BOA Instructional Course
Manchester 2020

University of Southampton
School of Medicine

Hand and Wrist

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British Orthopaedic Association

www.handsurgery.co.uk

NHS
University Hospital Southampton
NHS Foundation Trust

- Dupuytren’s Disease
- Flexor Tendon Repair
- Scapholunate injuries
- Wrist Arthritis
- Distal Radius Fractures
- Metacarpal Fractures

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- Dupuytren's Disease
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- Metacarpal Fractures

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Heterogeneity of disease

Stumps

Twigs

Logs

JHS(E)

Review Article

Dupuytren's disease: my personal view

The Journal of Hand Surgery
(European Volume)
XXEDX) 1–8

DOI: 10.1177/1753193417715773
journals.sagepub.com/home/jhs
SAGE

D. Warwick

Abstract

Dupuytren's disease is a heterogenous condition for which a palette of treatment options is required. Randomized control trial evidence is sparse; design challenges, such as validated outcome measures, blinding, equipoise, funding and assessment of recurrence, may limit further data accrual. Recurrence has different significance with different treatments and so rates are not directly comparable. The risk of any treatment is a function of both the chance of a complication and the clinical sequelae of that complication. The patient must be intimately involved in choosing treatment and is often trading rapid recovery for a higher chance of recurrence. Health economies are strained and as custodians of healthcare, surgeons should consider whether many patients even need treatment. To minimize the chance of complex, hazardous and expensive revision surgery, a low threshold for primary skin grafting should be applied, especially for those who are young, have dense disease or vulnerable genes.

2018

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Xiapex

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Heterogeneity of disease

- Some cords are more suitable for surgery
  - diathesis
  - dense cords
  - skin involvement
- Some are more suitable for PNF
  - thin MCP cord

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Developments in surgical technique

Invasive surgical procedures

- Open-heart surgery
- Hysterectomy
- Angioplasty
- Cholecystectomy
- Appendicectomy

All common until 1990s

Minimally Invasive Procedures

- EVAR
- Laparoscopy/Keyhole
- Lithotripsy

Mainly used after 2000

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We should be thinking of offering more needles

Advise everybody that

if you choose a needle instead of surgery, you are trading

- Much quicker recovery
  - 3 days vs 6 weeks
- Much cheaper
- Much fewer serious complications
  - 2% vs 6%

Recurrence

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- ☞Dupuytren’s Disease
- ☞Flexor Tendon Repair
- ☞Scapholunate injuries
- ☞Wrist Arthritis
- ☞Distal Radius Fractures
- ☞Metacarpal Fractures

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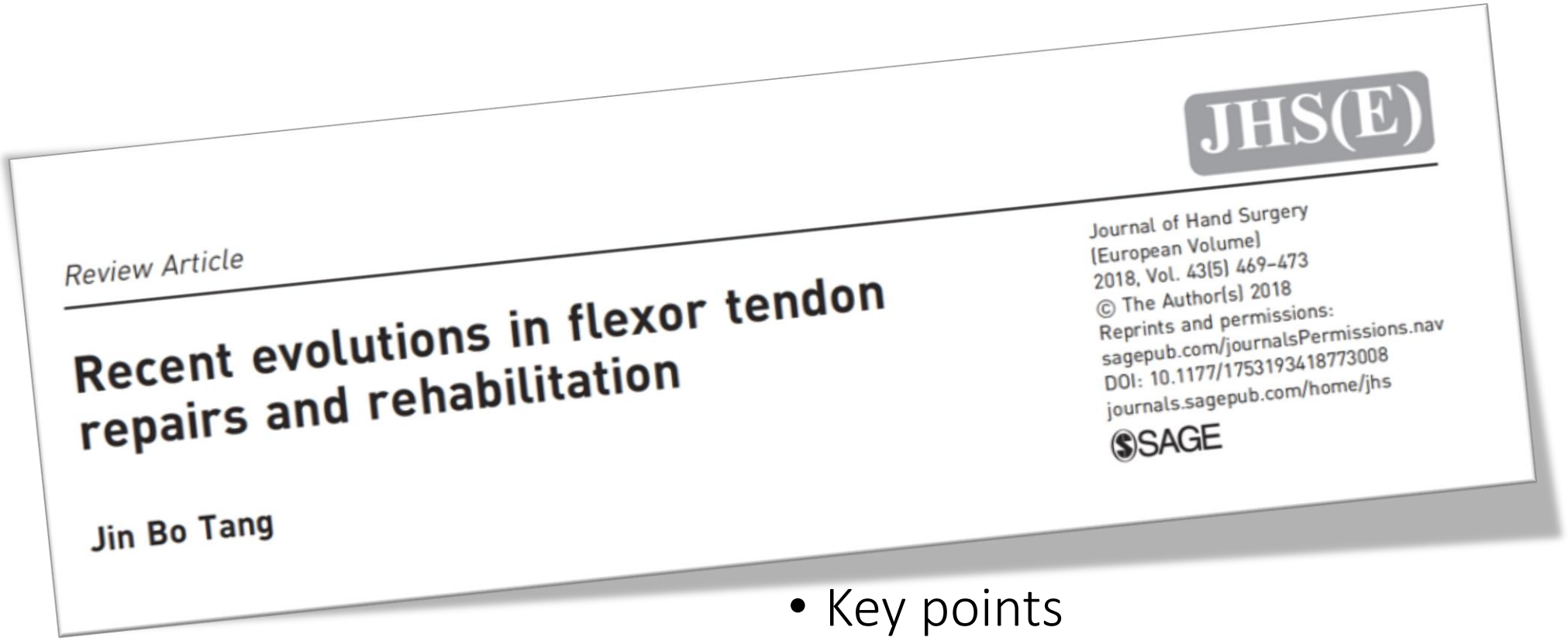

Review Article

Recent evolutions in flexor tendon repairs and rehabilitation

Jin Bo Tang

JHS(E)

Journal of Hand Surgery
(European Volume)
2018, Vol. 43(5) 469–473

DOI: 10.1177/1753193418773008
journals.sagepub.com/home/jhs
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- Key points
  - 4 or 6 strand suture
  - peripheral sutures optional
  - Allow repair to be bulky not gappy
  - Thorough pulley release
  - Less wrist restriction in splint
  - Early active motion

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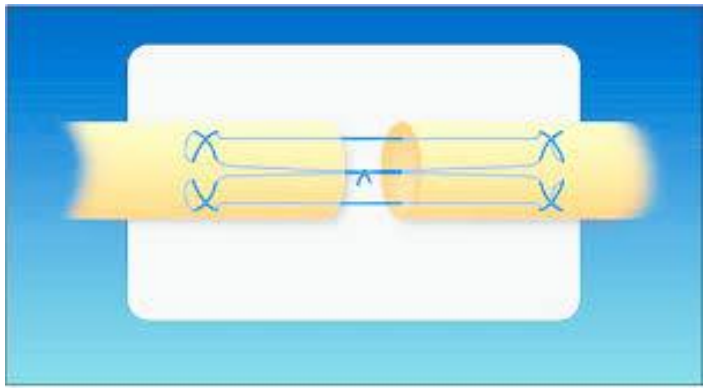
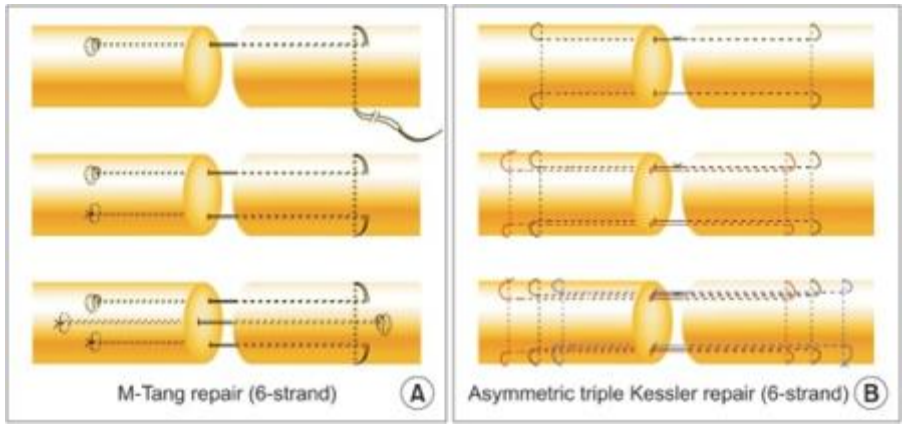
- Multi strand
  - 4 or 6
- 3-0 or 4-0
  - Non Dissolvable
  - Not fibre wire





