

Hand Rehabilitation

Current Awareness Newsletter

December 2016



Respecting everyone
Embracing change
Recognising success
Working together
Our hospitals.



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Training Calendar 2016/17

All sessions are 1 hour

December (12.00)

Fri 16th **Literature Searching**

Mon 20th **Critical Appraisal**

January (13.00)

Tues 10th **Literature Searching**

Wed 18th **Critical Appraisal**

Thur 26th **Statistics**

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Updates for November/ December

NICE National Institute for
Health and Care Excellence

No current evidence

 **Cochrane**
Library

No current evidence

UpToDate[®]

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

No current evidence

Other - Behind the Headlines, Guidance

No current evidence

Journal Tables of Contents

Click on the **journal title (hyperlinked)** for the most recent tables of contents.

If you would like any of the papers in full text then please email the library:
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[Journal of Hand Surgery \(British and European\)](#)

November 2016, Volume 41, Issue 9

<http://jhs.sagepub.com/content/41/9.toc>

[Journal of Hand Surgery \(America\)](#)

December 2016, Volume 41, Issue 12

<http://www.jhandsurg.org/current>

[Journal of Hand Therapy](#)

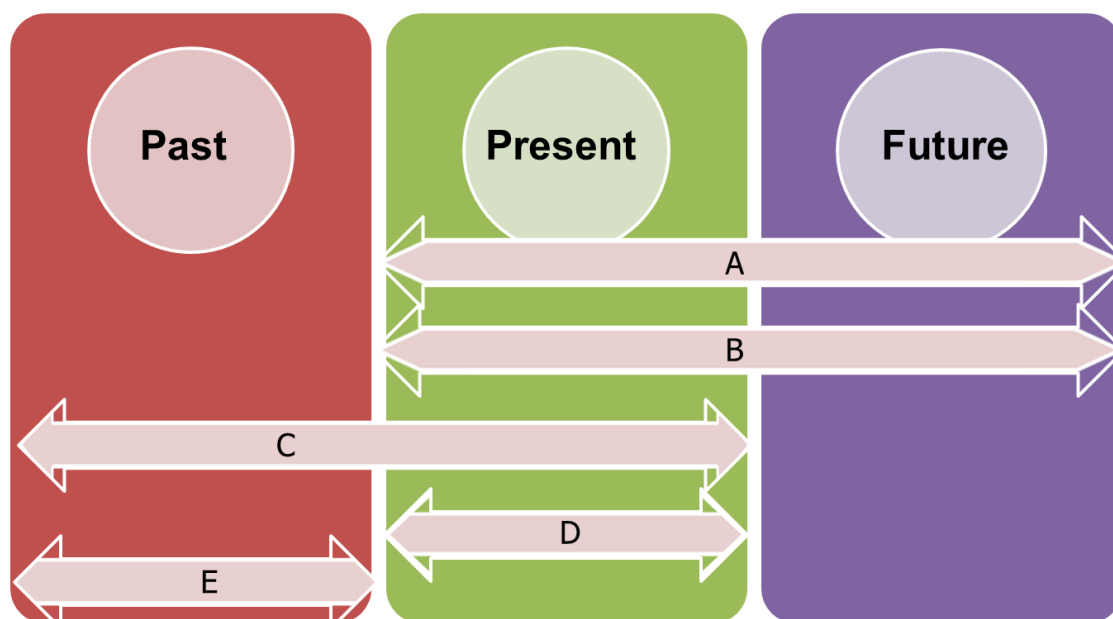
October – December 2016, Volume 29, Issue 4

<http://www.jhandtherapy.org/current>

Exercise

Study Design Timeframes

Match the study design with the timeframe it covers.



1. Randomised Controlled Trial
2. Cross-Sectional Study
3. Case-control Study
4. Cohort Study
5. Case Report

Find out more about study designs in one of our **Understanding Articles** training sessions.
For more details, email library@uhbristol.nhs.uk.

Answers: 1A/B; 2D; 3C; 4A/B; 5E

Current Awareness Database Articles

Complex Regional Pain Syndrome (CRPS)

Four-corner fusion of the wrist: clinical and radiographic outcome of 31 patients.

