

Hand Rehabilitation

Current Awareness Newsletter



April/May 2016

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Contents

Contents.....	2
New Activity in UptoDate	3
New from Nice	4
Current Awareness Database Articles	4
Altered Neurodynamics upper limb.....	4
Complex Regional Pain Syndrome (CRPS).....	5
De-Quervain's tenosynovitis	6
Dislocations, Fingers	7
Dupuytren's.....	8
Flexor and Tendon Injuries	9
Mallet Finger/Thumb Deformity.....	13
Nerve Injuries.....	14
Trapeziectomy.....	18
Trigger finger/thumb	20
Ulnar Collateral ligament Sprain	21
Wrist and Finger fractures	21
Journal Tables of Contents.....	31
Journal of Hand Surgery (British and European).....	31
Journal of Hand Surgery (America)	31
Journal of Hand Therapy.....	31

New Activity in UpToDate

New updates in point-of-care evidence summarising tools UpToDate

[Distal radius fractures in adults](#)

Author: David J Petron, MD

Literature review current through: Apr 2016. | **This topic last updated:** Mar 07, 2016.

INTRODUCTION — The distal radius is the most common fracture site in the upper extremity. Such injuries account for approximately one-sixth of fractures treated in United States emergency departments (EDs) [1]. Familiarity with wrist anatomy and the natural history of major fracture types is essential for appropriate management of distal radius fractures [2]. This topic review will discuss the evaluation and management of distal radius fractures in adults. Other wrist injuries are discussed elsewhere. (See "[Evaluation of the adult with acute wrist pain](#)" and "[Overview of carpal fractures](#)".)

[https://www.uptodate.com/contents/distal-radius-fractures-in-adults?source=see link](https://www.uptodate.com/contents/distal-radius-fractures-in-adults?source=see_link)

[History and examination of the adult with hand pain](#)

Author: Philip E Blazar, MD

Literature review current through: Apr 2016. | **This topic last updated:** Feb 26, 2016.

INTRODUCTION — The multiple functions of the hand are extremely important for daily life, and any deviation from normal function can lead to disability. It is important for the clinician to recognize the various traumatic and nontraumatic disorders that can lead to hand pain and dysfunction.

The history and evaluation of the adult with hand pain will be reviewed here. The differential diagnosis is lengthy, and this review will focus on some of the more common diagnoses. Thumb and wrist pain, as well as fractures and infections of the hand, are discussed in detail separately. (See "[Evaluation of the patient with thumb pain](#)" and "[Evaluation of the adult with acute wrist pain](#)" and "[Overview of finger, hand, and wrist fractures](#)" and "[Overview of hand infections](#)".)

New from Nice

[An unusual finger injury – Case Review](#)

25 May 2016 - Publisher: British Medical Journal

...haemodynamically stable. Her right index finger exhibited a full range of movement...was neurovascularly intact. The finger was not tender on direct palpation...the same temperature as her other fingers. The finger had a laceration on the radial aspect...

Read Summary: <http://www.bmj.com/content/353/bmj.i2680>

[Collagenase clostridium histolyticum in Dupuytren's contracture: a systematic review](#)

Source: [PubMed](#) - 05 May 2016

...collagenase clostridium histolyticum for management of Dupuytren's contracture has increased. The procedure...Scopus databases using the combined keywords 'Dupuytren collagenase' and 'Dupuy

Read Summary: <http://www.ncbi.nlm.nih.gov/pubmed/27151958>

Current Awareness Database Articles

Below is a selection of articles related to Hand Therapy recently added to the healthcare databases

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

Title: Validity of the Upper Limb Neurodynamic Test 1 for the diagnosis of Carpal Tunnel Syndrome. The role of structural differentiation.

Citation: Manual therapy, Apr 2016, vol. 22, p. 190-195

Author(s): Bueno-Gracia, Elena, Tricás-Moreno, José Miguel, Fanlo-Mazas, Pablo,

Abstract: Several studies have analysed the use of the Upper Limb Neurodynamic Test 1 (ULNT1) for diagnosing Carpal Tunnel Syndrome (CTS) obtaining weak diagnostic accuracy, which could be related to the lack of consensus in the selected diagnostic criteria of ULNT1. To determine the concurrent validity of ULNT1 in comparison to Nerve Conduction Studies (NCS) for the diagnosis of CTS, considering the structural differentiation (SD) as an essential part of the diagnosis. Prospective diagnostic test study. Individuals with suspected CTS referred for NCS were invited to voluntarily participate in the study. . (Abstract Edited)

Title: Reflections on the diagnostic accuracy of the Upper Limb Neurodynamic Test 1.

Citation: Manual Therapy, 2016, vol./is. 23/(0-0)

Author(s): Vanti, Carla, Bonfiglioli, Roberta, Ruggeri, Martina, Pillastrini, Paolo

Complex Regional Pain Syndrome (CRPS)

Title: Persistent pain is common 1 year after ankle and wrist fracture surgery: a register-based questionnaire study.

Citation: British journal of anaesthesia, May 2016, vol. 116, no. 5, p. 655-661

Author(s): Friesgaard, K D, Gromov, K, Knudsen, L F, Brix, M, Troelsen, A, Nikolajsen, L

Abstract: Substantial literature documents that persistent postsurgical pain is a possible outcome of many common surgical procedures. As fracture-related surgery implies a risk of developing neuropathic pain and complex regional pain syndrome (CRPS), further studies investigating the prevalence and pain characteristics are required. All patients undergoing primary surgery because of ankle or wrist fracture at Hvidovre and Odense University Hospitals, Denmark, between April 15, 2013 and April 15, 2014, were identified from the Danish Fracture Database. A questionnaire regarding pain characteristics was sent to patients 1 yr after primary surgery. Replies were received from 328 patients, of whom 18.9% experienced persistent postsurgical pain defined as pain daily or constantly at a level that interfered much or very much with daily activities, 42.8% reported symptoms suggestive of neuropathic pain, and 4.0% fulfilled the diagnostic patient-reported research criteria for CRPS. Persistent postsurgical pain 1 yr after wrist and ankle fracture surgery is frequent, and a large proportion of patients experience symptoms suggestive of neuropathic pain and CRPS. Patients should be informed about the substantial risk of developing persistent postsurgical pain. Future studies investigating risk factors for persistent postsurgical pain that include both surgically and conservatively treated fractures are required.

Title: Effects of Mirror Therapy in Stroke Patients With Complex Regional Pain Syndrome Type 1: A Randomized Controlled Study.

Citation: Archives of physical medicine and rehabilitation, Apr 2016, vol. 97, no. 4, p. 575-581,

Author(s): Pervane Vural, Secil, Nakipoglu Yuzer, Guldal Funda, Sezgin Ozcan, Didem, Demir Ozbudak, Sibel, Ozgirgin, Nese

Abstract: To investigate the effects of mirror therapy on upper limb motor functions, spasticity, and pain intensity in patients with hemiplegia accompanied by complex regional pain syndrome type 1. Randomized controlled trial. Training and research hospital. Adult patients with first-time stroke and simultaneous complex regional pain syndrome type 1 of the upper extremity at the dystrophic stage (N=30). Both groups received a patient-specific conventional stroke rehabilitation program for 4 weeks, 5d/wk, for 2 to 4h/d. The mirror therapy group received an additional mirror therapy program for 30min/d. We evaluated the scores of the Brunnstrom recovery stages of the arm and hand for motor recovery, wrist and hand subsections of the Fugl-Meyer Assessment (FMA) and motor items of the FIM-motor for functional status, Modified Ashworth Scale (MAS) for spasticity, and visual analog scale (VAS) for pain severity. After 4 weeks of rehabilitation, both groups had significant improvements in the FIM-motor and VAS scores compared with baseline scores. However, the scores improved more in the mirror therapy group than the control group ($P<.001$ and $P=.03$, respectively). Besides, the patients in the mirror therapy arm showed significant improvement in the Brunnstrom recovery stages and FMA scores ($P<.05$). No significant difference was found for MAS scores. In patients with stroke and simultaneous complex regional pain syndrome type 1, addition of mirror therapy to a conventional stroke rehabilitation program provides more improvement in motor functions of the upper limb and pain perception than conventional therapy without mirror therapy.

Title: Dual imaging technique for stellate ganglion blockade

Citation: Journal of Pain, April 2016, vol./is. 17/4 SUPPL. 1(S90)

Author(s): Shepherd J., Dua A., Martin D.