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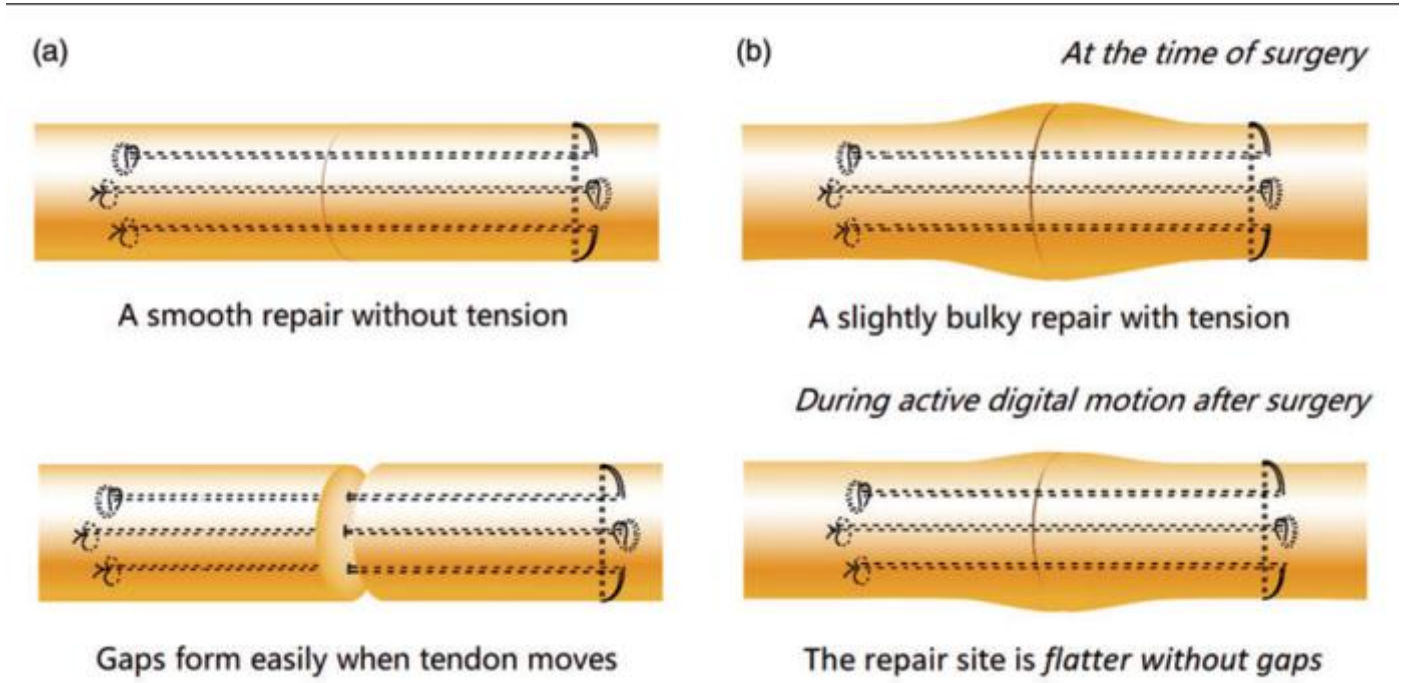
Bunch up the repair



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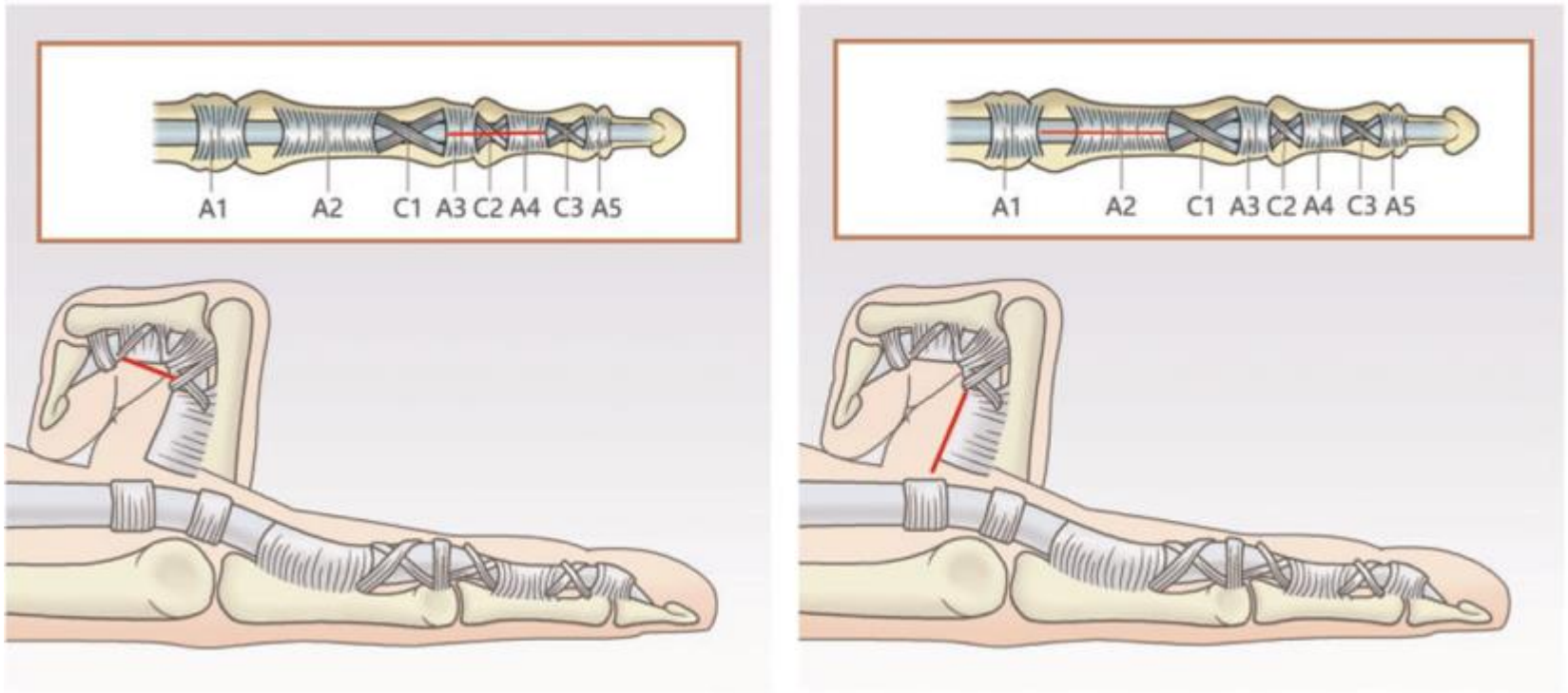
Functionally relevant bowstringing does not occur if A4 or A2 released



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Better to bowstring than to trigger

The Manchester short splint: A change to splinting practice in the rehabilitation of zone II flexor tendon repairs
Peck, Rowe, Duff, Ng, Hand Therapy 2014 19 47-53

- Allows wrist flexion and extension
- Tenodesis
- Early active movement

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- ☞Dupuytren's Disease
- ☞Flexor Tendon Repair
- ☞Scapholunate injuries
- ☞Wrist Arthritis
- ☞Distal Radius Fractures
- ☞Metacarpal Fractures

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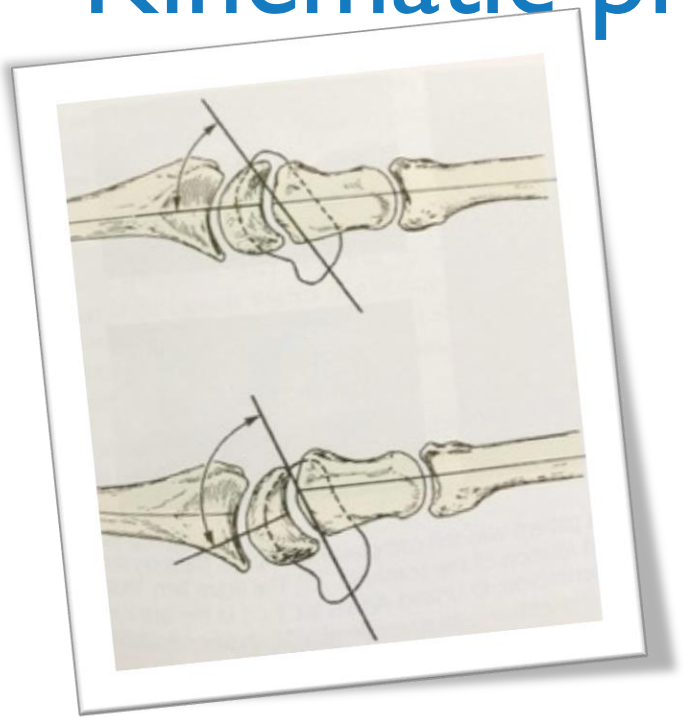
Kinematic problem with SL rupture



