This technique catches the dorsal fragment with a bent K-wire shaped like a fish hook. Transarticular fixation is performed with another K-wire. This technique does not directly penetrate the bone fragment to prevent fragment comminution. This study included 26 patients with mallet finger fractures who underwent surgery using the fish hook technique between 2010 and 2014. The fractures were classified according to the method of Wehbe and Schneider. The fracture fragment was fixed with a fish hook technique in all patients. The K-wire was removed after 6 weeks, when bone union was achieved. Clinical parameters, including range of motion and extensor lag, were assessed at the distal interphalangeal joint according to Crawford's criteria. The mean follow-up period was 12.8 months. Mean extensor lag was 3°, and mean range of flexion of the distal interphalangeal joint was 76°. All patients achieved bone union after 6 weeks. According to Crawford's criteria, there were 20 excellent results, 5 good results, and 1 fair result. No complications, including skin necrosis, pin loosening, and nail deformity, occurred. The fish hook technique is an effective treatment option for bony mallet finger and provides good clinical and radiologic results. [Orthopedics.2016; 39(5):295-298.]. Copyright 2016, SLACK Incorporated.

**Oligodactyly with Thumb.**

**Source:** The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 283-291

**Publication Date:** Oct 2016

**Publication Type(s):** Journal Article

**Author(s):** Baek, Goo Hyun; Kim, Jihyeung

**Abstract:** Oligodactyly of the hand is one of the rarest congenital anomalies of upper extremities and defined as the presence of fewer than five fingers on a hand. Although it usually occurs in association with hypoplasia or absence of ulna, it can occur without abnormality of the forearm bones. The purpose of this study is to present clinical features and radiographic characteristics of hand oligodactyly with thumb. Five patients of oligodactyly with thumb who showed normal forearm
bones, were evaluated. Two patients had threefingered hand with thumb, and three had two-fingered hand with thumb. We analyzed associated abnormalities of carpal and metacarpal bones and measured the lengths of radius and ulna, and width of the wrist on the simple radiographs. We also devised new classification system of oligodactyly based on the thumb deformities and locations of missing digits. Syndactyly among fingers was associated in four patients, clinodactyly caused by delta bone in one, hypoplasia of the thumb in one, camptodactyly in one, symphalangism in one, and radial head dislocation in one. Considering the abnormalities of the carpal bones, the missing digits were presumed to be ulnar-sided digits in two patients, central digits in one patient and both ulnar-sided and central digits in two patients. In patients with missing of central digits, an adjacent metacarpal was hypertrophied. Although the ulnar variances were within normal range, the average lengths of radius and ulna were 6% and 5% shorter than those of contralateral normal side. The average width of the wrist was 9% narrower than that of contralateral normal side. Syndactyly and hypertrophied metacarpal were most commonly observed findings in the oligodactyly with thumb. Although oligodactyly with thumb may be a type of ulnar longitudinal deficiency, however, it can also be a type of central deficiency or combined type of ulnar longitudinal deficiency with central deficiency or radial longitudinal deficiency. We suggest a classification system of oligodactyly with thumb based on locations of missing digits and associated thumb deformities.

Combined two foot flaps with iliac bone graft for reconstruction of the thumb.

Source: The Journal of hand surgery, European volume; Sep 2016; vol. 41 (no. 7); p. 745-752
Publication Date: Sep 2016
Publication Type(s): Journal Article
Author(s): Zhang, G; Ju, J; Li, L; Jin, G; Li, X; Hou, R

Abstract: The purpose of this report was to retrospectively review the results of reconstruction of the thumb by use of combined two foot flaps with an iliac bone graft. From 2009 to 2014, nine patients with traumatic amputation of the thumb had their thumbs reconstructed. The two flaps were based on one pedicle. All flaps survived completely. Patients were followed for a mean of 15.6 months (range, 6-35 months). The appearance of the reconstructed thumb was comparable to a normal one, except for one thumb which required debulking. The appearance of the nail was satisfactory without deformity. The range of joint motion was satisfactory. The two point discrimination of the pulp ranged from 6 mm to >15 mm. The Michigan Hand Questionnaire outcome score was a mean of 76.2 ± 11.3 points and the Maryland foot rating score a mean of 94.8 ± 3.4 points. The combined two foot flaps with iliac bone graft might provide an option for the reconstruction of the thumb. III. © The Author(s) 2016.

Causes of secondary deformity after surgery to correct Wassel type IV-D thumb duplication.