Abstract: A 47-year-old male with a 4-year history of complex regional pain syndrome of the right upper extremity, the result of a motor vehicle accident, presented for stellate ganglion diagnostic/therapeutic blockade. Fluoroscopic imaging and ultrasound guidance were used to place the needle at the anterior base of the uncinat process of C7, and anterolateral to the longus colli muscle. After negative aspiration, 2 mL of contrast was then injected under fluoroscopy to identify any inadvertent intravascular injection. 4 mL of 2% lidocaine was then injected and the needle was withdrawn. The patient experienced Horner's syndrome and an increased skin temperature of the right upper extremity. Stellate ganglion blocks provide a valuable diagnostic and therapeutic benefit to sympathetically mediated pain syndromes in the head, neck, and upper extremity. . (Abstract Edited)

De-Quervain's tenosynovitis

Title: Mycobacterium arupense, Mycobacterium heraklionense, and a Newly Proposed Species, "Mycobacterium virginiense" sp. nov., but Not Mycobacterium

nonchromogenicum, as Species of the Mycobacterium terrae Complex Causing Tenosynovitis and Osteomyelitis.

Citation: Journal of clinical microbiology, May 2016, vol. 54, no. 5, p. 1340-1351

Author(s): Vasireddy, Ravikiran, Vasireddy, Sruthi, Brown-Elliott, Barbara A, Wengenack, Nancy L, Eke, Uzoamaka A, Benwill, Jeana L, Turenne, Christine, Wallace, Richard J

Abstract: Mycobacterium terrae complex has been recognized as a cause of tenosynovitis, with M. terrae and Mycobacterium nonchromogenicum reported as the primary etiologic pathogens. The molecular taxonomy of the M. terrae complex causing tenosynovitis has not been established despite approximately 50 previously reported cases. We evaluated 26 isolates of the M. terrae complex associated with tenosynovitis or osteomyelitis recovered between 1984 and 2014 from 13 states, including 5 isolates reported in 1991 as M. nonchromogenicum by nonmolecular methods. The isolates belonged to three validated species, one new proposed species, and two novel related strains. . (Abstract Edited)

Title: Outcome of longitudinal versus transverse incision in de Quervain's disease and its implications in Indian population.

Citation: Musculoskeletal surgery, Apr 2016, vol. 100, no. 1, p. 49-52

Author(s): Kumar, Kuljit

Abstract: de Quervain's disease is an inadequacy into the first extensor compartment of wrist between the osteofibrous tunnel and the tendons. This mechanical conflict generates a tenosynovitis of the extensor pollicis brevis and the abductor pollicis longus tendons in first dorsal extensor compartment of the wrist. (1) To compare the clinical results obtained by longitudinal and transverse incisions and (2) the implication of clinical results in Indian population. This study was conducted at Kalpana Chawla Government Medical College, Karnal, Haryana. . (Abstract Edited)

Dislocations, Fingers

Title: A Modification to Simplify the Harvest of a Hemi-hamate Autograft.

Citation: The Journal of hand surgery, May 2016, vol. 41, no. 5, p. e99.

Author(s): DeNoble, Peter H, Record, Nicole C

Abstract: Hemi-hamate arthroplasty is a valuable option for subacute dorsal fracture-dislocations of the proximal interphalangeal joint. Various harvesting techniques have been recommended via both anterograde and retrograde directions, both posing some technical challenges. We propose a technique for simplifying the hemi-hamate graft harvest by creating a window of visualization onto the dorsal hamate articular surface. This is achieved by resection of the dorsal-ulnar base of fourth metacarpal and the dorsal-radial base of the

fifth metacarpal. This makes it easier to measure and cut the hamate articular surface. It also provides a properly shaped graft that can be inset in the middle phalangeal defect without using backgrafting, and allowing screws to be placed perpendicular to the graft defect to obtain direct compression.

Dupuytren's

Title: A new bromelain-based enzyme for the release of Dupuytren's contracture: Dupuytren's enzymatic bromelain-based release.

Citation: Bone & joint research, May 2016, vol. 5, no. 5, p. 175-177, 2046-3758 (May 2016)

Author(s): Rubin, G, Rinott, M, Wolovelsky, A, Rosenberg, L, Shoham, Y, Rozen, N

Abstract: Injectable Bromelain Solution (IBS) is a modified investigational derivate of the medical grade bromelain-debriding pharmaceutical agent (NexoBrid) studied and approved for a rapid (four-hour single application), eschar-specific, deep burn debridement. We conducted an ex vivo study to determine the ability of IBS to dissolve-disrupt (enzymatic fasciotomy) Dupuytren's cords. Specially prepared medical grade IBS was injected into fresh Dupuytren's cords excised from patients undergoing surgical fasciectomy. These cords were tested by tension-loading them to failure with the Zwick 1445 (Zwick GmbH & Co. KG, Ulm, Germany) tension testing system. We completed a pilot concept-validation study that proved the efficacy of IBS to induce enzymatic fasciotomy in ten cords compared with control in ten cords. We then completed a dosing study with an additional 71 cords injected with IBS in descending doses from 150 mg/cc to 0.8 mg/cc. The dosing study demonstrated that the minimal effective dose of 0.5 cc of 6.25 mg/cc to 5 mg/cc could achieve cord rupture in more than 80% of cases. These preliminary results indicate that IBS may be effective in enzymatic fasciotomy in Dupuytren's contracture. Cite this article: Dr G. Rubin. A new bromelain-based enzyme for the release of Dupuytren's contracture: Dupuytren's enzymatic bromelain-based release.

Title: Collagenase Clostridium histolyticum in Dupuytren's contracture: a guide to its use in the EU

Citation: Drugs and Therapy Perspectives, April 2016, vol./is. 32/4(131-137)

Author(s): McKeage K., Lyseng-Williamson K.A.

Abstract: Collagenase Clostridium histolyticum (CCH; Xiapex) is an injectable enzymatic collagenase approved for the treatment of Dupuytren's contracture (DC). In two double-blind studies, up to three injections (mean of 1.5) of CCH per cord at monthly intervals were significantly more effective than placebo in reducing contractures, achieving clinical success in 64 % of treated joints affected by DC. CCH is generally well tolerated, with most adverse effects being local, transient injection-site reactions, such as oedema, pain and bruising. There is some evidence suggesting that CCH is associated with fewer major complications than open fasciectomy among selected patients. Estimated costs associated

with CCH are generally lower than those associated with fasciectomy, but cost-effectiveness based on accepted willingness-to-pay thresholds is dependent on injection price.

Flexor and Tendon Injuries

Title: Achilles tendon structure improves on UTC imaging over a 5-month pre-season in elite Australian football players.

Citation: Scandinavian journal of medicine & science in sports, May 2016, vol. 26, no. 5, p. 557-563,

Author(s): Docking, S I, Rosengarten, S D, Cook, J

Abstract: Pre-season injuries are common and may be due to a reintroduction of training loads. Tendons are sensitive to changes in load, making them vulnerable to injury in the pre-season. This study investigated changes in Achilles tendon structure on ultrasound tissue characterization (UTC) over the course of a 5-month pre-season in elite male Australian football players. (Abstract Edited)

Title: Extensive Loss of Tibialis Anterior Tendon: Surgical Repair With Split Tendon Transfer of Tibialis Posterior Tendon: A Case Report.

Citation: The Journal of foot and ankle surgery : official publication of the American College of Foot and Ankle Surgeons, May 2016, vol. 55, no. 3, p. 633-637

Author(s): Miyazaki, Tsuyoshi, Uchida, Kenzo, Kokubo, Yasuo, Inukai, Tomoo, Sakamoto,

Abstract: Extensive damage of the tibialis anterior tendon is rare and mainly caused by trauma. Surgical treatment of these injuries can become challenging owing to the limited availability of autogenous graft resources for reconstruction of the defect. In the present case report, we describe a large defect in the midfoot soft tissue after a traffic injury, which included complete loss of the tibialis anterior tendon. The tendon was reconstructed by split tendon transfer of the tibialis posterior tendon without sacrificing function, which was confirmed by the follow-up examination at 6 years after injury. We believe split tendon transfer of the tibialis posterior tendon can be one of the treatment options for patients with extensive disruption of the tibialis anterior tendon

Title: Percutaneous, Minimally Invasive Repair of Traumatic and Simultaneous Rupture of Both Achilles Tendons: A Case Report.

Citation: The Journal of foot and ankle surgery : official publication of the American College of Foot and Ankle Surgeons, May 2016, vol. 55, no. 3, p. 642-644

Author(s): Zietek, Pawel, Karaczun, Maciej, Kruk, Bartosz, Szczypior, Karina

Abstract: Achilles injury is a common musculoskeletal disorder. Bilateral rupture of the Achilles tendon, however, is much less common and usually occurs spontaneously. Complete, traumatic, and bilateral ruptures are rare and typically require long periods of immobilization before the patient can return to full weightbearing. A 52-year-old male was hospitalized for bilateral traumatic rupture to both Achilles tendons. No risk factors for tendon rupture were found. Blood samples revealed no peripheral blood pathologic features. Both tendons were repaired with percutaneous, minimally invasive surgery using the Achillon[®] tendon suture system. Rehabilitation was begun 4 weeks later. (Abstract Edited)

Title: Recovery of rock climbing performance after surgical reconstruction of finger pulleys.