- loss of distal support of scaphoid
  - scaphoid falls into flexion
- loss of scapho-lunate apposition
  - bones separate
  - lunate tilts backwards (DISI)

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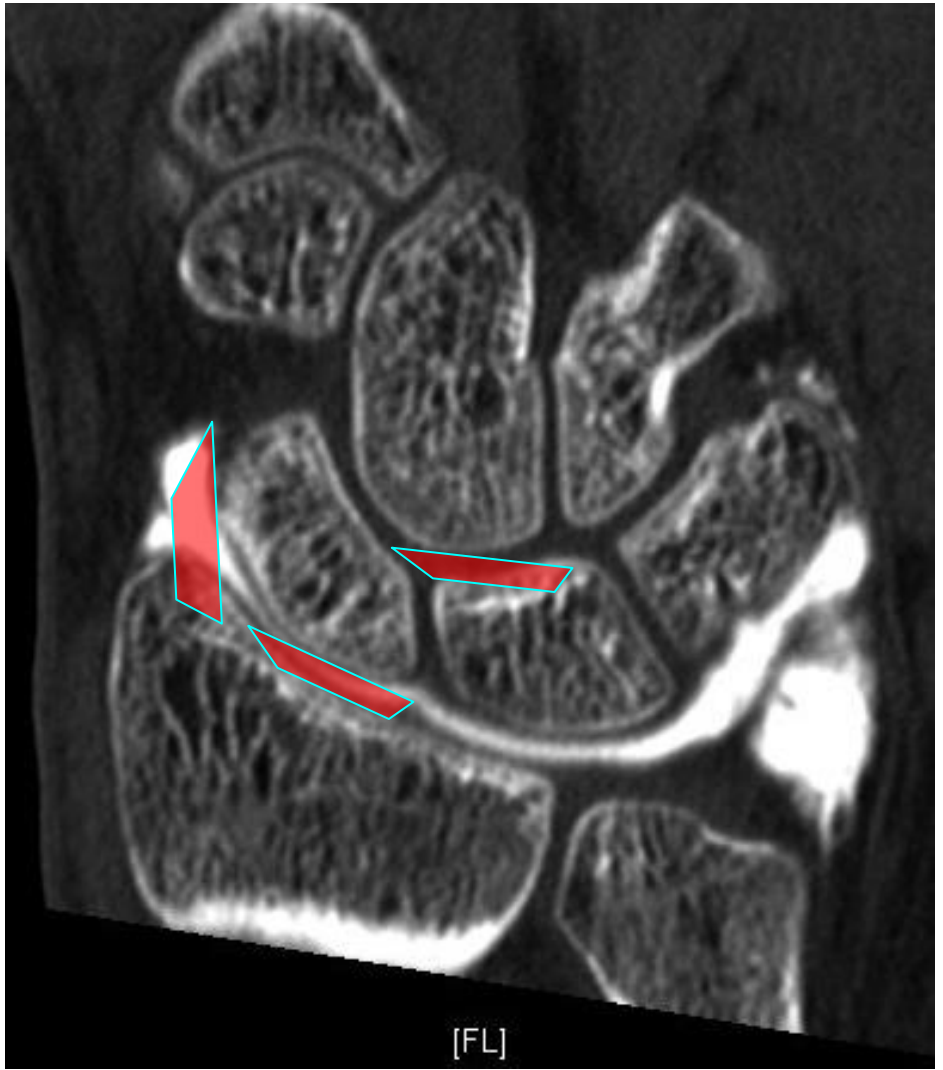
Staging and Natural History
SLAC Wrist

Stage I
- Radial Styloid-scaphoid

Stage II
- Radioscaphoid joint

Stage III
- Capitate-lunate



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Treatment

Hand & Wrist

EOR | VOLUME 2 | SEPTEMBER 2017
DOI: 10.1302/2058-5241.2.170016
www.efortopenreviews.org

EFORT open reviews

Treatment of scapholunate ligament injury: current concepts

Jonny K. Andersson

Acute

Mend within 2 to 3 weeks

Chronic

Consider reconstruction

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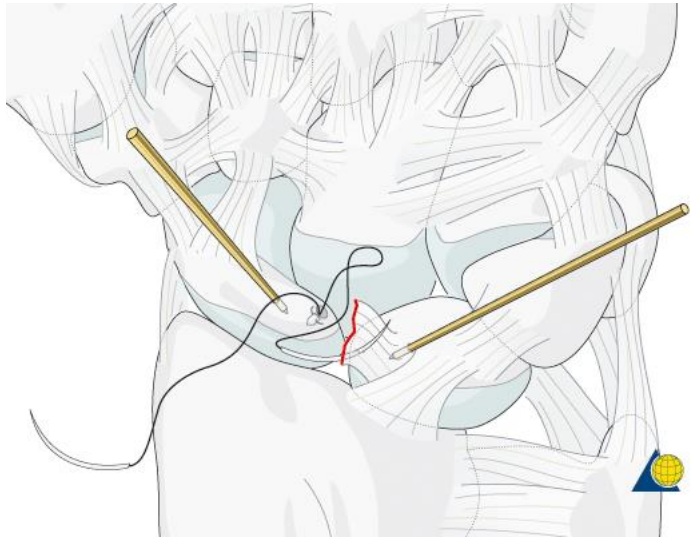
Acute repair



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Chronic SL Dissociation
Leave alone?

- The natural history of SLAC 1 and SLAC 2 is often ***benign***
  - O'Meeghan CJ, Stuart W, mamo V, Stanley JK, Trail IA (2003) *The natural history of an untreated isolated scapholunate interosseous ligament.* J Hand Surg ;23B:307-310
- No consistent evidence that SLIL reconstruction delays or prevents progression of SLAC
- Any operation can make you worse
- 20% complication rate with surgery Naqui et al 2018
  - Infection
  - Bone tunnel fracture
  - Wire penetration

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Full Length Article

The management of chronic non-arthritic scapholunate dissociation: a systematic review

Zafar Naqui[1], Wee Sim Khor[1], Anuj Mishra[2], Vivien Lees[2] and Lindsay Muir[1]

Journal of Hand Surgery
(European Volume)
2018, Vol. 43(4) 394–401

DOI: 10.1177/1753193417734990
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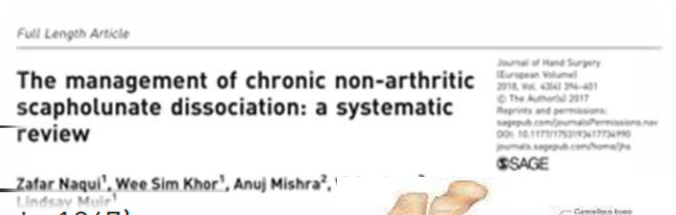
Table 1. Published techniques for the management of chronic SLIL instability.

Technique	Author/year
STT arthrodesis	(Peterson and Lipscomb, 1967)
ECRB tenodesis through the scaphoid	(Palmer et al., 1978)
Scaphoid-lunate-capitate-triquetrum arthrodesis	(Uematsu, 1979)
Limited triscaphoid intercarpal arthrodesis	(Watson, 1980)
Extensor tenodesis (dorsal and palmar)	(Glickel and Millender, 1984)
Scapholunate arthrodesis	(Hastings and Silver, 1984)
Blatt capsulodesis	(Blatt, 1987)
Palmar SLIL reconstruction with K-wire	(Conyers, 1990)
Four-Bone ECRB weave	(Almquist et al., 1991)
Scaphocapitate arthrodesis	(Pisano et al., 1991)
Scaphocapitolunate arthrodesis	(Rotman et al., 1993)
Brunelli FCR tenodesis	(Brunelli and Brunelli, 1995)
Dorsal radioscaphoid capsulodesis	(Wintman et al., 1995)
RASL with Herbert screw	(Rosenwasser et al., 1997)
Dorsal capsulodesis with suture anchors	(Uhl et al., 1997)
Modified Brunelli FCR tenodesis	(Van Den Abbeele et al., 1998)
Bone-retinaculum-bone autograft (distal radius)	(Weiss, 1998)
Metacarpal-carpal bone-retinaculum-bone autograft	(Harvey and Hanel, 2002)
Mayo dorsal capsulodesis	(Moran et al., 2005)
Arthroscopic debridement and pinning of joint	(Darlis et al., 2006)
Three-ligament FCR tenodesis	(Garcia-Elias et al., 2006)
Arthroscopic RASL	(Aviles et al., 2007)
ECRB ligamentoplasty and dorsal capsulodesis	(Papadogeorgou and Mathoulin, 2010)
Arthroscopic dorsal capsulodesis	(Mathoulin et al., 2011)
Viegas dorsal capsulodesis	(Camus and Van Overstraeten, 2013)
Transosseous ligament reconstruction with FCR	(Ross and Couzens, 2013)
Arthroscopic dorsal and volar ligament reconstruction	(Ho et al., 2015)