Source: The Journal of hand surgery, European volume; Sep 2016; vol. 41 (no. 7); p. 739-744
Publication Date: Sep 2016
Publication Type(s): Journal Article
Author(s): He, B; Nan, G

Abstract: This study was undertaken to document the causes of secondary deformities after surgery for correction of Wassel type IV-D thumb duplication. We carefully dissected and observed the flexor pollicis longus, and bone and joint anatomy in eight patients with secondary deformities after surgical correction. We transferred the flexor pollicis longus and thenar muscle attachments, reconstructed the A2 pulley, released and tightened the joint capsule, and performed osteotomies to correct skeletal malalignment. Kirschner wire fixation was used for 4-5 weeks, followed by brace
fixation for 3 months. Patients were followed up for 13-34 months (mean 20 months). According to the Tada scores, the outcomes were good in six patients, and fair and poor in one patient each. The main causes of the secondary deformities were failure to reconstruct the A2 pulley, to transfer the flexor pollicis longus and thenar muscles, and incomplete resection of the radial metacarpal head. Brace fixation after Kirschner wire removal is crucial in preventing secondary deformities. IV. © The Author(s) 2016.

Nerve Injuries

Trapeziectomy (Osteoarthritis thumb)

Trapeziectomy or revision into a cemented polyethylene cup in failed trapeziometacarpal total joint arthroplasty.

**Source:** Journal of plastic surgery and hand surgery; Oct 2016; vol. 50 (no. 5); p. 286-290

**Publication Date:** Oct 2016

**Publication Type(s):** Journal Article

**Author(s):** Knak, Jens; Hansen, Torben B

**Abstract:** Total joint replacement as treatment of osteoarthritis of the trapeziometacarpal joint may lead to excellent short-term results, but also with a high risk of failure of the trapezium component. The aim of this study was to compare revision using trapeziectomy with a revision into a cemented trapezium cup. Thirty-four patients with a mean follow-up time of 47 months were included in a case control study with 17 hands revised with a cemented cup and 21 trapeziectomy. At follow-up, no significant difference was found in self-reported outcome, with pain at rest or activity and in grip strength comparing patients revised using trapeziectomy with patients revised with insertion of a new cup. There was, however, a high risk of re-revision in patients treated with insertion of a new cup and at the follow-up 4/17 cups had been re-revised and 5/17 cups had radiological signs of implant loosening. It was found that trapeziectomy should be the standard salvage procedure after a failed trapezium implant and revision of cup loosening with a cemented cup has an unacceptable failure rate.

Trapeziometacarpal Arthrodesis or Trapeziectomy with Ligament Reconstruction in Primary Trapeziometacarpal Osteoarthritis: A 5-Year Follow-Up.

**Source:** The Journal of hand surgery; Sep 2016; vol. 41 (no. 9); p. 910-916

**Publication Date:** Sep 2016

**Publication Type(s):** Journal Article

**Author(s):** Spekreijse, Kim R; Selles, Ruud W; Kedilloglu, Muhammed A; Slijper, Harm P; Feitz, Reinier; Hovius, Steven E; Vermeulen, Guus M

**Abstract:** To compare the long-term outcomes of trapeziectomy with ligament reconstruction and tendon interposition (LRTI) with trapeziometacarpal arthrodesis for osteoarthritis (OA) of the basal thumb joint. Patients were evaluated for pain, daily functioning, strength, and complications after a mean follow-up of 5.3 years. Generalized estimating equations statistics were used to compare
repeated measurements over time in both groups. After 5 years, patients who had trapeziectomy with LRTI had significantly better pain reduction and function than the arthrodesis group. Pain and function in the LRTI group continued to improve compared with the results 1 year after surgery, whereas the arthrodesis group did not change. Grip and pinch strength were higher than 1 year after surgery but were not different between groups. In the arthrodesis group, 1 patient was reoperated for nonunion between 1 year and a mean of 5 years after surgery, resulting in a total of 18% nonunion. Another patient underwent reoperation for hardware-related pain. One patient from each group required reoperation because of pain due to scaphotrapeziotrapezoid OA. Trapeziectomy with LRTI leads to better pain reduction and functional outcome after between 1 and 5 years compared with trapeziometacarpal arthrodesis in women over 40 years old with OA stages II to III. Therapeutic IV. Copyright © 2016 American Society for Surgery of the Hand. Published by Elsevier Inc. All rights reserved.