Author(s): Mavrogenis, Andreas F; Flevas, Dimitrios A; Raptis, Konstantinos; Megaloikonomos, Panayiotis D; Igoumenou, Vasilios G; Antoniadou, Thekla; Dimopoulos, Leonidas; Antonopoulos, Dimitrios; Spyridonos, Sarantis G

Source: European journal of orthopaedic surgery & traumatology : orthopedie traumatologie; Dec 2016; vol. 26 (no. 8); p. 859-866

Publication Date: Dec 2016

Abstract:Four-corner fusion is a rational surgical option for the management of degenerative conditions of the wrist. Most related studies have compared four-corner fusion with scaphoid excision or proximal row carpectomy, with a variety of reported results. To enhance the literature, we performed this study to evaluate a series of patients with degenerative conditions of the wrist treated with four-corner fusion using 3 surgical techniques and to discuss the clinical and radiographic outcome of the patients. We retrospectively studied 31 patients (24 men, 7 women; mean age, 43 years; 9 heavy manual laborers) who underwent four-corner fusion of their wrists for degenerative conditions from 2005 to 2015. Internal fixation was done using multiple Kirschner wires (14 patients), headless compressive screws (8 patients), or a circular plate (9 patients). Mean follow-up was 4 years (1-11 years). We evaluated the clinical outcome with the Patient-Rated Wrist Evaluation (PRWE) score and fusion with radiographs. All patients experienced improvement of their pain, function, range of motion and grip strength ($p < 0.05$). Twenty-three patients (74 %) reported no pain, and eight patients reported mild, occasional pain. Twenty-one patients (68 %) were able to do usual and specific activities. Mean wrist motion improved to 70 % and mean grip strength improved to 85 % of opposite wrist. Two heavy manual labor patients requested a job modification because of wrist impairment. Radiographs of the wrist showed fusion of all fused joints in 28 (90.3 %) patients and partial fusion in three patients (9.7 %). No patient with partial fusion required a reoperation for symptomatic nonunion until the period of this study. Three patients experienced complications (10 %). Two patients treated with a circular plate experienced complex regional pain syndrome and painful implant impingement; another patient treated with Kirschner wires and headless compression screws experienced radiolunate arthritis from impingement of the lunate screw to the radius. Four-corner fusion is a reliable limited wrist fusion technique that provides pain relief, grip strength and satisfactory range of motion in patients with degenerative conditions of the wrist. Partial union is more common with Kirschner wire fixation and complications are more common with circular plate fixation.

Database: Medline

The effectiveness of transcutaneous electrical nerve stimulation in the management of patients with complex regional pain syndrome: A randomized, double-blinded, placebo-controlled prospective study.

Author(s): Bilgili, Adem; Çakır, Tuncay; Doğan, Şebnem Koldaş; Erçalık, Tülay; Filiz, Meral Bilgilişoy; Toraman, Füsün

Source: Journal of back and musculoskeletal rehabilitation; Nov 2016; vol. 29 (no. 4); p. 661-671

Publication Date: Nov 2016

Abstract:To investigate the effect of transcutaneous electrical nerve stimulation (TENS) on clinical recovery in the management of patients with complex regional pain syndrome Type I (CRPS Type I). The study included 30 patients with stage 1 and 2 CRPS Type I in the upper extremities. The patients were randomly assigned into 2 groups, group 1 (n= 15) received conventional TENS therapy for 20

minutes, and group 2 (n= 15) received sham TENS therapy. The standard physical therapy program, which included contrast bath for 20 minutes; whirlpool bath for 15 minutes; assisted active and passive range of motion, and static stretching exercises up to the pain threshold, was also conducted in both groups. Therapy was scheduled for 15 sessions. A visual analogue scale (VAS) was used to assess spontaneous pain. The Leeds Assessment of Neuropathic Signs and Symptoms (LANSS) scale and the Douleur Neuropathique en 4 Questions (DN-4) were used to assess neuropathic pain. In addition, range of motion (ROM) was measured using a goniometer and volumetric measurements were taken to assess edema. Functional capacity was assessed using a hand dynamometer and the Duruöz Hand Index (DHI). All measurements were performed at baseline and after therapy. Significant improvements were achieved in spontaneous and neuropathic pain scores, edema, ROM, and functional capacity in both groups (p 0.05). The addition of TENS to the physical therapy program was seen to make a significant contribution to clinical recovery in CRPS Type 1.