Full Length Article

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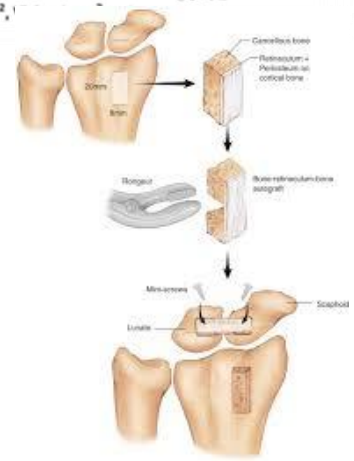

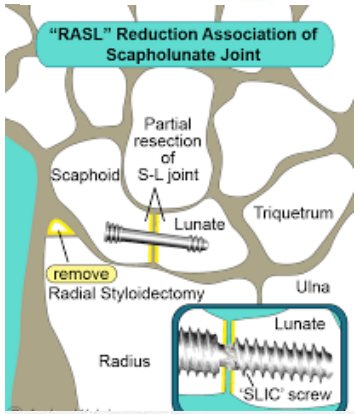

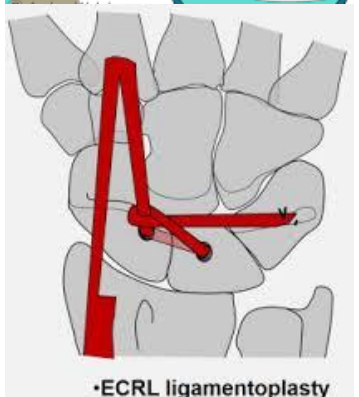

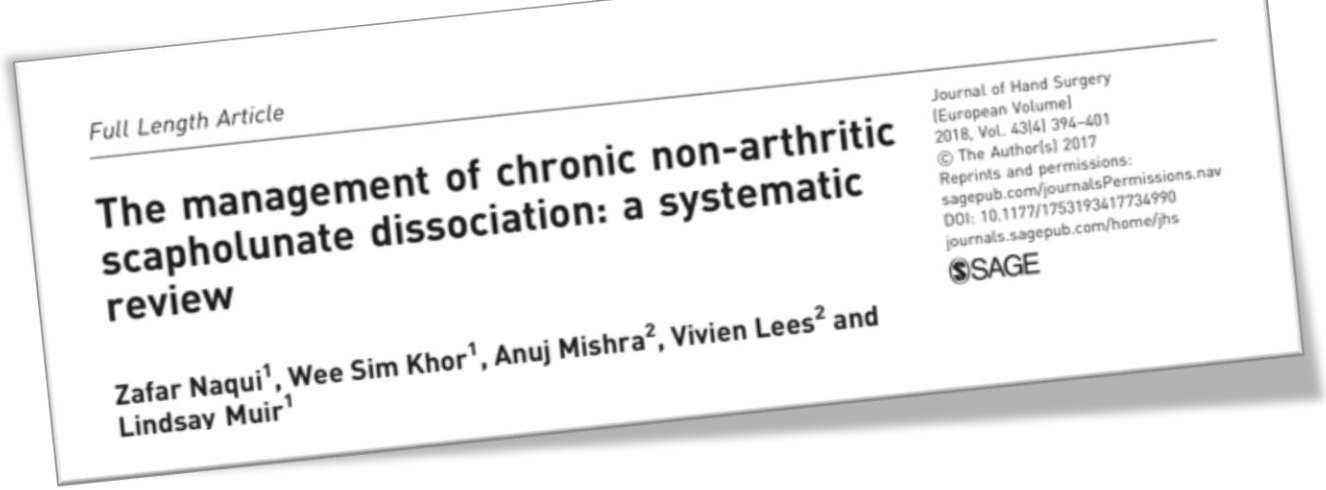

Full Length Article

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Zafar Naqui[1], Wee Sim Khor[1], Anuj Mishra[2], Vivien Lees[2] and Lindsay Muir[1]

Journal of Hand Surgery (European Volume) 2018, Vol. 43(4) 394–401

DOI: 10.1177/1753193417734990
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- 17 papers
- Pain
  - pre-op 6
  - post op 2.8
- Grip strength
  - +11% tenodesis
  - +31% capsulodesis
- Radioulnar arc
  - +19% capsulodesis
  - -11% tenodesis

- Radiological gap recurs
- Does not correlate with outcome
- Very short follow up
  - Only 4 papers > 4 years….

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Scapho-lunate injuries

- Acute- fix
- Chronic
  - Asymptomatic
    - then probably leave alone
    - Natural history may well be benign
    - Surgery is unproven and may cause severe complications
  - Symptomatic
    - We do not know which op is best
    - Soft tissue procedures unpredictable

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- Dupuytren's Disease
- Flexor Tendon Repair
- Scapholunate injuries
- Wrist Arthritis
- Distal Radius Fractures
- Metacarpal Fractures

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Wrist Arthritis

- Wrist replacement is “work in progress”
- Don’t forget neurectomy
- Use preserved cartilage

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Montgomery *vs* Lanarkshire

Health Board 2015 UKSC11

"A doctor has a duty to take reasonable care to ensure that the patient is aware of any material risk involved in any recommended treatment and of any reasonable alternative or variant treatments. "

"It requires that the test of materiality is whether in the circumstances of the particular case a reasonable person in the patient's position would be likely to attach significance to it"

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SCIENTIFIC ARTICLE

Complications Following Partial and Total Wrist Arthroplasty: A Single-Center Retrospective Review

Michael P. Gaspar, MD,*† Jesse Lou, BA,* Patrick M. Kane, MD,*†
Sidney M. Jacoby, MD,*† A. Lee Osterman, MD,*† Randall W. Culp, MD*†

Conclusions Although TWA and partial wrist arthroplasty are attractive treatment options for the painful arthritic wrist, there remains a noteworthy potential for complications requiring additional surgery. A detailed understanding of these risks is essential for surgeons so that patients may be counseled accordingly and that alternative treatment options may be considered. *(J Hand Surg Am. 2016;41(1):47–53. Copyright © 2016 by the American Society for Surgery of the Hand. All rights reserved.)*

59% complication

39% revision

Follow Up 35 +/- 28 months

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☞Yeoh D, Tourret L (2015) *Total wrist arthroplasty: A systematic review of the evidence from the last five years. J Hand Surg Eur*; 40:458-468

8 articles

405 implants, 7 types

FU 2.3 to 7 years

Motec best DASH

Maestro best ROM

Universal 2 highest survival

Biax 69% complication

Remotion lowest complication

The evidence does not support the widespread use of arthroplasty over arthrodesis

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? What journal would publish a THR or TKR paper with such short term results

Unless they are bad results

? Which surgeon would use implants with such a complication and revision rate

- No NJR
- No Beyond Compliance

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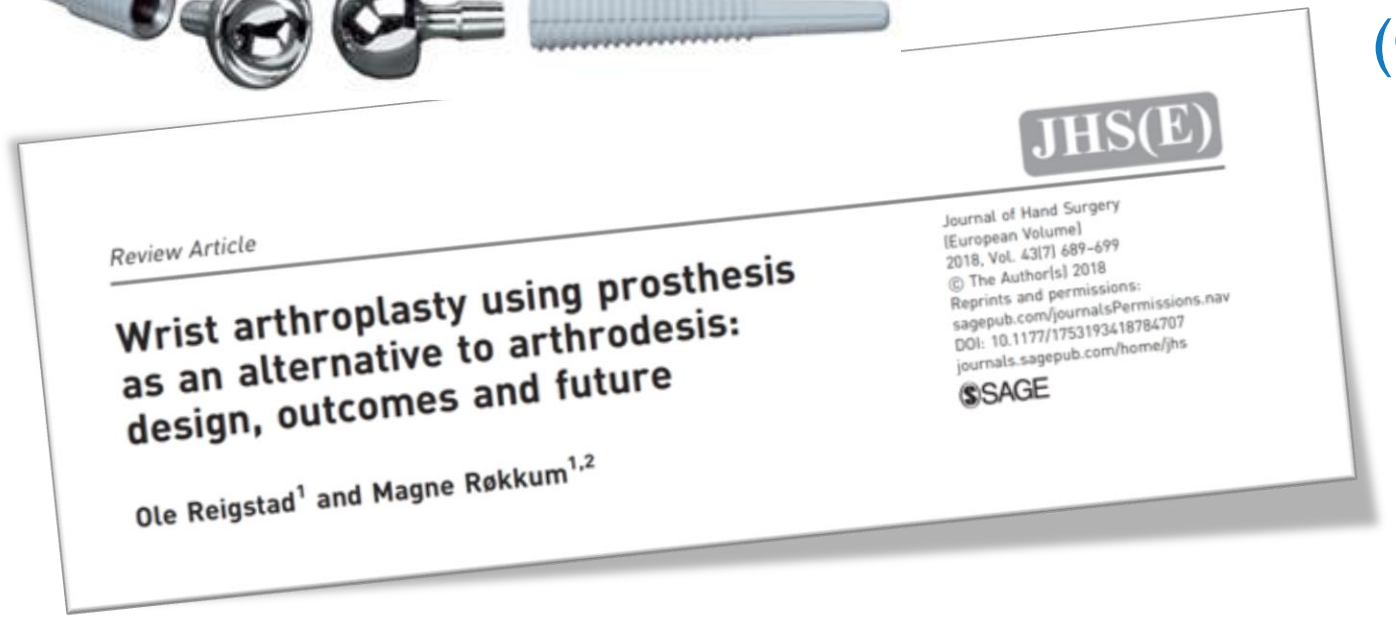
Motec
(Gibbon)