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**Trigger finger/thumb**

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**Ulnar Collateral ligament Sprain- Thumb**

**Overuse Injuries of the Pediatric and Adolescent Throwing Athlete.**

**Source:** Medicine and science in sports and exercise; Oct 2016; vol. 48 (no. 10); p. 1898-1905

**Publication Date:** Oct 2016

**Publication Type(s):** Journal Article

**Author(s):** Tisano, Breann K; Estes, A Reed

**Abstract:** In the hypercompetitive environment of year round youth baseball, arm pain is commonplace. Although much research has been done about injuries in the overhead throwing athlete, the emphasis has been on the more elite levels, where athletes have reached full development. The anatomy of the skeletally immature athlete, including open physeal plates and increased tissue laxity, raises unique issues in the presentation and treatment of repetitive throwing injuries of the elbow and shoulder. With a focus on "little leaguers," this discussion evaluates five of the most common elbow and shoulder injuries-Little Leaguer's elbow, ulnar collateral ligament sprain or tear, osteochondritis dissecans/Panner's disease, Little Leaguer's shoulder, and multidirectional instability. In the developmentally distinct pediatric athlete, pathogenesis, diagnosis, and treatment may differ from that established for adults. Offering early diagnosis and treatment appropriate to a child's level of development will enable youth to not only continue to play sports but to also maintain full functionality as active adults.

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**CHRONIC UCL INJURY: A MULTIMODAL APPROACH TO CORRECTING ALTERED MECHANICS AND IMPROVING HEALING IN A COLLEGE ATHLETE- A CASE REPORT.**

**Source:** International journal of sports physical therapy; Aug 2016; vol. 11 (no. 4); p. 614-626

**Publication Date:** Aug 2016

**Publication Type(s):** Journal Article

**Author(s):** Patrick, Rachel; McGinty, Josh; Lucado, Ann; Collier, Beth
**Abstract:** Ulnar collateral ligament (UCL) tears and associated Tommy Johns surgical intervention from excessive and poor quality pitching has increased immensely with more college and professional pitchers undergoing the surgery in 2014 alone than in the 1990s as a whole. Faulty mechanics developed at young ages are often well-engrained by the late adolescent years and the minimal healing ability of the largely avascular UCL often leads to delayed safe return to sport. The purpose of this case study was to describe an innovative, multimodal approach to conservative management of a chronic UCL injury in a college-aged baseball pitcher. This innovative approach utilizes both contractile and non-contractile dry needling to enhance soft tissue healing combined with standard conservative treatment to decrease pain and improve sport performance as measured by the Disabilities of Arm, Shoulder and Hand (DASH), Numeric Pain Report Scale (NPRS), and return to sport. Retrospective Case Report. A collegiate athlete presented to an outpatient orthopedic physical therapy clinic for treatment of UCL sprain approximately six weeks post-injury and platelet-rich plasma injection. Diagnostic testing revealed chronic ligamentous microtrauma. Impairments at evaluation included proximal stabilizing strength deficits, myofascial trigger points throughout the dominant upper extremity, improper pitching form, and inability to pitch in game conditions due to severe pain. Interventions included addressing strength deficits throughout the body, dry needling, and sport-specific biomechanical training with pitching form analysis and correction. Conventional DASH and Sport-Specific scale on the DASH and the numeric pain rating scale improved beyond both the minimally clinically important difference and minimal detectable change over the 12 week treatment. At 24-week follow up, conventional DASH scores decreased from 34.20% disability to 3.33% disability while sport-specific DASH scores decreased from 100% disability to 31.25% disability. Although initially unable to compete due to high pain levels, the subject is currently completing his pitching role full-time with 1/10 max pain. The approach used in this case study provides an innovative approach to conservative UCL partial tear treatment. Dry needling of both contractile and non-contractile tissue in combination with retraining of faulty mechanics may encourage chronically injured ligamentous tissue healing and encourage safe return to sport. Level 4.

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**Wrist and Finger fractures (distal radius/scaphoid)**