Database: Medline

7. Abnormal brain responses to action observation in complex regional pain syndrome.

Author(s): Hotta, Jaakko; Saari, Jukka; Koskinen, Miika; Hlushchuk, Yevhen; Forss, Nina; Hari, Riitta

Source: The journal of pain : official journal of the American Pain Society; Nov 2016

Publication Date: Nov 2016

Abstract:Patients with complex regional pain syndrome (CRPS) display various abnormalities in central motor function, and their pain is intensified when they perform or just observe motor actions. Here, we examined the abnormalities of brain responses to action observation in CRPS. We analyzed 3-T functional magnetic resonance images from 13 upper-limb CRPS patients (all females, ages 31-58 years) and 13 healthy, age- and sex-matched control subjects. The functional magnetic resonance imaging data were acquired while the subjects viewed brief videos of hand actions shown in the first-person perspective. A pattern-classification analysis was applied to characterize brain areas where the activation pattern differed between CRPS patients and healthy subjects. Brain areas with statistically significant group differences ($q < 0.05$, false discovery rate corrected) included the hand representation area in the sensorimotor cortex, inferior frontal gyrus, secondary somatosensory cortex, inferior parietal lobule, orbitofrontal cortex, and thalamus. Our findings indicate that CRPS impairs action observation by affecting brain areas related to pain processing and motor control. This article shows that in CRPS, the observation of others' motor actions induces abnormal neural activity in brain areas essential for sensorimotor functions and pain. These results build the cerebral basis for action observation impairments in CRPS. Copyright © 2016. Published by Elsevier Inc.

Database: Medline

8. Complications of Wrist Arthroscopy: A Multicenter Study Based on 10,107 Arthroscopies.

Author(s): Leclercq, Caroline; Mathoulin, Christophe; Members of EWAS

Source: Journal of wrist surgery; Nov 2016; vol. 5 (no. 4); p. 320-326

Publication Date: Nov 2016

Abstract:Background Wrist arthroscopy is now a routine procedure, regarded as safe. Complications are reported in the literature as being rare and mostly minor. Purpose The two goals of this study were to evaluate the incidence and nature of complications based on a very large multicenter retrospective study, and to investigate about a potential learning curve. Methods The authors sent a detailed questionnaire to all members of the European Wrist Arthroscopy Society (EWAS), inquiring about the number and types of complications encountered during their practice of

wrist arthroscopy, and about their experience with the technique. **Results** A total of 36 series comprising 10,107 wrist arthroscopies were included in the study. There were 605 complications (5.98% of the cases), of which 5.07% were listed as serious and 0.91% as minor. The most frequent ones were failure to achieve the procedure (1.16%), and nerve lesions (1.17%). Cartilage lesions and complex regional pain syndrome each occurred in 0.50% cases. Other complications (wrist stiffness, loose bodies, hematomas, tendon lacerations) were less frequent. Breaking down of the data according to each surgeon's experience of the technique showed a significant relationship with the rate of complications, the threshold for a lower complication rate being approximately 25 arthroscopies a year and/or greater than 5 years of experience. **Conclusion** Although the global incidence of complications was in keeping with the literature, the incidence of serious complications was much higher than previously reported. There is a significant learning curve with the technique of wrist arthroscopy, both in terms of volume and experience.

Database: Medline

Flexor and Tendon Injuries:

Diagnosis, Treatment, and Return to Play for Four Common Sports Injuries of the Hand and Wrist.

Author(s): Goldfarb, Charles A; Puri, Sameer K; Carlson, Michelle Gerwin

Source: The Journal of the American Academy of Orthopaedic Surgeons; Dec 2016; vol. 24 (no. 12); p. 853-862

Publication Date: Dec 2016

Abstract: Hand and wrist injuries in the high-level athlete are challenging because they may be underestimated by the patient, family, and team, and return to play may be longer than desired. The needs of the player and the team must be balanced with the long-term functional ramifications of the injury. Four common soft-tissue sports injuries are flexor digitorum profundus avulsion, flexor pulley rupture, extensor carpi ulnaris dislocation, and thumb metacarpophalangeal joint ulnar collateral ligament injury. For each of these injuries, the assessment, treatment, and considerations for return to play should be individualized on the basis of the patient, the sport, and the timing of the injury.