Review Article

Wrist arthroplasty using prosthesis as an alternative to arthrodesis: design, outcomes and future

Ole Reigstad[1] and Magne Røkkum[1,2]

JHS(E)

Journal of Hand Surgery
(European Volume)
2018, Vol. 43(7) 689–699

DOI: 10.1177/1753193418784707
journals.sagepub.com/home/jhs
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- Uncemented ball and socket
- 110 wrists
  - 63 cases > 5 years follow up
  - 82% projected survivorship at 10 years
- ROM 125 degrees
  - total flexion extension radial tilt ulnar tilt
- PRWE 25

☞ Complications

- 33% total
- 9% Revision for loosening
- 4% fusion for infection/malposition

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Wrist Arthritis

- Wrist replacement is "work in progress"
- Don't forget neurectomy
- Use preserved cartilage

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Wrist Denervation

- Hilton1862
  - The nerve crossing a joint innervates that joint
- Wilhelm 1959
  - Wrist joint denervation
  - 5 incisions
- Berger 1998
  - Single incision AIN and PIN

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Partial Wrist Denervation: The Evidence Behind a Small Fix for Big Problems

Michael T. Milone, MD,* Christopher S. Klifto, MD,† Louis W. Catalano III, MD*

JHS (2018) 43:272-77

- No evidence that proprioception is damaged
- No need for pre-op injections
- Results
  - Satisfaction 70-90%
  - Good/excellent 70-90%
  - Survival 68-85% @ 2.6 years

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Wrist Arthritis

- Wrist replacement is “work in progress”
- Don’t forget neurectomy
- Preserve cartilage

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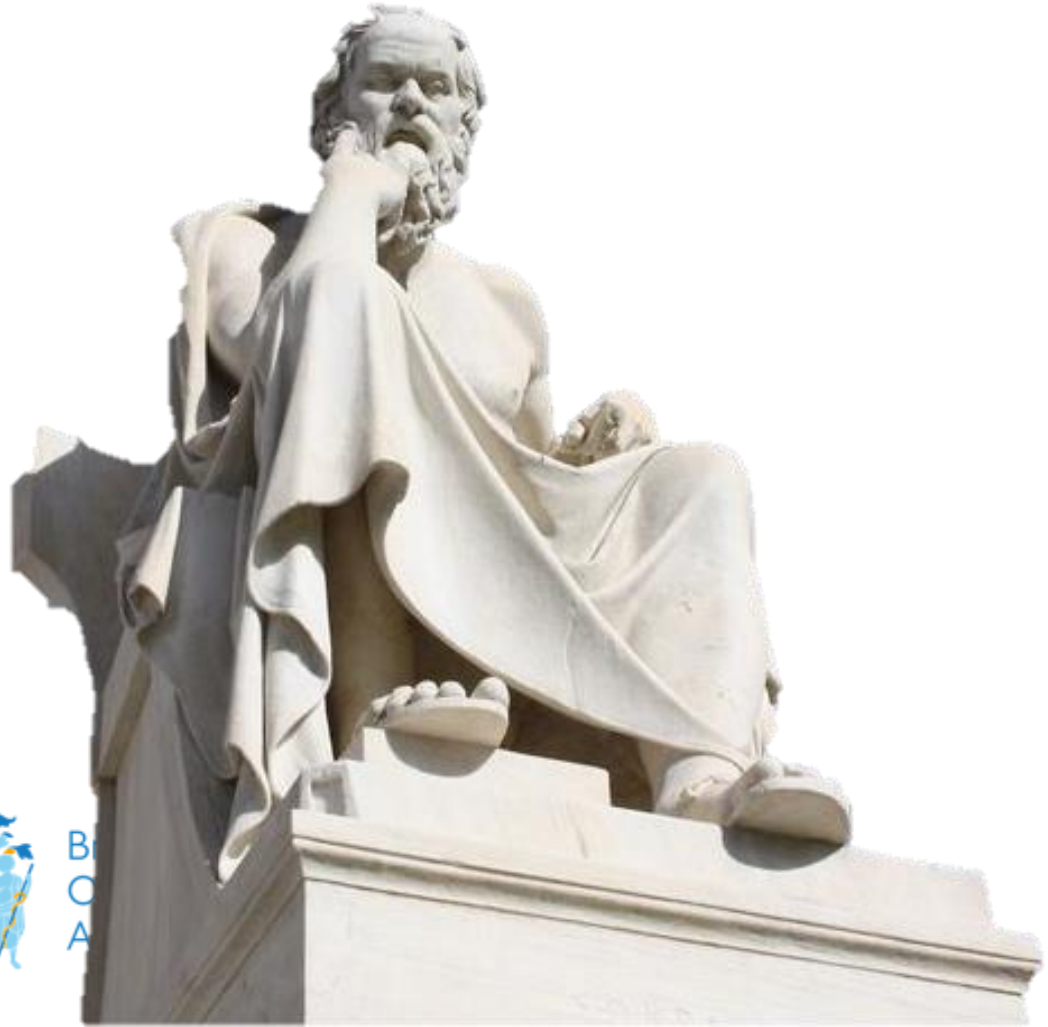
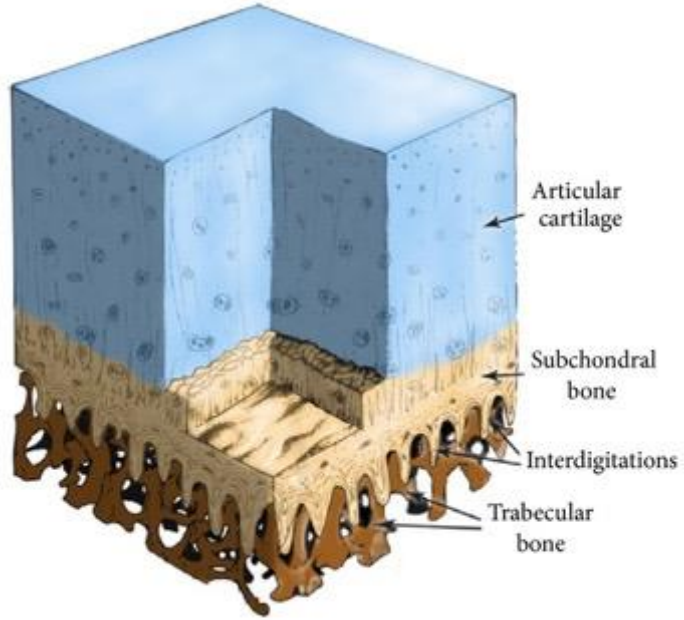
Your own cartilage and subchondral bone
is better than
metal and plastic





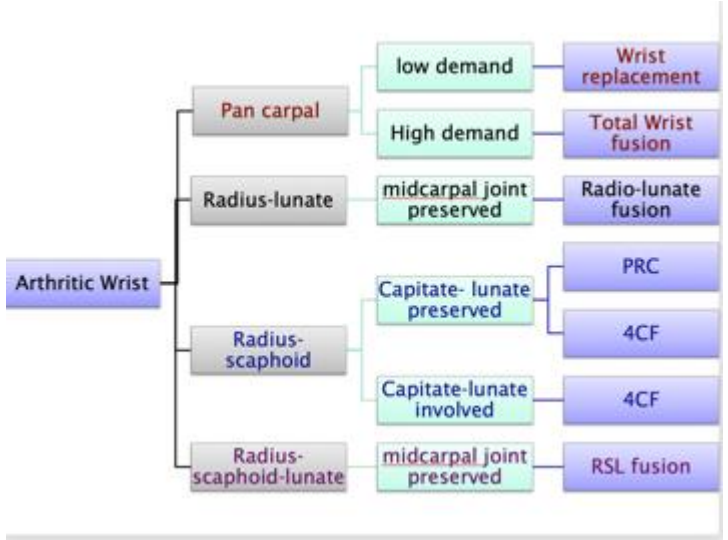
Review article

The Bone & Joint Journal
Formerly known as *JBJS (Br)*

Logan J, Warwick D (2015)

The treatment of wrist arthritis.