Citation: The Journal of hand surgery, European volume, May 2016, vol. 41, no. 4, p. 406-412, 2043-6289 (May 2016)

Author(s): Bouyer, M, Forli, A, Semere, A, Chedal Bornu, B J, Corcella, D, Moutet, F

Abstract: This study evaluated recovery of sport performance and correction of bowstringing after surgical reconstruction of closed finger pulley rupture in high-level rock climbers. A total of 38 patients treated with an extensor retinaculum graft were assessed. The mean follow-up time was 85 months, and 30 patients returned to their previous climbing level. The mean total active motion score was 96% of the opposite side. All patients had an excellent Buck-Gramcko score. There was no significant difference in grip strength and tip pinch strength in the crimp position between the injured side and the opposite side. A total of 31 patients were examined with ultrasonography. In 18, flexor bowstringing effects had returned to near-normal values. There was an association between rock climbing level recovery and the flexor bowstringing correction (odds ratio, 6.9; 95% confidence interval, 1.1-42.8). If flexor bowstringing was corrected, patients were more likely to regain their preinjury sport performance. The ultrasonography measurement was a useful tool for predicting functional recovery. 4.

Title: Comparison of Anatomic Double- and Single-Bundle Techniques for Anterior Cruciate Ligament Reconstruction Using Hamstring Tendon Autografts: A Prospective Randomized Study With 5-Year Clinical and Radiographic Follow-up.

Citation: The American journal of sports medicine, May 2016, vol. 44, no. 5, p. 1225-1236,

Author(s): Karikis, Ioannis, Desai, Neel, Sernert, Ninni, Rostgard-Christensen, Lars,

Abstract: The aim of this prospective randomized study was to compare the outcomes of the anatomic double-bundle (DB) and anatomic single-bundle (SB) techniques 5 years after anterior cruciate ligament (ACL) reconstruction. Since more effective restoration of rotational laxity is considered the main advantage of the DB technique, the pivot-shift test was the primary outcome variable of the study. Double-bundle ACL reconstruction will result in a better outcome in terms of the pivot-shift test. Randomized controlled trial; Level of evidence, 1. A total of 105 patients (33 women, 72 men; median age, 27 years; range, 18-52 years) were randomized and underwent ACL reconstruction (DB group, n = 53; SB group,

n = 52). All reconstructions were performed anatomically by identifying the ACL footprints, using the anteromedial portal for the femoral tunnel drilling, and utilizing interference screw for tibial and femoral fixation. (Abstract Edited)

Title: A Systematic Review of the Outcomes of Posterolateral Corner Knee Injuries, Part 1: Surgical Treatment of Acute Injuries.

Citation: The American journal of sports medicine, May 2016, vol. 44, no. 5, p. 1336-1342

Author(s): Geeslin, Andrew G, Moulton, Samuel G, LaPrade, Robert F

Abstract: There is a paucity of outcome data to guide the surgical treatment of acute grade III posterolateral corner (PLC) knee injuries. To systematically review the literature to compare clinical outcomes of the treatment for acute grade III PLC injuries. Systematic review; Level of evidence, 4. A systematic review of the literature including Cochrane, PubMed, Medline, and Embase was performed. The following search terms were used: posterolateral corner knee, posterolateral knee, posterolateral instability, multiligament knee, and knee dislocation. Inclusion criteria were outcome studies of surgically treated acute PLC injuries with a minimum 2-year follow-up, subjective outcomes, objective outcomes including varus stability, and subgroup data on PLC injuries. (Abstract Edited)

Title: Extensor Mechanism Disruption in Knee Dislocation.

Citation: The journal of knee surgery, May 2016, vol. 29, no. 4, p. 293-299, 1938-2480

Author(s): O'Malley, Michael, Reardon, Patrick, Pareek, Ayoosh, Krych, Aaron, Levy, Bruce A, Stuart, Michael J

Abstract: Disruption of the knee extensor mechanism is a challenging injury with no clear consensus on optimal treatment. Although rare in the setting of knee dislocations, these injuries should not be overlooked. Acute, complete rupture of either the quadriceps or patellar tendon necessitates primary repair with or without augmentation. Surgical management may also be required in the setting of a partial tear if a significant extensor lag is present or nonoperative treatment has failed. Tendon augmentation is used during primary repair if the native tissue is inadequate or after a failed primary repair. The purpose of this study is to evaluate extensor mechanism disruption incidence, injury patterns, associated injuries, and surgical options, including a novel tendon augmentation technique. (Abstract Edited)

Title: Peroneal tendon pathology evaluation using the oblique sagittal plane in ankle MR imaging.

Citation: Acta radiologica (Stockholm, Sweden : 1987), May 2016, vol. 57, no. 5, p. 620-626

Author(s): Park, Hee Jin, Lee, So Yeon, Kim, Eugene, Kim, Mi Sung, Chung, Eun Chul,

Abstract: Because peroneal tendons course from the lateral side of the proximal fibula through the posterior side of the distal fibula, correct diagnosis of the tendon pathology on an orthogonal sagittal plane can be difficult. To evaluate the diagnostic usefulness of oblique sagittal imaging (peroneal view) for evaluation of peroneal tendon pathology. This retrospective study included 69 patients at our institution who underwent routine ankle magnetic resonance imaging (MRI) using the peroneal view. (Abstract Edited)

Title: Implications of the calf musculature and Achilles tendon architectures for understanding the site of injury.

Citation: Journal of biomechanics, May 2016, vol. 49, no. 7, p. 1180-1185

Author(s): Toumi, H, Larguech, G, Cherief, M, Batakis, A, Hambli, R, Jennane, R, Best, T M, Lespessailles, E

Abstract: Clinically the sites of Achilles Tendon (AT) overuse conditions can be divided into the tendon mid-portion and osteotendinous attachment. We propose an anatomical analysis of the triceps surae musculotendon unit that could provide a possible anatomic explanation for these 2 sites of injury. Twelve cadavers (age 74 ± 7 years) were studied. In both legs, calf muscles (lateral gastrocnemius (LG), medial gastrocnemius (MG) and soleus) were dissected and their volumes measured. Fine saw cuts were made in the sagittal plane, either side of the midline of the calcaneus. Each strip contained the distal part of the tendon and its insertion, together with the superior tuberosity of the calcaneus. Trabecular architecture was analyzed from X-rays taken with Faxitron radiography. (Abstract Edited)

Title: Hyaluronan alone, combined with botulinus toxin or placebo injection therapy for athletic patients with patellar tendinopathy (jumpers knee)

Citation: Osteoarthritis and Cartilage, April 2016, vol./is. 24/(S191-S192)

Author(s): Petrella R.J., Petrella A.F., Decaria J.

Abstract: Purpose: The purpose of this study was to determine the efficacy and safety of Hyaluronan alone and Hyaluronan combined with Botulinum toxin vs placebo injection in patellar tendinopathy. Methods: 120 patients were treated between January 2010 to June 2015. The observation period averaged 36.8 months. All patients were graded stage 1-3 by Blazina's classification. Hyaluronan was injected into the interface between the patellar tendon and the infrapatellar fat pad at the proximal insertion, or into the region of maximum tenderness. Patients were randomized using a computer generated program to one of: Hyaluronan 2.8cc (750- 1300kDa), 2.8cc Hyaluronan + 40 units Botulinus toxin or 2.8cc saline placebo. Injection was repeated at 7 days. Assessments were obtained at baseline, 7, 14, 30 and 90 days. Participants were volleyball, soccer, football, tennis and basketball players with symptoms of patellar tendinopathy for a minimum of 3 to a maximum duration of 12 months. (Abstract Edited)

Title: Orthotic heel wedges do not alter hindfoot kinematics and achilles tendon force during level and inclined walking in healthy individuals

Citation: Journal of Applied Biomechanics, April 2016, vol./is. 32/2(160-170)

Author(s): Weinert-Aplin R.A., Bull A.M.J., McGregor A.H.