**Radiographic and functional evaluation of low profile dorsal versus volar plating for distal radius fractures.**

**Source:** Journal of orthopaedics; Dec 2016; vol. 13 (no. 4); p. 376-382

**Publication Date:** Dec 2016

**Publication Type(s):** Journal Article

**Author(s):** Kumar, Sanjay; Khan, A N; Sonanis, S V

**Abstract:** Fracture of the distal radius is a common clinical problem. Complex fracture requires open reduction and stabilization with plating to restore anatomy. Dorsal plating has advantages of buttressing the fracture better but often complicated with tendon problems as per literature. The rate of complications however, was not compared between the low-profile dorsal and the volar plates. This was a retrospective study on seventy one patients with dorsally angulated or displaced distal radius fractures, who underwent fixation of fractures with either dorsal or volar locking plate from Jan - Nov 2012. Preoperative radiographs were classified based on Universal and Fernandez classification. Postoperative radiographs were assessed for anatomical restoration of Radial length, radial inclination and volar tilt. Tendon and nerve related complications were assessed and functional evaluation was performed on the basis of PRWE (Patient related wrist evaluation) score. Both groups were matched for their demographic profile and fracture types (p 0.033). Dorsal plating group had 89% excellent/good restoration and fair in 11%. Volar group had 96% excellent/good
restoration and fair in 4%. Statistical analysis was performed with unpaired t test for radiographic parameters. Three patients had tendon related complications in dorsal plating group; two patients in volar group had nerve related complications. Functional outcome with PRWE was comparable between two groups. Results with low profile dorsal plating were comparable to volar plating. Therefore dorsal plating can be used as an alternative method when dorsal buttressing of comminuted fracture is required, especially with concomitant osteoporosis.

Database: Medline

Variability in orthopedic surgeon treatment preferences for nondisplaced scaphoid fractures: A cross-sectional survey.

Source: Journal of orthopaedics; Dec 2016; vol. 13 (no. 4); p. 337-342

Publication Date: Dec 2016

Publication Type(s): Journal Article

Author(s): Paulus, Megan Carroll; Braunstein, Jake; Merenstein, Daniel; Neufeld, Steven; Narvaez, Michael; Friedland, Robert; Bruce, Katherine; Pfaff, Ashley

Abstract: The absence of a best practice treatment standard contributes to clinical variation in medicine. Often in the absence of evidence, a standard of care is developed and treatment protocols are implemented. The purpose of this study was to examine whether the standard of care for the treatment of nondisplaced scaphoid fractures is uniform among orthopedic surgeons. A survey of orthopedic surgeons actively practicing in the US or abroad was conducted to elicit preferred treatment strategies for nondisplaced scaphoid fractures. The surgeons were recruited at orthopedic conferences, clinical visits, and via email. The survey included demographic questions along with a short clinical vignette. The option for fracture management included surgical versus nonsurgical treatment. For those who chose nonsurgical treatment, type/duration of immobilization was recorded. Cost analysis was performed to estimate direct and indirect costs of various treatment options. A total of 494 orthopedic surgeons completed the survey. The preference for surgical treatment was preferred in 13% of respondents. Hand/upper extremity specialists were significantly more likely to operate compared with generalists (p = 0.0002). Surgeons younger than forty-five were nearly twice as likely to choose surgery (p = 0.01). There was no clear consensus on duration of immobilization as 30% of surgeons chose 6 weeks, 33% selected 8 weeks, and 27% opted for 12 weeks. Total cost of surgery was 49% greater than that of nonoperative treatment. With each additional week of immobilization for nonoperative treatment, the total costs of surgical treatment near that of nonoperative treatment. There exist clear trends in how specific demographic groups choose to treat the nondisplaced scaphoid fracture. Whether these trends are the result of generational gaps or additional subspecialty training remains difficult to determine, but there is need to pursue a more consistent approach that benefits the patients and the health care system as a whole.

Computed tomography for the detection of distal radioulnar joint instability: normal variation and reliability of four CT scoring systems in 46 patients.

Source: Skeletal radiology; Nov 2016; vol. 45 (no. 11); p. 1487-1493

Publication Date: Nov 2016

Publication Type(s): Journal Article

Author(s): Wijffels, Mathieu; Stomp, Wouter; Krijnen, Pieta; Reijnierse, Monique; Schipper, Inger

Abstract: The diagnosis of distal radioulnar joint (DRUJ) instability is clinically challenging. Computed tomography (CT) may aid in the diagnosis, but the reliability and normal variation for DRUJ
translation on CT have not been established in detail. The aim of this study was to evaluate inter- and intraobserver agreement and normal ranges of CT scoring methods for determination of DRUJ translation in both posttraumatic and uninjured wrists. Patients with a conservatively treated, unilateral distal radius fracture were included. CT scans of both wrists were evaluated independently, by two readers using the radioulnar line method, subluxation ratio method, epicenter method and radioulnar ratio method. The inter- and intraobserver agreement was assessed and normal values were determined based on the uninjured wrists. Ninety-two wrist CTs (mean age: 56.5 years, SD: 17.0, mean follow-up 4.2 years, SD: 0.5) were evaluated. Interobserver agreement was best for the epicenter method [ICC = 0.73, 95% confidence interval (CI) 0.65-0.79]. Intraobserver agreement was almost perfect for the radioulnar line method (ICC = 0.82, 95% CI 0.77-0.87). Each method showed a wide normal range for normal DRUJ translation. Normal range for the epicenter method is -0.35 to -0.06 in pronation and -0.11 to 0.19 in supination. DRUJ translation on CT in pro- and supination can be reliably evaluated in both normal and posttraumatic wrists, however with large normal variation. The epicenter method seems the most reliable. Scanning of both wrists might be helpful to prevent the radiological overdiagnosis of instability.