Bone Joint J 97-B : 1303-1308



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Is there preserved cartilage?

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If there is preserved cartilage
use it

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PRC or 4CF

- Equal clinical outcomes
  - 60% ROM
  - 80% grip strength
  - 80% survivorship 10 years
- PRC
  - easier
  - safer
  - cheaper

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Saltzman BM et al. (2015*) Clinical outcomes of proximal row carpectomy versus four-corner arthrodesis for post-traumatic wrist arthropathy: A systematic review*. J Hand Surg Eur Vol 2015;40:450-457.

SNAC and SLAC
is the capitate-lunate involved?

- No
  - PRC
- 4CF
  - Yes
  - 4CF

☞ Do not do

- Replacement
- Total fusion

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JHS(E)

Full Length Article

A comparison of dart thrower's range of motion following radioscapholunate fusion, four-corner fusion and proximal row carpectomy

Philippa A. Rust[1], Larissa M. Manojlovich[2] and Robert Wallace[3]

Journal of Hand Surgery
(European Volume)
2018, Vol. 43(7) 718–722

DOI: 10.1177/1753193418783330
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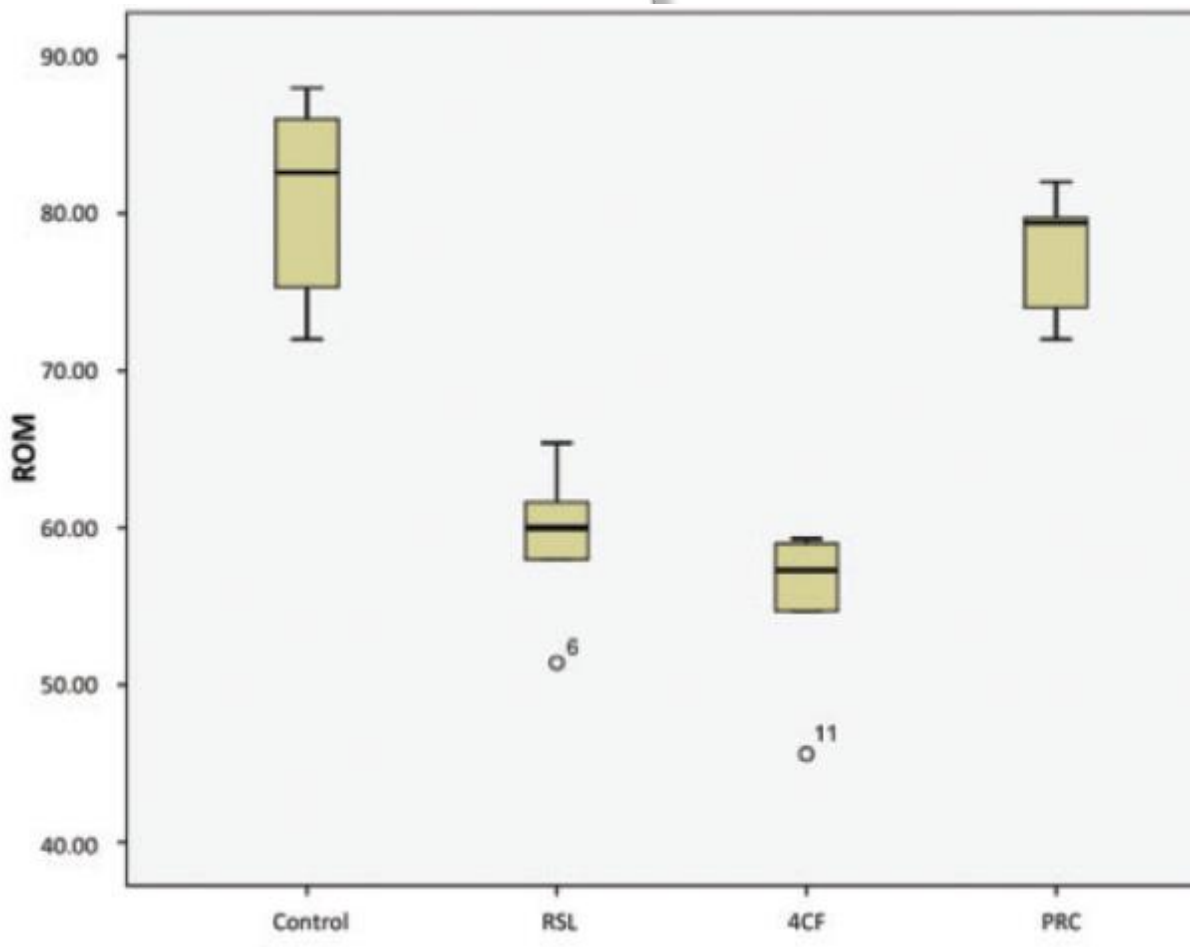
	Control	RSL	4CF	PRC
Radial extension	43 (SD 4)	32 (SD 6) $p < 0.01^a$	23 (SD 4) $p < 0.001^a$ $p < 0.04^b$	45 (SD 5) $p > 0.05^a$ $p < 0.003^b$ $p < 0.001^c$
Ulnar flexion	38 (SD 3)	28 (SD 2) $p < 0.001^a$	32 (SD 3) $p < 0.03^a$ $p > 0.05^b$	33 (SD 2) $p < 0.05^a$ $p < 0.05^b$ $p > 0.05^c$
DTM arc	81 (SD 3)	60 (SD 2) $p < 0.001^a$	55 (SD 2) $p < 0.001^a$ $p > 0.05^b$	78 (SD 2) $p > 0.05^a$ $p < 0.002^b$ $p < 0.001^c$



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- ☞Dupuytren’s Disease
- ☞Flexor Tendon Repair
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- ☞Metacarpal Fractures

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Temper your enthusiasm to fix everything

- ☞ Surgery is dangerous
- ☞ Anatomy *does not* correlate with outcome
  - In the older patient
  - Low functional demands
- ☞ Anatomy *might* correlate *somewhat* with outcome
  - In younger patients
  - High functional demands

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J Hand Surg (E) 2013;38:118-25

The relationship between displacement and clinical outcome after distal radius (Colles') fracture

The Journal of Hand Surgery
(European Volume)
38E(2) 116–126

DOI: 10.1177/1753193412445144
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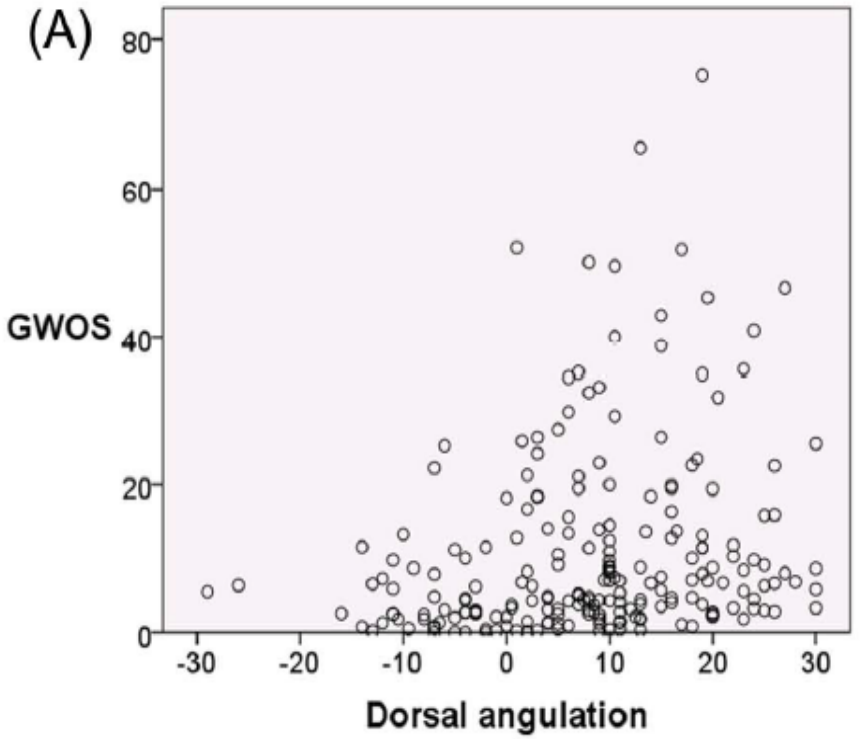

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Anatomy *may* make a difference in younger people

Gliatis, Plessas and Davis (2000) *Outcome of distal radius fracture in young people.* J Hand Surg 25B;6:535-543

Grewal and McDermid (2007) *The Risk of Adverse Outcomes in Extra-Articular Distal Radius Fractures Is Increased With Malalignment in Patients of All Ages but Mitigated in Older Patients* J Hand Surg 32(a) 962-970

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Over 60 to 65 years

No difference for surgery vs non-op

Chen Y, Chen X, Li Z, Yan H, Zhou F, Gao W., *Safety and Efficacy of Operative Versus Nonsurgical Management of Distal Radius Fractures in Elderly Patients: A Systematic Review and Meta-analysis.* J Hand Surg Am 2016; 41:404-13.