Abstract: Conservative treatments such as in-shoe orthotic heel wedges to treat musculoskeletal injuries are not new. However, weak evidence supporting their use in the management of Achilles tendonitis suggests the mechanism by which these heel wedges works remains poorly understood. It was the aim of this study to test the underlying hypothesis that heel wedges can reduce Achilles tendon load. A musculoskeletal modeling approach was used to quantify changes in lower limb mechanics when walking due to the introduction of 12-mm orthotic heel wedges. (Abstract Edited)

Title: Vibratory stimuli immediately improves quadriceps function in individuals with anterior cruciate ligament reconstruction: Implications for treatment and prevention of post-traumatic knee osteoarthritis

Citation: Osteoarthritis and Cartilage, April 2016, vol./is. 24/(S492)

Author(s): Pamukoff D.N., Pietrosimone B., Ryan E.D., Weinhold P.S., Lewek M.D.,

Abstract: Purpose: Quadriceps dysfunction contributes to physical disability and the development of knee osteoarthritis in individuals with anterior cruciate ligament reconstruction (ACLR). Restoring quadriceps function is essential during rehabilitation in order to allow for more effective force attenuation and propulsion during gait. Whole body vibration (WBV) and local muscle vibration (LMV) may improve neuromuscular function; thereby augmenting traditional therapeutic exercise and eliciting greater strength outcomes. The purpose of this study was to determine the immediate effects of WBV and LMV on quadriceps function in individuals with ACLR. (Abstract Edited)

Title: Hypertrophy and structural alterations in tibiofemoral articular cartilage 6-24 months after anterior cruciate ligament reconstruction

Citation: Osteoarthritis and Cartilage, April 2016, vol./is. 24/(S408-S409)

Author(s): Thorhauer E., Irrgang J., Fu F., Tashman S.

Abstract: Purpose: Anterior cruciate ligament (ACL) injury, and subsequent reconstruction, is a significant risk factor for the development of knee osteoarthritis (OA). The purpose of this study was to assess changes over time in regional cartilage properties using quantitative MRI. We hypothesized that increases in T2 relaxometry values and changes in tibio-femoral cartilage thickness would occur between 6 months and 24 months after ACL reconstruction. (Abstract Edited)

Mallet Finger/Thumb Deformity

Title: Mallet finger: a simulation and analysis of hyperflexion versus hyperextension injuries.

Citation: Surgical and radiologic anatomy : SRA, May 2016, vol. 38, no. 4, p. 403-407

Author(s): Kreuder, Andrea, Pennig, Dietmar, Boese, Christoph Kolja, Eysel, Peer,

Abstract: The goal of this study was to simulate the mechanisms of hyperflexion and hyperextension injuries of the distal interphalangeal (DIP) joint of the hand and to analyze the resulting extensor tendon injury patterns. The hypotheses were raised that hyperflexion trauma leads to a plastic deformation of the extensor tendon aponeurosis, with or without a small bony avulsion fragment but without joint surface involvement, and that hyperextension injuries can create a shear fracture of the dorsal lip of the distal phalanx, without injury to the extensor tendon aponeurosis. Loading was applied with a swinging pendulum impacting the distal phalanx in 103 human specimens in either an extended or flexion position. After loading, injury patterns were analyzed radiologically and histologically. There was evidence that hyperflexion trauma leads to a plastic deformation or rupture of the extensor tendon. (Abstract Edited)

Nerve Injuries

Title: High Ulnar Nerve Injuries. Nerve Transfers to Restore Function

Citation: Hand Clinics, May 2016, vol./is. 32/2(219-226)

Author(s): Patterson J.M.M.

Abstract: Peripheral nerve injuries are challenging problems. Nerve transfers are one of many options available to surgeons caring for these patients, although they do not replace tendon transfers, nerve graft, or primary repair in all patients. Distal nerve transfers for the treatment of high ulnar nerve injuries allow for a shorter reinnervation period and improved ulnar intrinsic recovery, which are critical to function of the hand.

Title: Nerve Transfers for the Restoration of Wrist, Finger, and Thumb Extension After High Radial Nerve Injury

Citation: Hand Clinics, May 2016, vol./is. 32/2(191-207)

Author(s): Pet M.A., Lipira A.B., Ko J.H.

Abstract: High radial nerve injury is a common pattern of peripheral nerve injury most often associated with orthopedic trauma. Nerve transfers to the wrist and finger extensors, often from the median nerve, offer several advantages when compared to nerve repair or grafting and tendon transfer. In this article, we discuss the forearm anatomy pertinent to performing these nerve transfers and review the literature surrounding nerve transfers for wrist, finger, and thumb extension. A suggested algorithm for management of acute traumatic high radial

nerve palsy is offered, and our preferred surgical technique for treatment of high radial nerve palsy is provided.

Title: Treatment of Peroneal Nerve Injuries in the Multiligament Injured/Dislocated Knee.

Citation: The journal of knee surgery, May 2016, vol. 29, no. 4, p. 287-292

Author(s): O'Malley, Michael P, Pareek, Ayoosh, Reardon, Patrick, Krych, Aaron,

Abstract: Tibiofemoral knee dislocations are typically a consequence of high-energy mechanisms, causing significant damage to the soft tissue and osseous structures of the knee. Concomitant neurovascular injuries such as popliteal artery and peroneal nerve injuries are also common and can have significant long-term consequences. The mechanism typically involves a traction injury to the peroneal nerve subsequent to an extreme varus moment applied to the knee. Complete nerve injuries typically hold a worse prognosis than incomplete palsies. Rates of functional recovery in the setting of a complete palsy following a knee dislocation event have been dismal. (Abstract Edited)

Title: Nerve Transfers in Tetraplegia.

Citation: Hand clinics, May 2016, vol. 32, no. 2, p. 227-242

Author(s): Fox, Ida K

Abstract: Hand and upper extremity function is instrumental to basic activities of daily living and level of independence in cervical spinal cord injury (SCI). Nerve transfer surgery is a novel and alternate approach for restoring function in SCI. This article discusses the biologic basis of nerve transfers in SCI, patient evaluation, management, and surgical approaches. Although the application of this technique is not new; recent case reports and case series in the literature have increased interest in this field. The challenges are to improve function, achieve maximal gains in function, avoid complications, and to primum non nocere.

Title: The prevalence of carpal tunnel syndrome among long-term manual wheelchair users with spinal cord injury: A cross-sectional study.

Citation: The journal of spinal cord medicine, May 2016, vol. 39, no. 3, p. 265-271

Author(s): Asheghan, Mahsa, Hollisaz, Mohammad Taghi, Taheri, Taher, Kazemi,

Abstract: Use of a handrim wheelchair could force the wrist into extreme excursions and encroachment of the median nerve. We performed a study of the prevalence of carpal tunnel syndrome in prolonged wheelchair users. A cross-sectional study was conducted for one year in an outpatient clinic of spinal cord injury. (Abstract Edited)

Title: Sclerotherapy of Diffuse and Infiltrative Venous Malformations of the Hand and Distal Forearm.

Citation: Cardiovascular and interventional radiology, May 2016, vol. 39, no. 5, p. 705-710

Author(s): Guevara, Carlos J, Gonzalez-Araiza, Guillermo, Kim, Seung K, Sheybani,

Abstract: Venous malformations (VM) involving the hand and forearm often lead to chronic pain and dysfunction, and the threshold for treatment is high due to the risk of nerve and skin damage, functional deterioration and compartment syndrome. The purpose of this study is to demonstrate that sclerotherapy of diffuse and infiltrative VM of the hand is a safe and effective therapy. A retrospective review of all patients with diffuse and infiltrative VM of the hand and forearm treated with sclerotherapy from 2001 to 2014 was conducted. (Abstract Edited)

Title: Supplementary motor area deactivation impacts the recovery of hand function from severe peripheral nerve injury.

Citation: Neural regeneration research, Apr 2016, vol. 11, no. 4, p. 670-675

Author(s): Lu, Ye-Chen, Liu, Han-Qiu, Hua, Xu-Yun, Shen, Yun-Dong, Xu, Wen-Dong,

Abstract: Although some patients have successful peripheral nerve regeneration, a poor recovery of hand function often occurs after peripheral nerve injury. It is believed that the capability of brain plasticity is crucial for the recovery of hand function. The supplementary motor area may play a key role in brain remodeling after peripheral nerve injury. In this study, we explored the activation mode of the supplementary motor area during a motor imagery task. We investigated the plasticity of the central nervous system after brachial plexus injury, using the motor imagery task. Results from functional magnetic resonance imaging showed that after brachial plexus injury, the motor imagery task for the affected limbs of the patients triggered no obvious activation of bilateral supplementary motor areas. This result indicates that it is difficult to excite the supplementary motor areas of brachial plexus injury patients during a motor imagery task, thereby impacting brain remodeling. Deactivation of the supplementary motor area is likely to be a serious problem for brachial plexus injury patients in terms of preparing, initiating and executing certain movements, which may be partly responsible for the unsatisfactory clinical recovery of hand function.

Title: Small-to-moderate decreases in cold hypersensitivity up to 3 years after severe hand injuries: A prospective cohort study.