Differing trends in fall-related fracture and non-fracture injuries in older people with and without dementia.

Source: Archives of gerontology and geriatrics; 2016; vol. 67 ; p. 61-67
Publication Date: 2016
Publication Type(s): Journal Article
Author(s): Harvey, Lara; Mitchell, Rebecca; Brodaty, Henry; Draper, Brian; Close, Jacqueline

Abstract: To explore the impact of dementia on the trends in fall-related fracture and non-fracture injuries for older people. Individuals aged ≥65 years who were admitted to a NSW hospital for at least an over-night stay for a fall-related injury from 2003 to 2012 were identified. Age-standardised hospitalisation rates, length of stay, access to in-hospital rehabilitation, 30-day and 1-year mortality were examined. Annual percentage change (PAC) over time was calculated using negative binomial regression. Of the 228,628 fall-related injury hospitalisations, 20.6% were for people with dementia. People with dementia were more likely to be admitted with a hip fracture, and less likely to be admitted with a fracture of the forearm/wrist, and received less in-hospital rehabilitation than people without dementia. Fall-related hip-fracture rates for people with dementia decreased by 4.2% (95%CI -5.6 to -2.7, p<0.001) per annum; there was no change over time for people without dementia (PAC-0.2%; 95%CI -0.8 to 0.5, p=0.643). Rates for other fractures decreased by 1.2% (95%CI -1.9 to -0.5, p<0.001) per annum in people with dementia, while rates increased by 2.2% (95%CI 1.9-2.5, p<0.001) for people without dementia. By contrast, non-fracture injuries including traumatic brain injury increased significantly for both people with and without dementia. Rates of fall-related fracture and non-fracture hospitalisations for people with dementia remain higher than for those without dementia. However, fall-related fracture hospitalisation rates have decreased for people with dementia, while there has not been a corresponding decrease in people without dementia. Copyright © 2016 Elsevier Ireland Ltd. All rights reserved.

The Imperative Nature of Physical Exam in Identifying Pediatric Scaphoid Fractures.

Source: The Journal of pediatrics; Oct 2016; vol. 177 ; p. 323
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Sobel, Andrew D; Shah, Kalpit N; Katarincic, Julia A

Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 422-424
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Mozaffarian, Kamran; Bayatpour, Abdollah; Vosoughi, Amir Reza
Abstract: Simultaneous volar dislocation of distal interphalangeal (DIP) joint and volar fracture-subluxation of proximal interphalangeal (PIP) joint of the same finger has not been reported yet. A 19-year-old man was referred due to pain on the deformed left little finger after a ball injury. Radiographs showed volar dislocation of the DIP joint and dorsal lip fracture of the middle phalanx with volar subluxation of PIP joint of the little finger. This case was unique in terms of the mechanism of injury which was hyperflexion type in two adjacent joints of the same finger. The patient was treated by closed reduction of DIP joint dislocation and open reduction and internal fixation of the PIP joint fracture-subluxation and application of dorsal external fixator due to instability. Finally, full flexion of the PIP joint and full extension of the DIP joint were obtained but with 10 degree extension lag at the PIP joint and DIP joint flexion ranging from 0 degree to 30 degrees. Some loss of motion in small joints of the fingers after hyperflexion injuries should be expected.

Reconstruction of Attritional Rupture of Flexor Tendons with Fascia Lata Graft Following Distal Radius Fracture Malunion.

Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 410-413
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Bhat, A K; Acharya, A M; Soni, N
Abstract: Incidence of multiple flexor tendon rupture following distal radius fractures is rare with very few cases being reported in literature. We present an unusual case of a patient who had come to us with complaints of weakness and paresthesia of the right hand of one month prior and with a past history of dorsal plating for distal radius fracture nine years ago. Radiographs showed a distal radius fracture malunion with intact dorsal plate and protrusion of screws through the volar cortex. On exploration, attritional ruptures of all digital flexors were found with sparing of the Flexor Pollicis Longus tendon. The fibrous mass was excised and flexors reconstructed with a fascia lata graft. Attempt was made to correct the malunion with radial and ulnar osteotomies. At one year the patient had excellent restoration of digital flexion.


Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 405-409
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Yamazaki, Hiroshi; Uchiyama, Shigeharu; Hosaka, Masato; Kato, Hiroyuki
Abstract: Closed flexor tendon ruptures in the little finger can be caused by fracture or nonunion of the hook of the hamate, but no case of the disorder secondary to the sclerosis and thinning of the
hamate hook has been reported. We report two rare cases with this complication due to rough surface of the hamate hook. Carpal tunnel view radiographs and computed tomography showed the sclerosis and thinning of the hook.

**Surfing Behind a Boat: Quality and Reliability of Online Resources on Scaphoid Fractures.**  
**Source:** The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 374-381  
**Publication Date:** Oct 2016  
**Publication Type(s):** Journal Article  
**Author(s):** Nassiri, Mujtaba; Mohamed, Osama; Berzins, Arvids; Aljabi, Yasser; Mahmood, Talat; Chenouri, Shojaeddin; O'Grady, Paul  
**Abstract:** Patients seeking information and advice on treatment of scaphoid fractures unknowingly confront longstanding medical controversies surrounding the management of this condition. However, there are no studies specifically looking into the quality and reliability of online information on scaphoid fractures. We identified 44 unique websites for evaluation using the term "scaphoid fractures". The websites were categorized by type and assessed using the DISCERN score, the Journal of the American Medical Association (JAMA) benchmark criteria and the Health on the net (HON) code. The majority of websites were commercial (n = 13) followed by academic (n = 12). Only seven of the websites were HON certified. The mean DISCERN score was 43.8. Only 4 websites scored 63 or above representing excellent quality with minimal shortcomings but 13 websites scored 38 or below representing poor or very poor quality. The mean JAMA benchmark criteria score was 2.2. The Governmental and Non-Profit Organizations category websites had the highest mean JAMA benchmark score. The websites that displayed the HON-code seal had higher mean DISCERN scores and higher mean JAMA benchmark scores compared to websites that did not display the seal. Good quality health information is certainly available on the Internet. However, it is not possible to predict with certainty which sites are of higher quality. We suggest clinicians should have a responsibility to educate their patients regarding the unregulated nature of medical information on the internet and proactively provide patients with educational resources and thus help them make smart and informed decisions.

**Percutaneous Fixation for Scaphoid Nonunion with Bone Grafting Through the Distal Insertion Hole of a Fully Threaded Headless Screw.**  
**Source:** The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 357-363  
**Publication Date:** Oct 2016  
**Publication Type(s):** Journal Article  
**Author(s):** Ohta, Souichi; Ikeguchi, Ryosuke; Noguchi, Takashi; Kaizawa, Yukitoshi; Oda, Hiroki; Yurie, Hirofumi; Matsuda, Shuichi  
**Abstract:** Percutaneous scaphoid screw fixation is a popular treatment for acute scaphoid fractures with no or minimal displacement. For treating scaphoid nonunions, however, open reduction and internal fixation with bone grafting is still the most popular treatment. Percutaneous fixation with bone grafting through the screw insertion hole has received little attention, although it minimizes damage to the surrounding tissues. We report excellent results of six scaphoid nonunions treated by retrograde percutaneous fixation with curettage and bone grafting through the distal insertion hole of a fully threaded headless screw. Six scaphoid nonunions with substantial bone loss were treated, including one revision case. All nonunions were located at the middle third of the scaphoid. The mean patient age at operation was 26 years, and the mean interval between fracture and surgery was 7 months. In the revision case, the interval between the primary and revision surgery was 6
In one case, curettage alone was performed before retrograde insertion of the headless screw. In the other cases including the revision, curettage and bone grafting with a bone biopsy needle was required through a distal insertion hole. The mean follow-up was 11.3 months. Radiologically, union was achieved at averaged 12 weeks postoperatively. At the final follow-up, there was significant improvement in the wrist extension range of movement (from 65.8° to 80.8°) and grip strength (from 69.5% to 93.0% of the unaffected side). Five patients were free of pain, and one experienced mild pain only during heavy manual labor. The mean VAS, DASH, and Cooney wrist scores were 0.3, 1 and 99, respectively. All patients returned to their work or athletic activities. Retrograde percutaneous fixation with bone grafting through the distal insertion hole of a fully threaded headless screw is a promising option for surgical treatment of scaphoid nonunions.