Database: Medline

7. Improving Outcomes in Tendon Repair: A Critical Look at the Evidence for Flexor Tendon Repair and Rehabilitation.

Author(s): Khor, Wee S; Langer, Martin F; Wong, Richard; Zhou, Rui; Peck, Fiona; Wong, Jason K F

Source: Plastic and reconstructive surgery; Dec 2016; vol. 138 (no. 6); p. 1045e

Publication Date: Dec 2016

Abstract: After reading this article, the participant should be able to: 1. Appreciate the variation and evolution of flexor tendon management 2. Know how to assess the patient who presents with a flexor tendon laceration. 3. Understand the biology of repairing flexor tendon lacerations. 4. Appreciate the technical challenges in flexor tendon repair relating to different zones. 5. Understand the rationale of postoperative hand therapy. 6. Have an overview of the types of secondary tendon surgery. Flexor tendon injury constitutes a considerable trauma workload for hand surgeons, and a vast amount of research is dedicated toward improving outcomes in tendon repair. This Continuing Medical Education article aims to provide an up-to-date evidence-based outline of flexor tendon surgery in the hand. The authors reviewed the literature on flexor tendon repairs to include a balanced overview of the experimental and clinical research. For each section, the best levels of evidence were assessed in the context of past research to provide a comprehensive opinion on best

management. The review highlights current trends in flexor tendon surgery, clinical assessment, anesthetic technique, surgical approach, repair technique, and rehabilitation. Carefully selected illustrations, figures, tables, and video have been used to supplement the findings of the review. Early active mobilization remains the only long-term proven strategy to improve outcomes. Incorporating intraoperative mobilization using "wide-awake" surgery could emerge to further improve tendon outcomes. Good surgical approach, meticulous surgery, up-to-date physiotherapy regimens, and patient education remain the cornerstone of obtaining best outcomes.

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

Author(s): Rigo, I Z; Røkkum, M

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

Publication Date: Oct 2016

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.

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Database: Medline

Trapeziectomy (Osteoarthritis thumb)

Minimum 10-year clinical and radiological follow-up of trapeziectomy with interposition or suspensionplasty for basal thumb arthritis.

Author(s): Pomares, G; Delgrande, D; Dap, F; Dautel, G

Source: Orthopaedics & traumatology, surgery & research : OTSR; Dec 2016; vol. 102 (no. 8); p. 995-1000

Publication Date: Dec 2016

Abstract: The aim of this article is to analyze clinical and radiological outcomes of trapeziectomy performed for basal thumb arthritis after a minimum follow-up of 10 years to gain further insight from shorter and medium-term studies reporting satisfactory evolution. We reviewed 67 trapeziectomies, operated on by the same senior surgeon after a minimum follow-up of 10 years. The sample included 16 cases of suspensionplasty and 51 interpositions. Clinical outcome evaluated strength, pain, joint amplitude, Kapandji opposition score, Disabilities of the Arm, Shoulder and Hand score, complications and revision surgery. Radiological evaluation criteria included

osteoarthritis and collapse of the trapezial void. After a 10-year follow-up, clinical results remained stable despite radiological degradations. Long-term clinical outcomes of trapeziectomy for basal thumb arthritis are very positive, with interpositioning as an isolated procedure appearing, clinically, to be the preferred treatment despite greater radiological degradation when compared to suspensionplasty. In addition to offering insight into minimum 10-year follow-up, this study also pinpoints this paradoxical dissociation of clinical-radiological outcomes. Therapeutic III. Copyright © 2016 Elsevier Masson SAS. All rights reserved.

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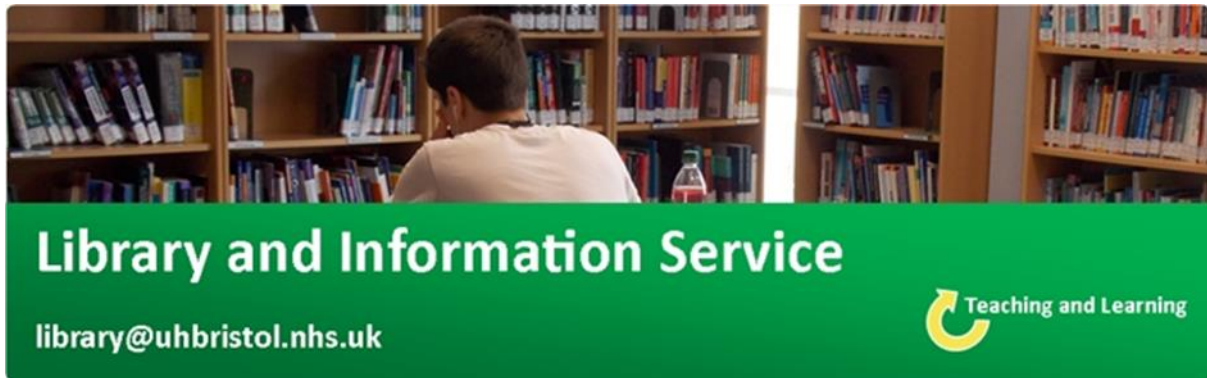
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