Citation: Journal of plastic surgery and hand surgery, Apr 2016, vol. 50, no. 2, p. 74-79,

Author(s): Vaksvik, T, Røkkum, M, Haugstvedt, J R, Holm, I

Abstract: The natural course and predictors for decreased cold hypersensitivity were studied in 85 patients with severe hand injuries involving nerve lesions. Questionnaires including the McCabe Cold Sensitivity Severity scale (CSS 0-400) were collected after injury, and at 6-month, 12-month, 2-year, and 3-year follow-ups. Between the 12-month and 3-year follow-up, there was a small decrease in cold hypersensitivity as measured by the CSS

(median = 24; Q1-Q3 = -11-75; n = 85). Five of the patients recovered from cold hypersensitivity, and ~ 40% of the patients were less affected by cold hypersensitivity in daily life. Little or no pain early after injury and higher CSS-scores 12 months after primary surgery were weakly associated with the reduced CSS-scores ($R(2) = 0.20$) at the 3-year follow-up. Six patients had changed work or did not work due to cold hypersensitivity, but the majority of the patients had kept their cold-exposed work. Cold-hypersensitive patients may have a reasonable chance for decreased cold sensitivity and cold-associated activity limitations over time, although the majority of the patients will experience persistent problems. Tools to predict improvement remain insufficient.

Title: Ultrasonographic Median Nerve Changes After Repeated Wheelchair Transfers in Persons With Paraplegia: Relationship With Subject Characteristics and Transfer Skills.

Citation: PM & R : the journal of injury, function, and rehabilitation, Apr 2016, vol. 8, no. 4, p. 305-313,

Author(s): Hogaboom, Nathan S, Diehl, Jessica A, Oyster, Michelle L, Koontz, Alicia M,

Abstract: Wheelchair users with spinal cord injuries are susceptible to peripheral neuropathies from overuse, yet no studies have established a relationship between median neuropathy and wheelchair transfers. A more thorough understanding of how transfers and technique contribute to pathologic conditions may guide interventions that curtail its development. To evaluate the effects of repeated transfers on ultrasound markers for carpal tunnel syndrome (CTS) in people with spinal cord injuries and to relate changes to subject characteristics and transfer skills. (Abstract Edited)

Title: Supplementary Motor Cortical Changes Explored by Resting-State Functional Connectivity in Brachial Plexus Injury.

Citation: World neurosurgery, Apr 2016, vol. 88, p. 300-305

Author(s): Lu, Yechen, Liu, Hanqiu, Hua, Xuyun, Xu, Wen-Dong, Xu, Jian-Guang,

Abstract: Brachial plexus injury (BPI) is a serious peripheral nerve injury, and clinical outcomes are generally unsatisfactory. It has been reported that cortical plasticity could influence the restoration of motor function. However, the neurologic mechanism of BPI is unclear, which provides a basis for further investigation. The supplementary motor area (SMA) plays an important role in the regulation of motor function. This study aims to explore SMA-whole brain functional connectivity after deafferentation of the brachial plexus. Study subjects included 16 patients with BPI and 8 healthy volunteers. (Abstract Edited)

Title: Transcriptional Pathways Altered in Response to Vibration in a Model of Hand-Arm Vibration Syndrome.

Citation: Journal of occupational and environmental medicine / American College of Occupational and Environmental Medicine, Apr 2016, vol. 58, no. 4, p. 344-350,

Author(s): Waugh, Stacey, Kashon, Michael L, Li, Shengqiao, Miller, Gerome R,

Abstract: The aim of this study was to use an established model of vibration-induced injury to assess frequency-dependent changes in transcript expression in skin, artery, and nerve tissues. Transcript expression in tissues from control and vibration-exposed rats (4 h/day for 10 days at 62.5, 125, or 250 Hz; 49 m/s, rms) was measured. Transcripts affected by vibration were used in bioinformatics analyses to identify molecular- and disease-related pathways associated with exposure to vibration. Analyses revealed that cancer-related pathways showed frequency-dependent changes in activation or inhibition. Most notably, the breast-related cancer-1 pathway was affected. Other pathways associated with breast cancer type 1 susceptibility protein related signaling, or associated with cancer and cell cycle/cell survivability were also affected. Occupational exposure to vibration may result in DNA damage and alterations in cell signaling pathways that have significant effects on cellular division.

Title: Neurotization of free gracilis transfer with the brachialis branch of the musculocutaneous nerve to restore finger and thumb flexion in lower trunk brachial plexus injury: an anatomical study and case report.

Citation: Clinics (São Paulo, Brazil), Apr 2016, vol. 71, no. 4, p. 193-198,

Author(s): Yang, Yi, Zou, Xue-Jun, Fu, Guo, Qin, Ben-Gang, Yang, Jian-Tao, Li,

Abstract: To investigate the feasibility of using free gracilis muscle transfer along with the brachialis muscle branch of the musculocutaneous nerve to restore finger and thumb flexion in lower trunk brachial plexus injury according to an anatomical study and a case report. Thirty formalin-fixed upper extremities from 15 adult cadavers were used in this study. (Abstract Edited)

Trapeziectomy

Title: Retrospective Study of a Series of 20 Ivory Prostheses in the Treatment of Trapeziometacarpal Osteoarthritis.

Citation: Journal of wrist surgery, May 2016, vol. 5, no. 2, p. 131-136

Author(s): Spaans, Anne J, van Minnen, L Paul, Weijns, Marieke E, Braakenburg, Assa,

Abstract: Background Many surgical treatment options for osteoarthritis (OA) of the trapeziometacarpal (TMC) joint exist. However, no procedure has been proven superior. Good results have been described for TMC joint replacement. Purpose To analyze the results of the Ivory prosthesis in the treatment of symptomatic TMC OA. Patients and Methods A retrospective single-center follow-up study was performed. Visual analogue scale (VAS) for pain, Disabilities of the Arm, Shoulder and Hand (DASH) score, Michigan Hand Outcomes Questionnaire (MHQ), active range of motion, strength, and radiological

outcomes were assessed and analyzed. Differences between the operated and nonoperated hand were analyzed using paired t-tests. (Abstract Edited)

Title: Extensor Pollicis Longus Rupture after Mini TightRope Suspensionplasty.

Citation: Journal of wrist surgery, May 2016, vol. 5, no. 2, p. 143-146,

Author(s): Seetharaman, Mani, Vitale, Mark A, Desai, Kapil, Crowe, John F

Abstract: Background Arthritis of the first carpometacarpal (CMC) joint has been surgically treated in multiple ways with varying levels of success as measured by subjective and objective measures. Trapeziectomy with numerous variations in suspensionplasty comprises one of the more commonly used surgical procedures. Recently, the Mini TightRope apparatus has been utilized as a new method for achieving suspensionplasty, and as such lacks significant review of use and safety in the literature. (Abstract Edited)

Title: Slip abductor pollicis longus suspension tendinoplasty for management of trapezio-metacarpal joint osteoarthritis.

Citation: International orthopaedics, Apr 2016, vol. 40, no. 4, p. 765-769

Author(s): Singer, Mohamed Salah, Kandel, Wael Abdelaziz

Abstract: Trapezio-metacarpal (TM) joint arthritis is a common cause of pain and functional disability of the hand. The ideal surgical procedure for TM joint osteoarthritis is still controversial. The aim of the current study is to assess the outcome of complete trapezium excision and abductor pollicis longus tendon interposition arthroplasty in the treatment of TM osteoarthritis. Twenty patients (16 women and 4 men) were prospectively enrolled in the current study with average age of 51.5 years (36-64). All patients had complete trapezium excision and abductor pollicis longus tendon interposition arthroplasty with minimum follow-up of 24 months. At final follow-up there was significant improvement as regard pain, range of motion, and functional assessment scores. (Abstract Edited)

Title: Use of the entire flexor carpi radialis tendon for basal thumb ligament reconstruction interposition arthroplasty.

Citation: Hand surgery and rehabilitation, Apr 2016, vol. 35, no. 2, p. 107-113

Author(s): Werthel, Jean-David, Dubert, Thierry

Abstract: Recent studies seem to show that ligament reconstruction with tendon interposition (LRTI) does not provide any benefit over trapezium excision alone; however dorsal subluxation was not measured in these studies. We believe it is logical to perform ligamentoplasty in order to obtain long-term stability and therefore treat dorsal subluxation. Our aim is to verify this hypothesis in an observational prospective study of LRTI using the entire flexor carpi radialis (FCR) tendon. (Abstract Edited)

Title: Slip abductor pollicis longus suspension tendinoplasty for management of trapezio-metacarpal joint osteoarthritis

Citation: International Orthopaedics, April 2016, vol./is. 40/4(765-769)

Author(s): Singer M.S., Kandel W.A.

Abstract: Purpose: Trapezio-metacarpal (TM) joint arthritis is a common cause of pain and functional disability of the hand. The ideal surgical procedure for TM joint osteoarthritis is still controversial. The aim of the current study is to assess the outcome of complete trapezium excision and abductor pollicis longus tendon interposition arthroplasty in the treatment of TM osteoarthritis. (Abstract Edited)

Trigger finger/thumb

Title: Comparison of three different incision techniques in A1 pulley release on scar tissue formation and postoperative rehabilitation

Citation: Archives of Orthopaedic and Trauma Surgery, May 2016, vol./is. 136/5(731-737)

Author(s): Kloeters O., Ulrich D.J.O., Bloemsma G., van Houdt C.I.A.