Open Finger Fractures: Incidence, Patterns of Injury and the Influence of Social Deprivation.
Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 352-356
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Anakwe, Raymond E; Middleton, Scott D; Bugler, Kate E; Duckworth, Andrew D; McQueen, Margaret M; Brown, Charles M Court
Abstract: This study investigates the patterns and epidemiology of open finger fractures. There is little good data about these injuries. Data were collected prospectively in a single trauma unit serving a well-defined population. Over a 15 year period 1090 open finger fractures were treated in 1014 patients. These made up the vast majority of open fractures treated in the trauma unit during this period. The incidence of open finger fractures was 14.0 per 100,000 patients per year. Deprivation did not influence the incidence of open finger fractures but did affect treatment choices for women. Most open finger fractures resulted from crush injuries or falls and required only simple operative treatments: debridement, lavage and early mobilization. Open finger fractures formed the majority of the workload of open fractures at our trauma centre but usually required simple treatments only. Social deprivation was not shown to influence the patterns or epidemiology of these injuries but did affect treatment choices for women.

Post-Operative Contracture of the Proximal Interphalangeal Joint after Surface Replacement Arthroplasty Using a Volar Approach.
Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 345-351
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Shirakawa, Ken; Shirota, Masahiko
Abstract: Postoperative contracture as a major complication of surface replacement arthroplasty (SRA) remains an unresolved problem. Contracture after SRA can occur early in the postoperative period due to mechanical dysfunction, and tardy contracture where ROM declines with time postoperatively is also reported. 13 fingers with degenerative osteoarthritis and two fingers with post-traumatic arthritis where SRA was performed using volar approach were involved. Contracture was defined as limited ROM of less than 35 degrees. Cases were then categorized into two groups according to time of onset of contracture; early contracture and tardy contracture. Characteristic findings of postoperative X-rays in each contracture group were examined. Required procedures and efficacy of any further surgery was also reviewed. Early contracture was observed in three cases, all of which suffered intra-operative fracture or fragility of the central slip insertion on the dorsal rim of the middle phalanx. This was observed in a further two cases, both of which deteriorated to tardy
contracture. Tardy contracture was observed in five cases, and the average ROM was 63 degrees preoperatively, 48 degrees one year postoperatively and 21 degrees at the most recent follow-up, or at the time of the second surgery. In the three cases, development of osteophyte formation on the volar aspect of the proximal head component was observed on the follow-up X-rays. Required further surgeries were resection of the volar plate in two cases, resection of ossification in one and resection of the osteophyte in two. The results of further surgeries were mediocre in all but one case. This study showed that intra-operative fracture or fragility of the central slip insertion was a risk factor for postoperative contracture after SRA, and that development of osteophyte formation can be a cause of deterioration in ROM of the PIP joint.

Reasons for Implant Removal after Distal Radius Fractures.

Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 321-325
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Tan, Audrey; Chong, Alphonsus
Abstract: With new low profile locked volar plate designs for distal radius fractures, soft tissue complications are uncommon. However, there are still patients who request to have their implants removed. In this study, we retrospectively reviewed the reasons for this. We reviewed the hospital operative records of patients who had operative fixation of wrist fractures between November 2008 and May 2009. We examined the clinical records of these patients in order to ascertain if there was a difference in patient demographics between those who eventually had their implants removed and those who had their implants retained. We also noted down the reasons for removal of implants. In the period of study, 165 patients had operative fixation of their distal radius fractures, of which 44 (26.7%) had had their implants eventually removed. These patients tended to be younger (mean age of 37.1 years compared to 45.5 years in those who retained their implants). We also found a correlation between removal of implants and the presence of ulnar implants, as well as hand dominance. Reasons for implant removal were symptomatic irritation/implant prominence (15), joint stiffness requiring arthrolysis (6), infection (2), malunion (2), and patients who did not have a clinical reason (19). Our results suggest the involvement of other psychosocial factors, such as cultural attitudes towards the presence of implants within the body. In light of our results, we also suggest that ulnar styloid fractures be treated non-operatively.

Recent Update in the Diagnosis and Treatment of Bone Frailty in Patients with a Distal Radius Fracture.

Source: The journal of hand surgery Asian-Pacific volume; Oct 2016; vol. 21 (no. 3); p. 307-312
Publication Date: Oct 2016
Publication Type(s): Journal Article
Author(s): Shin, Young Ho; Gong, Hyun Sik
Abstract: Distal radius fracture (DRF) is the most common upper extremity fracture in the elderly. Patients with a DRF have a two to fourfold higher risk of a subsequent fracture than those with no history of fractures, and DRFs occur on average 15 years earlier than hip fractures. Therefore, patients with a DRF offer physicians an important opportunity to diagnose and treat osteoporosis to prevent a secondary fracture. In this review, we provide recent update in the diagnosis and treatment of bone frailty in patients with a DRF.
Men’s health-seeking behaviours regarding bone health after a fragility fracture: a secondary analysis of qualitative data.