Lutz K, Yeoh KM, MacDermid JC, Symonette C, Grewal R. *Complications associated with operative versus nonsurgical treatment of distal radius fractures in patients aged 65 years and older*. J Hand Surg Am, 2014; 39:1280-6.

Volar Plate Fixation Versus Plaster Immobilization in Acceptably Reduced Extra-Articular Distal Radial Fractures

A Multicenter Randomized Controlled Trial

Marjolein A.M. Mulders, MD, PhD, Monique M.J. Walenkamp, MD, PhD, Susan van Dieren, PhD, J. Carel Goslings, MD, PhD, and Niels W.L. Schep, MD, PhD; on behalf of the VIPER Trial Collaborators*

Background: There is no consensus as to whether displaced extra-articular distal radial fractures should be treated operatively or nonoperatively. We compared the outcomes of open reduction and volar plate fixation with closed reduction and plaster immobilization in adults with an acceptably reduced extra-articular distal radial fracture.

Methods: In this multicenter randomized controlled trial, patients 18 to 75 years old with an acceptably reduced extra-articular distal radial fracture were randomly assigned to open reduction and volar plate fixation or plaster immobilization. The primary outcome was function as measured with the Disabilities of the Arm, Shoulder and Hand (DASH) questionnaire after 12 months. Follow-up was conducted at 1, 3, and 6 weeks and at 3, 6, and 12 months. Analyses were performed according to the intention-to-treat principle.

Results: Ninety-two patients were randomized, 48 to open reduction and volar plate fixation and 44 to plaster immobilization; 1 patient in each group was excluded for withdrawing informed consent. At all follow-up time points, operatively treated patients had significantly better functional outcomes, as indicated by significantly lower DASH scores, than patients treated nonoperatively (all p values < 0.05). Twelve nonoperatively managed patients (28%) had fracture redisplacement within 6 weeks and underwent subsequent open reduction and internal fixation, and 6 patients (14%) had a symptomatic malunion treated with corrective osteotomy.

Conclusions: Patients with an acceptably reduced extra-articular distal radial fracture treated with open reduction and volar plate fixation have better functional outcomes after 12 months compared with nonoperatively managed patients. Additionally, 42% of nonoperatively managed patients had a subsequent surgical procedure. Open reduction and volar plate fixation should be considered for patients who experience this common injury.

Level of Evidence: Therapeutic Level I. See Instructions for Authors for a complete description of levels of evidence.

J Bone Joint Surg Am. 2019;101:787-96

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Risks of k wires

26-28% risk of complication!!

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[24]McFayden I, Field J, McCann P, Ward J, Nicol S, Curwen C. Should unstable extra-articular distal radial fractures be treated with fixed-angle volar locked plates or percutaneous Kirschner wires? A prospective randomised controlled trial. *Injury*, 2011; 42(2):162-166.

[25]Rozental TD, Blazar PE, Franko OI, Chacko AT, Earp BE, Day CS. Functional outcomes for unstable distal radial fractures treated with open reduction and internal fixation or closed reduction and percutaneous fixation. A Prospective randomized trial. *J Bone Joint Surg Am*, 2009; 91(8):1837-1846.

J Hand Surg (E) 2014 39: 745-56

Complications following volar locking plate fixation for distal radial fractures: a systematic review

The Journal of Hand Surgery
(European Volume)
2014, Vol. 39E(7) 745–754

DOI: 10.1177/1753193413511936
jhs.sagepub.com
SAGE

A. Bentohami[1], K. de Burlet[1], N. de Korte[1] , M. P. J. van den Bekerom[2], J. C. Goslings[3] and N. W. L. Schep[3]

Abstract

The purpose of this systematic review is to assess the prevalence of complications following volar locking plate fixation of distal radial fractures. A computer-based search was carried out using EMBASE and PUBMED/MEDLINE. Only prospective comparative and prospective cohort studies that presented data concerning complications after treatment of distal radial fractures with a volar locking plate in human adults with a minimal follow-up of 6 months were included. Two quality assessment tools were used to assess the methodological quality of the studies (level of evidence rating according to the Oxford Centre of Evidence Based Medicine and the modified version of the Cochrane Bone, Joint and Muscle Trauma Group's former quality assessment tool).

Thirty three studies were eligible for final assessment. Most complications were problems with nerve and tendon function as well as complex regional pain syndrome. With an overall complication rate of 16.5%, most of which were 'minor' complications and low rates of nonunion and malunion, volar locking plate fixation can be considered a reasonably safe treatment option for patients with distal radial fractures.

complication rate 16%, 8% material

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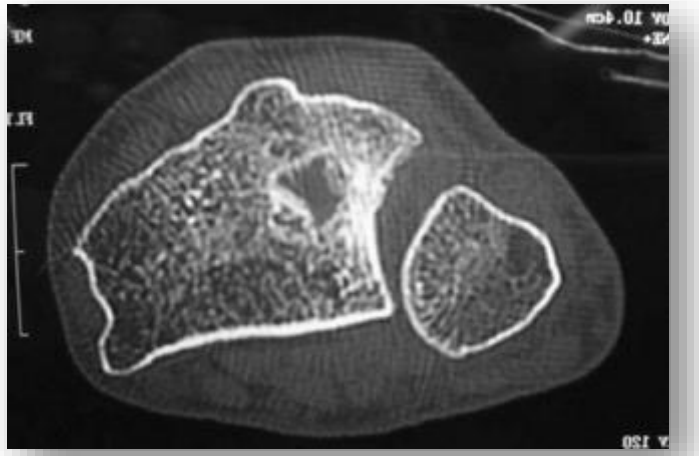
So, should we fix distal radius fractures?

- ☞ Earlier restoration of function
  - Avoid POP
  - Early movement
- ☞ Restoration of rotation
  - Dorsal angulation
- ☞ Improved strength
  - Midcarpal malalignment
- ☞ Ulno-carpal abutment
  - Positive ulnar variance



But to avoid OA

No evidence…….

How many of these…..

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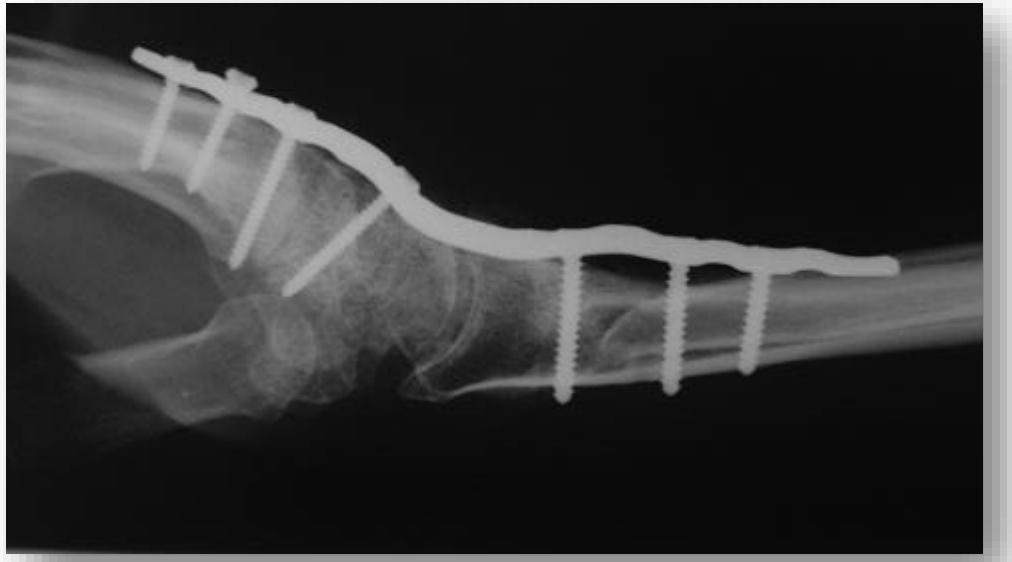
End up with these…?