Abstract: Introduction: The optimal surgical approach for trigger finger release remains controversial in hindsight of postoperative rehabilitation as well as scar tissue formation. In this study, we comparatively evaluated the outcome of three different types of skin incision by employing the "Disability of the Arm Shoulder and Hand Score" (DASH) and by quantitative ultrasound measurements of scar tissue volume. (Abstract Edited)

Title: Current status of ultrasonography of the finger.

Citation: Ultrasonography (Seoul, Korea), Apr 2016, vol. 35, no. 2, p. 110-123,

Author(s): Lee, Seun Ah, Kim, Baek Hyun, Kim, Seon-Jeong, Kim, Ji Na, Park, Sun-Young,

Abstract: The recent development of advanced high-resolution transducers has enabled the fast, easy, and dynamic ultrasonographic evaluation of small, superficial structures such as the finger. In order to best exploit these advances, it is important to understand the normal anatomy and the basic pathologies of the finger, as exemplified by the following conditions involving the dorsal, volar, and lateral sections of the finger: sagittal band injuries, mallet finger, and Boutonnière deformity (dorsal aspect); flexor tendon tears, trigger finger, and volar plate injuries (volar aspect); gamekeeper's thumb (Stener lesions) and other collateral ligament tears (lateral aspect); and other lesions. This review provides a basis for understanding the ultrasonography of the finger and will therefore be useful for radiologists.

Title: Trigger finger: ultrasound-guided injection with an in-plane approach under the A1 pulley

Citation: Therapeutic Advances in Musculoskeletal Disease, April 2016, vol./is. 8/2(51-52)

Author(s): Yildizgoren M.T., Velioglu O., Guler H.

Title: Developmental Trigger Thumb.

Citation: Pediatric annals, Apr 2016, vol. 45, no. 4, p. e135.,

Author(s): Twu, Jonathan, Angeles, Jovito

Abstract: Developmental trigger thumb, although uncommon, can be easily identifiable in the pediatric outpatient visit. Patients often present with their thumb locked in flexion and a firm nodule at the base of the thumb. The thumb is usually passively correctable and nonpainful. It is important to examine the opposite thumb as bilateral trigger thumbs occur at a rate of 25% to 30%. Nonsurgical options have been proposed in the past including watchful waiting, extension exercises, splinting, and steroid injections with mixed results. Surgical intervention is indicated when there is painful triggering or the thumb is not passively correctable. Surgical treatment is an outpatient procedure that involves releasing the thumb flexor tendon from a small fibrous sheath called the A1 pulley. The overall recurrence rate after surgery is 1.4%. Our recommendation is for early referral to a pediatric orthopedic surgeon to evaluate for the need for surgical intervention.

Ulnar Collateral ligament Sprain

No new evidence this month

Wrist and Finger fractures

Title: Hand Dominance and Common Hand Conditions.

Citation: Orthopedics, May 2016, vol. 39, no. 3, p. e444.

Author(s): Lutsky, Kevin, Kim, Nayoung, Medina, Juana, Maltenfort, Mitchell,

Abstract: The goals of this study were to (1) assess how frequently patients present for evaluation of common hand disorders in relation to hand dominance and (2) evaluate the effect of hand dominance on function in patients with these conditions. The authors hypothesized that (1) the majority of patients who seek evaluation would have a condition that affects the dominant hand, and (2) disability scores would be worse if the dominant hand is involved. They retrospectively reviewed the records of consecutive patients who

presented for treatment to their institution with unilateral symptoms of 5 common disorders of the hand: carpal tunnel syndrome (CTS), de Quervain's tenosynovitis (DEQ), lateral epicondylitis (LE), hand osteoarthritis (OA), and trigger finger (TF). The authors assessed the effect of diagnosis and hand dominance on Disabilities of the Arm, Shoulder and Hand (DASH) scores. The study group comprised 1029 patients (379 men and 650 women) with a mean age of 59.5 years. Ninety percent were right-hand dominant. The dominant and nondominant hands were affected with relatively equal frequency for CTS, DEQ, OA, and TF (range, 45%-53%). (Abstract Edited)

Title: Classifications of Acute Scaphoid Fractures: A Systematic Literature Review.

Citation: Journal of wrist surgery, May 2016, vol. 5, no. 2, p. 152-159

Author(s): Ten Berg, Paul W, Drijkoningen, Tessa, Strackee, Simon D, Buijze, Geert A

Abstract: Background In the lack of consensus, surgeon-based preference determines how acute scaphoid fractures are classified. There is a great variety of classification systems with considerable controversies. Purposes The purpose of this study was to provide an overview of the different classification systems, clarifying their subgroups and analyzing their popularity by comparing citation indexes. The intention was to improve data comparison between studies using heterogeneous fracture descriptions. (Abstract Edited)

Title: Novel technique in ED: supracondylar ultrasound-guided nerve block for reduction of distal radius fractures.

Citation: The American journal of emergency medicine, May 2016, vol. 34, no. 5, p. 912-913

Author(s): Aydin, Ali Attila, Bilge, Sedat, Kaya, Murtaza, Aydin, Guclu, Cinar, Orhan

Title: The epidemiology of fractures of the scaphoid: impact of age, gender, deprivation and seasonality.

Citation: The bone & joint journal, May 2016, vol. 98-B, no. 5, p. 654-659,

Author(s): Garala, K, Taub, N A, Dias, J J

Abstract: This study explores the epidemiology of patients with a fracture of the scaphoid presenting to a regional teaching hospital. All patients with a confirmed fracture of the scaphoid over a retrospective period between January 2010 and May 2013 were included. Their demographics, deprivation status and when the fracture occurred was noted and assessed. There were 415 fractures in 365 males and 50 females. The incidence of fracture of the scaphoid was 12.4 in 100 000 each year in the general population. The mean age of the patients was 22 years (nine to 35); the highest incidence was in males aged between 15 and 19 years. We calculate the annual incidence in the United Kingdom to be 7265 each year. Patients with the lowest socioeconomic status had an incidence of 18.57 in 100 000 whereas the least deprived patients had an incidence of 9.98 ($p < 0.001$). There was evidence of a seasonal trend ($p = 0.022$) with the highest monthly rate found in June (16.96

in 100 000 each year) and the lowest was in December (7.61 in 100 000 each year). There were significantly fewer presentations of fracture at the weekend ($p < 0.001$), and the highest incidence was on Mondays. Most fractures occurred at the waist (64%) and tubercle (18.1%). In this large-scale epidemiological study, we confirmed that young men are most at risk of sustaining a fracture of the scaphoid, and report new factors in relation to social deprivation and seasonality that influence scaphoid fractures.

Title: Stabilization of Volar Ulnar Rim Fractures of the Distal Radius: Current Techniques and Review of the Literature.

Citation: Journal of wrist surgery, May 2016, vol. 5, no. 2, p. 113-119,

Author(s): O'Shaughnessy, Maureen A, Shin, Alexander Y, Kakar, Sanjeev

Abstract: Background Distal radius fractures involving the lunate facet can be challenging to manage. Reports have shown the volar carpal subluxation/dislocation that can occur if the facet is not appropriately stabilized. Literature Review Recent emphasis in the literature has underscored the difficulty in managing this fracture fragment, suggesting standard volar plates may not be able to adequately stabilize the fragment. This article reviews the current literature with a special emphasis on fixation with a specifically designed fragment-specific hook plate to secure the lunate facet. (Abstract Edited)

Title: Distal radius fractures-Design of locking mechanism in plate system and recent surgical procedures.

Citation: Journal of orthopaedic science : official journal of the Japanese Orthopaedic Association, May 2016, vol. 21, no. 3, p. 258-262,

Author(s): Inagaki, Katsunori, Kawasaki, Keikichi

Abstract: Recently, many studies have emphasized the importance of the comprehension of detailed functional anatomy of the distal forearm and wrist joint, and their biomechanics. A significant contribution which yields good functional outcomes of surgical treatment was the development of the locking plate technology; this technology has facilitated the improvement of the surgical technique for the fixation of fractures. This article reviews the locking mechanism and design of the fixation screws and plate, and the details of the surgical technique including the double-tired subchondral support procedure as it is applied to common fractures. Arthroscopic-assisted surgical procedures can be used to reduce the intra-articular fracture fragments after realignment of the distal radius with the locking plate. This technique is also useful at the time of fixation to assess soft tissue injury. The combination of arthroscopic-assisted reduction and locking plate fixation is now indicated for AO type C2 and C3 intra-articular comminuted fractures. Copyright © 2016 The Japanese Orthopaedic Association.

Title: Four-Corner Concept: CT-Based Assessment of Fracture Patterns in Distal Radius.