Source: Osteoporosis international : a journal established as result of cooperation between the European Foundation for Osteoporosis and the National Osteoporosis Foundation of the USA; Oct 2016; vol. 27 (no. 10); p. 3113-3119

Publication Date: Oct 2016

Publication Type(s): Journal Article

Author(s): Sale, J E M; Ashe, M C; Beaton, D; Bogoch, E; Frankel, L

Abstract: In our qualitative study, men with fragility fractures described their spouses as playing an integral role in their health behaviours. Men also described taking risks, preferring not to dwell on the meaning of the fracture and/or their bone health. Communication strategies specific to men about bone health should be developed. We examined men's experiences and behaviours regarding bone health after a fragility fracture. We conducted a secondary analysis of five qualitative studies. In each primary study, male and female participants were interviewed for 1-2 h and asked to describe recommendations they had received for bone health and what they were doing about those recommendations. Maintaining the phenomenological approach of the primary studies, the transcripts of all male participants were re-analyzed to highlight experiences and behaviours particular to men. Twenty-two men (50-88 years old) were identified. Sixteen lived with a wife, male partner, or family member and the remaining participants lived alone. Participants had sustained hip fractures (n = 7), wrist fractures (n = 5), vertebral fractures (n = 2) and fractures at other locations (n = 8). Fourteen were taking antiresorptive medication at the time of the interview. In general, men with a wife/female partner described these women as playing an integral role in their health behaviours, such as removing tripping hazards and organizing their medication regimen. While participants described giving up activities due to their bone health, they also described taking risks such as drinking too much alcohol and climbing ladders or deliberately refusing to adhere to bone health recommendations. Finally, men did not dwell on the meaning of the fracture and/or their bone health. Behaviours consistent with those shown in other studies on men were described by our sample. We recommend that future research address these findings in more detail so that communication strategies specific to men about bone health be developed.

Fixation strength of four headless compression screws.

Source: Medical engineering & physics; Oct 2016; vol. 38 (no. 10); p. 1037-1043

Publication Date: Oct 2016

Publication Type(s): Journal Article

Author(s): Hart, Adam; Harvey, Edward J; Rabiei, Reza; Barthelat, Francois; Martineau, Paul A

Available in full text at Polish Journal of Medical Physics and Engineering - from ProQuest

Abstract: To promote a quicker return to function, an increasing number of patients are treated with headless screws for acute displaced and even non-displaced scaphoid fractures. Therefore, it is imperative to understand and optimize the biomechanical characteristics of different implants to support the demands of early mobilization. The objective of this study was to evaluate the biomechanical fixation strength of 4 headless compression screws under distracting and bending forces. The Acutrak Standard, Acutrak Mini, Synthes 3.0, and Herbert-Whipple screws were tested using a polyurethane foam scaphoid fracture model. Implants were inserted into the foam blocks across a linear osteotomy. Custom fixtures applied pull-apart and four-point bending forces until implant failure. Pull-apart testing was performed in three different foam densities in order to simulate osteoporotic, osteopenic, and normal bone. The peak pull-apart forces varied significantly between implants and were achieved by (from greatest to least): the Acutrak Standard, Synthes 3.0,
Acutrak Mini, and Herbert-Whipple screws. The fully threaded screws (Acutrak) failed at their proximal threads while the shanked screw (Synthes and Herbert Whipple) failed at their distal threads. Similarly, the screws most resistant to bending were (from greatest to least): the Acutrak Standard, Acutrak Mini, Herbert-Whipple, and Synthes. Although the amount of force required for pull-apart failure increased with each increasing simulated bone density (a doubling in density required triple the amount of pull apart force), the mode and sequence of failure was the same. Overall, the fully threaded, conical design of the Acutrak screws demonstrated superior fixation against pull-apart and bending forces than the shanked designs of the Synthes and Herbert-Whipple. We also found a strong relationship between simulated bone density and pull-apart force. Copyright © 2016 IPEM. Published by Elsevier Ltd. All rights reserved.

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17. Return to Play After Hand and Wrist Fractures.
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Abstract: Wrist and hand injuries are common among athletes, and can lead to considerable disability. Dislocations and soft tissue injuries are common and require prompt recognition and treatment. Accurate diagnosis and early immobilization are often key to getting players back to their sport early. Some injuries require surgery; operative intervention allows the player to return to their sport more quickly or with less long-term disability. This article discusses the spectrum of injury from distal radius fractures to mallet fingers, and offers some general guidelines for the surgeon in how to counsel and treat athletes with these problems. Copyright © 2016 Elsevier Inc. All rights reserved.
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