Citation: Journal of wrist surgery, May 2016,

Author(s): Brink, P R G, Rikli, D A

Abstract: Operative treatment using plate fixation is an important adjunct in the treatment of distal radius fractures, although the evidence for its superiority over other modalities remains limited. We propose a new concept for fractures of the distal radius, based on the three-column model of the distal radius, and on the expanding knowledge about the different fracture patterns obtained by evaluation of the distal radius by computed tomographic (CT) scan. All fracture types can be characterized by subdividing the wrist joint into four corners, each with its own characteristics in terms of mobility, stability, and transfer of forces in the intact distal radius. Recognition of the specific fracture types based on this four-corner concept enables a tailored approach to treatment.

Title: Distal radius fracture malunion: Importance of managing injuries of the distal radio-ulnar joint.

Citation: Orthopaedics & traumatology, surgery & research : OTSR, May 2016, vol. 102, no. 3, p. 327-332,

Author(s): Delclaux, S, Trang Pham, T T, Bonnevalle, N, Aprédoaei, C, Rongièrès, M, Bonnevalle, P, Mansat, P

Abstract: Distal radius malunion is a major complication of distal radius fractures, reported in 0 to 33% of cases. Corrective osteotomy to restore normal anatomy usually provides improved function and significant pain relief. We report the outcomes in a case-series with special attention to the potential influence of the initial management. This single-centre retrospective study included 12 patients with a mean age of 35years (range, 14-60years) who were managed by different surgeons. (Abstract Edited)

Title: Accuracy of bedside ultrasonography for the diagnosis of finger fractures.

Citation: The American journal of emergency medicine, May 2016, vol. 34, no. 5, p. 809-812,

Author(s): Aksay, Ersin, Kilic, Turgay Yilmaz, Yesilaras, Murat, Tur, Feriyde Caliskan, Sever, Mustafa, Kalenderer, Onder

Abstract: Diagnosis of bone fractures by ultrasonography is becoming increasingly popular in emergency medicine practice. We aimed to determine the diagnostic sensitivity and specificity of point-of-care ultrasonography (PoCUS) compared with plain radiographs in proximal and middle phalanx fractures. (Abstract Edited)

Title: Peri-lunate dislocation and fracture-dislocation of the wrist: Retrospective evaluation of 65 cases.

Citation: Orthopaedics & traumatology, surgery & research : OTSR, May 2016, vol. 102, no. 3, p. 351-355

Author(s): Israel, D, Delclaux, S, André, A, Apredoeai, C, Rongièrès, M, Bonneville, P, Mansat, P

Abstract: Peri-lunate wrist dislocations and fracture-dislocations are related to high-energy trauma. Prognosis is often compromised because of the complexity of the lesions. The purpose of this study was to assess outcomes of acute peri-lunate injuries and correlate them with the type of lesion and management. (Abstract Edited)

Title: Fracture Repair in the Distal Radius in Postmenopausal Women: A Follow-Up 2 Years Postfracture Using HRpQCT.

Citation: Journal of bone and mineral research : the official journal of the American Society for Bone and Mineral Research, May 2016, vol. 31, no. 5, p. 1114-1122

Author(s): de Jong, Joost Ja, Heyer, Frans L, Arts, Jacobus Jc, Poeze, Martijn, Keszei, András P, Willems, Paul C, van Rietbergen, Bert, Geusens, Piet P, van den Bergh, Joop Pw

Abstract: Fracture healing is characterized by an intense increase in modeling and remodeling of bone, which allows removal of the cast after a stable distal radius fracture within 3 to 5 weeks. However, at that time, bone strength has not recovered yet. We studied the changes in bone mineral density (BMD), microarchitecture, and bone stiffness after a distal radius fracture during a 2-year follow-up in comparison to the contralateral side and the association between the 2-year stiffness and baseline BMD, microarchitecture, and early changes in these parameters. (Abstract Edited)

Title: Bilateral fracture of the base of the middle phalanx in a climber: Literature review and a case report

Citation: Orthopaedics and Traumatology: Surgery and Research, May 2016, vol./is. 102/3(409-411)

Author(s): Desaldeleer A.-S., Le Nen D.

Abstract: During climbing, tears of the annular pulley are the most common injuries, while fractures of the dorsal base of the middle phalanx are rare and atypical. Only a few cases have been reported in international literature. The authors present a case of a Salter-Harris type III fracture of the base of the middle phalanx of the middle finger in a young climber and a review of the literature. (Abstract Edited)

Title: Minimally invasive percutaneous plate osteosynthesis for distal radius fractures with long-segment metadiaphyseal comminution

Citation: Orthopaedics and Traumatology: Surgery and Research, May 2016, vol./is. 102/3(333-338)

Author(s): Wei X.-M., Sun Z.-Z., Rui Y.-J., Song X.-J., Jiang W.-M.

Abstract: Introduction: Distal radius fractures with both metaphyseal and diaphyseal comminution are commonly encountered injuries due to high-energy trauma. However, effectively treating patients with this disease remains challenging for the surgeon. Hypothesis: The goal of this study was to evaluate the outcomes of minimally invasive percutaneous plate osteosynthesis (MIPPO) technique for distal radius fractures with long-segment metadiaphyseal comminution. (Abstract Edited)

Title: Does Brachial Plexus Blockade Result in Improved Pain Scores After Distal Radius Fracture Fixation? A Randomized Trial

Citation: Clinical Orthopaedics and Related Research, May 2016, vol./is. 474/5(1247-1254)

Author(s): Galos D.K., Taormina D.P., Crespo A., Ding D.Y., Sapienza A., Jain S., Tejwani N.C.

Abstract: Background: Distal radius fractures are very common injuries and surgical treatment for them can be painful. Achieving early pain control may help improve patient satisfaction and improve functional outcomes. Little is known about which anesthesia technique (general anesthesia versus brachial plexus blockade) is most beneficial for pain control after distal radius fixation which could significantly affect patients' postoperative course and experience. Questions/Purposes: We asked: (1) Did patients receiving general anesthesia or brachial plexus blockade have worse pain scores at 2, 12, and 24 hours after surgery? (2) Was there a difference in operative suite time between patients who had general anesthesia or brachial plexus blockade, and was there a difference in recovery room time? (3) Did patients receiving general anesthesia or brachial plexus blockade have higher narcotic use after surgery? (4) Do patients receiving general anesthesia or brachial plexus blockade have higher functional assessment scores after distal radius fracture repair at 6 weeks and 12 weeks after surgery? (Abstract Edited)

Title: Nephrolithiasis and risk of incident bone fracture

Citation: Journal of Urology, May 2016, vol./is. 195/5(1482-1486)

Author(s): Taylor E.N., Feskanich D., Paik J.M., Curhan G.C.

Abstract: Purpose Higher urine calcium is a common feature of calcium nephrolithiasis and may be associated with lower bone mineral density in individuals with kidney stones. However previous population based studies of kidney stones and the risk of bone fracture demonstrate conflicting results. We examined independent associations between a history of kidney stones and incident fracture. (Abstract Edited)

Title: Conversion of external fixation to open reduction and internal fixation for complex distal radius fractures

Citation: Orthopaedics and Traumatology: Surgery and Research, May 2016, vol./is. 102/3(339-343)

Author(s): Natoli R.M., Baer M.R., Bednar M.S.

Abstract: Introduction: Distal radius fractures are common injuries treated in a multitude of ways. One treatment paradigm not extensively studied is initial treatment by external fixation (EF) followed by conversion to open reduction internal fixation (ORIF). Such a paradigm may be beneficial in damage control situations, when there is extensive soft tissue injury, or when appropriate personnel/hospital resources are not available for immediate internal fixation. Hypothesis: There is no increased risk of infection when converting EF to ORIF in the treatment of complex distal radius fractures when conversion occurs early or if EF pin sites are overlapped by the definitive fixation. (Abstract Edited)

Title: CORR Insights(®): Does Brachial Plexus Blockade Result in Improved Pain Scores After Distal Radius Fracture Fixation? A Randomized Trial.

Citation: Clinical orthopaedics and related research, May 2016, vol. 474, no. 5, p. 1255-1256,

Author(s): Kennedy, Stephen Alan

Title: Finger Fractures as an Early Manifestation of Primary Hyperparathyroidism Among Young Patients: A Case Report of a 30-Year-Old Male With Recurrent Osteoporotic Fractures.

Citation: Medicine, May 2016, vol. 95, no. 20, p. e3683., 1536-5964 (May 2016)

Author(s): Ozaki, Akihiko, Tanimoto, Tetsuya, Yamagishi, Eiki, Sato, Shunsuke,

Abstract: Osteoporosis and osteoporotic fractures represent a substantial health burden, and predominantly affect the elderly. Younger generations may also develop these conditions because of various predisposing conditions, including primary hyperparathyroidism. However, little information is available regarding early skeletal manifestations of primary hyperparathyroidism. A 30-year-old Japanese male presented with pain in his left wrist, and was diagnosed with a distal radius fracture. During surgery, we noticed decreased bone strength of the fracture site. Further investigation found osteoporosis and primary hyperparathyroidism owing to a solitary parathyroid adenoma, which was resected without significant complications. History revealed that the patient suffered a metacarpal bone fracture of his right fifth bone 6 months earlier. Although serial x-rays at that time had shown rapidly developed cortical bone erosion around the fractured finger, the possibility of primary hyperparathyroidism was overlooked because of poor awareness of the condition, leading to a 6-month delay in the diagnosis of primary hyperparathyroidism. Clinicians should be aware that finger fractures may be an early skeletal manifestation of primary hyperparathyroidism that can help achieve a prompt diagnosis of the condition, especially when they occur in young adults in the absence of major trauma.

Title: Approaches to Distal Upper-Extremity Trauma: A Comparison of Plastic, Orthopedic, and Hand Surgeons in Academic Practice.

Citation: Annals of plastic surgery, May 2016, vol. 76 Suppl 3, p. S162.,

Author(s): Dasari, Chanukya R, Sandhu, Manjot, Wisner, David H, Wong, Michael S

Abstract: Hand trauma call duties at university medical centers are traditionally split among plastic surgeons and orthopedic surgeons, frequently without additional fellowship training in hand and upper-extremity surgery. Differences in operative approach between these groups have never been specifically described. The University Health Consortium-Association of American Medical Colleges Faculty Practice Solutions Center database contains comprehensive, factual, billing and coding data from 90 academic medical centers in the United States and can be used to characterize the practice patterns of various academic surgical specialties. To characterize and compare the clinical experience of academic plastic, orthopedic, and hand surgeons in addressing traumatic distal upper extremity injuries (using the Faculty Practice Solutions Center data set). Annual data for CPT defined procedures related to traumatic injuries of the nail bed, finger, hand, wrist, and forearm performed by plastic, orthopedic, and hand surgeons during calendar years 2010 to 2013 were included in the study. (Abstract Edited

Title: Brodie's abscess following percutaneous fixation of distal radius fracture in a child

Citation: Strategies in Trauma and Limb Reconstruction, April 2016, vol./is. 11/1(69-73)

Author(s): Rajakulendran K., Picardo N.E., El-Daly I., Hussein R.

Abstract: We report the case of a Brodie's abscess presenting five and a half years following closed reduction and percutaneous pinning of a distal radius fracture. The index surgery was complicated by a pin site infection that was treated successfully with antibiotics. The patient represented with forearm pain years later, and radiological investigations revealed a Brodie's abscess in the distal radius at the site of the previous Kirschner wires. The Brodie's abscess was managed through surgical curettage and antibiotics. Staphylococcus aureus and diphtheroid organisms were cultured from the intraoperative specimens. A Brodie's abscess is a form of localised subacute osteomyelitis, which usually occurs in the metaphysis of long bones and can mimic malignancy. Previous trauma or surgery has been implicated as predisposing factors. We have only identified one previously reported case of Brodie's abscess following percutaneous pinning. Ours is the first reported case in an adolescent. The aim of this paper is to raise awareness of this rare complication and review the current literature.

Title: Trans-scaploid perilunate fracture dislocation; a technical note

Citation: Bulletin of Emergency and Trauma, April 2016, vol./is. 4/2(110-112)

Author(s): Aslani H., Bazavar M.R., Sadighi A., Tabrizi A., Elmi A.

Abstract: Carpal fracture-dislocation is regarded as an unusual orthopedic injury and, thus, orthopedic surgeons are less experienced in dealing with and treating these fractures and dislocations. We report a 20-year-old worker man suffering from an unusual carpal fracture-

dislocation. There was trans-scaphoid fracture and lunate dislocation with other carpal proximal bones toward volar of the wrist. Two volar and dorsal approaches were used to treat and stabilize the fracture. It was completely stabilized after open reduction and fixation using several pins. After two days, neural symptoms were completely recovered and the patient was discharged. Postoperative radiographies revealed complete restitution of lesser and greater arcs and normalization of Gilula's line. Scapholunate and lunatocapitate angles reached to less than 60degree and 10degree, respectively. The combined approach had favorable results for treatment of this unusual type of carpus fracture dislocation. However longer follow up is need to evaluate the arthritis and degenerative changes in wrist.

Title: Volar Locking Plate or External Fixation with Optional Addition of K-Wires for Dorsally Displaced Distal Radius Fractures: A Randomized Controlled Study

Citation: Journal of Orthopaedic Trauma, April 2016, vol./is. 30/4(217-224)

Author(s): Mellstrand Navarro C., Ahrengart L., Tornqvist H., Ponzer S.

Abstract: Objectives: To compare the outcomes after open reduction and fixation with a volar locking plate or external fixation with optional addition of K-wires in patients aged 50-74 years. Design: Randomized controlled trial according to the Consolidated Standards of Reporting Trials criteria. Setting: Single-center second-level trauma center in the capital of Sweden. Patients: One hundred forty patients presenting with a dorsally displaced distal radius fracture were randomized to fixation with a volar locking plate (n 70) or external fixation with optional addition of K-wires (n 70). Main Outcome Measurement: The primary outcome was the Disability of the Arm, Shoulder, and Hand (DASH) at 12 months. EuroQol-5D, radiography, and recordings of complications were performed at 2 and 6 weeks and at 3 and 12 months. (Abstract Edited)

Title: A Unified Approach to Outcomes Assessment for Distal Radius Fractures

Citation: Journal of Hand Surgery, April 2016, vol./is. 41/4(565-573),

Author(s): Waljee J.F., Ladd A., MacDermid J.C., Rozental T.D., Wolfe S.W., Benson L.S., Calfee R.P., Dennison D.G., Hanel D.P., Herzberg G., Hotchkiss R., Jupiter J.B., Kaufmann R.A., Lee S.K., Ozer K., Ring D.C., Ross M., Stern P.J.

Abstract: Distal radius fractures are one of the most common upper extremity injuries. Currently, outcome assessment after treatment of these injuries varies widely with respect to the measures that are used, timing of assessment, and the end points that are considered. A more consistent approach to outcomes assessment would provide a standard by which to assess treatment options and best practices. In this summary, we review the consensus regarding outcomes assessment after distal radius fractures and propose a systematic approach that integrates performance, patient-reported outcomes, pain, complications, and radiographs.

Title: Relationship of Height to Site-Specific Fracture Risk in Postmenopausal Women

Citation: Journal of Bone and Mineral Research, April 2016, vol./is. 31/4(725-731)

Author(s): Armstrong M.E.G., Kirichek O., Cairns B.J., Green J., Reeves G.K.

Abstract: Height has been associated with increased risk of fracture of the neck of femur. However, information on the association of height with fractures at other sites is limited and conflicting. A total of 796,081 postmenopausal women, who reported on health and lifestyle factors including a history of previous fractures and osteoporosis, were followed for 8 years for incident fracture at various sites by record linkage to National Health Service hospital admission data. (Abstract Edited)

Title: Biomechanical testing of distal radius fracture treatments: Boundary conditions significantly affect the outcome of in vitro experiments

Citation: Journal of Applied Biomechanics, April 2016, vol./is. 32/2(210-214)

Author(s): Synek A., Chevalier Y., Schroder C., Pahr D.H., Baumbach S.F.

Abstract: The variety of experimental setups used during in vitro testing of distal radius fracture treatments impairs interstudy comparison and might lead to contradictory results. Setups particularly differ with respect to their boundary conditions, but the influence on the experimental outcome is unknown. The aim of this biomechanical study was to investigate the effects of 2 common boundary conditions on the biomechanical properties of an extra-articular distal radius fracture treated using volar plate osteosynthesis. (Abstract Edited)

Title: A biomechanical approach to distal radius fractures for the emergency radiologist

Citation: Emergency Radiology, April 2016, vol./is. 23/2(175-185)

Author(s): Bunch P.M., Sheehan S.E., Dyer G.S., Sodickson A., Khurana B.

Language: English

Abstract: Distal radius fractures are the most common upper extremity fracture and account for approximately one sixth of all fractures treated in US emergency departments. These fractures are associated with significant morbidity and have a major economic impact. Radiographic evaluation of distal radius fractures is frequently performed in the emergency department setting, has a profound impact on initial management, and is essential to assessing the quality and relative success of the initial reduction. While the most appropriate definitive management of distal radius fractures remains controversial, overarching treatment principles reflect distal radius injury mechanisms and biomechanics. An intuitive understanding of the biomechanics of the distal radius and of common mechanisms of injury informs and improves the emergency radiologist's ability to identify key imaging findings with important management implications and to communicate the critical information that emergency physicians and orthopedic surgeons need to best manage distal radius fractures.

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May: Vol. 41 Iss 4 2016

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