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Very unlikely!

- Kopylov P, et al **1993** *Fractures of the distal end of the radius in young adults: a 30 year follow up* J Hand Surg **18B:**45-49
- Haus BM, Jupiter JB **2009** *Intra-articular fractures of the distal end of the radius in young adults: reexamined as evidence based and outcomes medicine* JBJS(Am) 2009;91A:2984-91
- Goldfarb CA et al **2006** *Fifteen year outcome of displaced intra-articular fractures of the distal radius* J Hand Surg 31A:633-639
- Warwick et al **1993** *Function 10 years after Colles' Fracture* CORR 295:270-274
- Forward, Davis, Sithole **2008** *Do young patient with malunited fractures of the distal radius inevitably develop symptomatic post-traumatic osteoarthritis?* JBJS 90B:629-637
- Lutz et al **2007** *Long term results following ORIF of dorsal dislocated distal intra-articular fractures* Handchir Mikrochir Plast Chir 39:54-59

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Why is the risk lower?

- Concave surfaces
  - tolerate incongruity
- Non-weight bearing
  - Less load
  - Less impact
- Discrepancy usual in the hand
  - OA vs Symptoms
    - Thumb base
    - Heberdon's nodes
    - Radioscaphoid

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Plates or wires?

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DRAFFT

Distal Radius Acute Fracture Fixation Trial

Methods

- 461 patients
- Randomised
  - K wire vs VP
- Outcomes at 3,1,12 months
  - PRWE
  - QuickDASH
  - Pain
  - Complications

Outcome

- No difference

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Costa ML, Achten J, Parsons NR et al. *Percutaneous fixation with Kirschner wires versus volar locking plate fixation in adults with dorsally displaced fracture of distal radius: randomised controlled trial*. BMJ. 2014, 349: 4807-16

DRAFFT
Distal Radius Acute Fracture Fixation Trial

Criticisms

- 4600 eligible patients, 461 entered
- Excluded fractures which cannot be reduced closed!
- Skill of surgeon
  - 2/3 by non consultants
  - 13 % surgeons done less than 10 VPs
  - 13 % surgeons done less than 20 VPs
- Radiology better for VP
- DASH better (not MID)

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Earlier return to function with VLP over K wire

- Arora R, Lutz M, Deml C, Krappinger D, Haug L, Gabl M. *A prospective randomized controlled trial comparing nonoperative treatment with volar locking plate fixation for displaced and unstable distal radial fractures in patients sixty-five years of age and older*. J Bone Joint Surg Am, 2011; 93:2146-2153
- Rozental TD, Blazar PE, Franko OI, Chacko AT, Earp BE, Day CS. *Functional outcomes for unstable distal radial fractures treated with open reduction and internal fixation or closed reduction and percutaneous fixation. A Prospective randomized trial.* J Bone Joint Surg Am, 2009; 91(8):1837-1846.
- Karantana A, Downing ND, Forward DP et al. *Surgical treatment of distal radial fractures with a volar locking plate versus conventional percutaneous methods: a randomized controlled trial*. JBJS (Am) 2-13. Oct 2:95 (19): 1737-44

- Function
  - Substantially improved function at 6 weeks
  - evaporated by 3 months

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VOL. 101-B, No. 11, NOVEMBER 2019

■ EDITORIAL

Cost-effectiveness studies

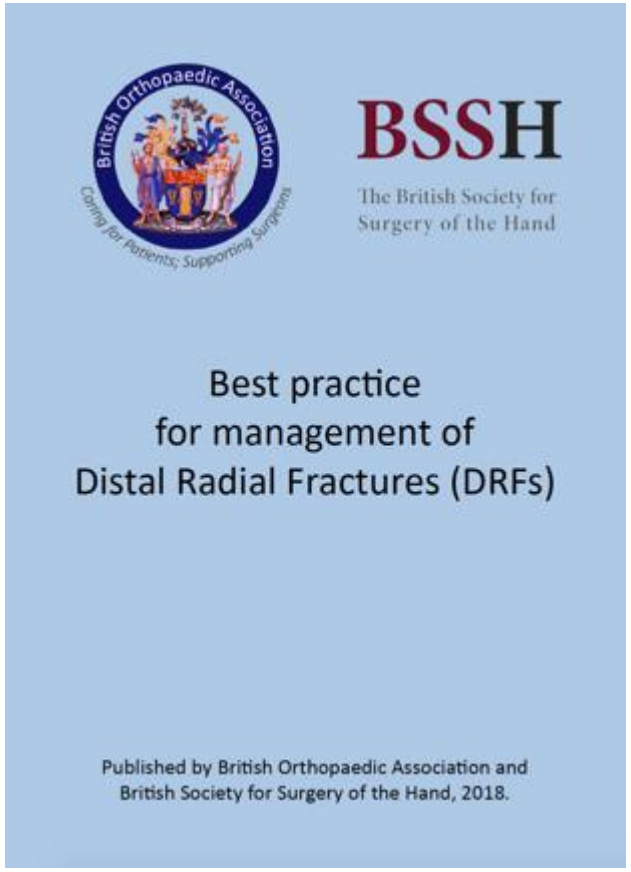
WHO IS THE KEY STAKEHOLDER?

S. Kerr,
D. Warwick,
F. S. Haddad

From The British Editorial Society of Bone and Joint Surgery, London, United Kingdom

Montgomery *vs* Lanarkshire
Health Board 2015 UKSC11

Clavicle
Scaphoid
Distal Radius



- Vitamin C
  - No evidence it prevents CRPS
- Radiological parameters
  - Insufficient evidence to correlate with patient rated outcome
- Immobilisation
  - In neutral not flexed
  - 4 weeks not 6
- Check Xrays
  - At 2 to 3 weeks
  - If unstable
  - If a change in position would prompt surgery
  - No need at time of POP removal

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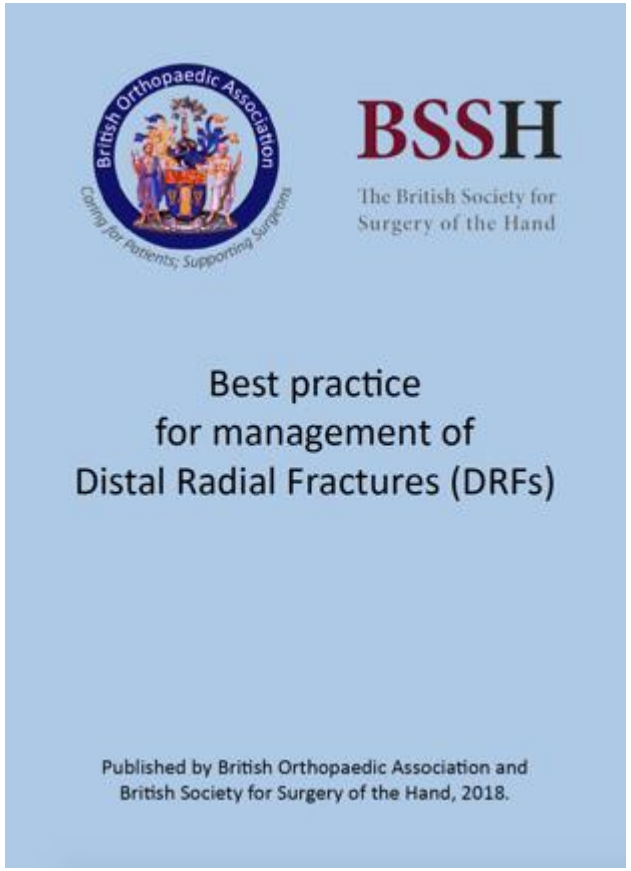

- Over 65 years
  - Evidence that surgery does not improve PROMs
- Which operation
  - ORIF not superior to K-wires at 1 year (level1+)
    - Only applies to reducible fractures
    - ? Function at 6 weeks
  - No need to fix the ulnar styloid
  - Use ORIF rather then ExFix (level 1++)

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☞ Surgery within

- 72 hours-intra-articular fractures
- 1 week extra-articular fractures
- 72 hours- re-displaced fractures

☞ If surgery needed

- Offer k-wires
  - No intra-articular displacement
  - Closed reduction possible
- Offer ORIF

If not

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- ☞ Dupuytren's Disease
- ☞ Flexor Tendon Repair
- ☞ Scapholunate injuries
- ☞ Wrist Arthritis
- ☞ Distal Radius Fractures
- ☞ Metacarpal Fractures

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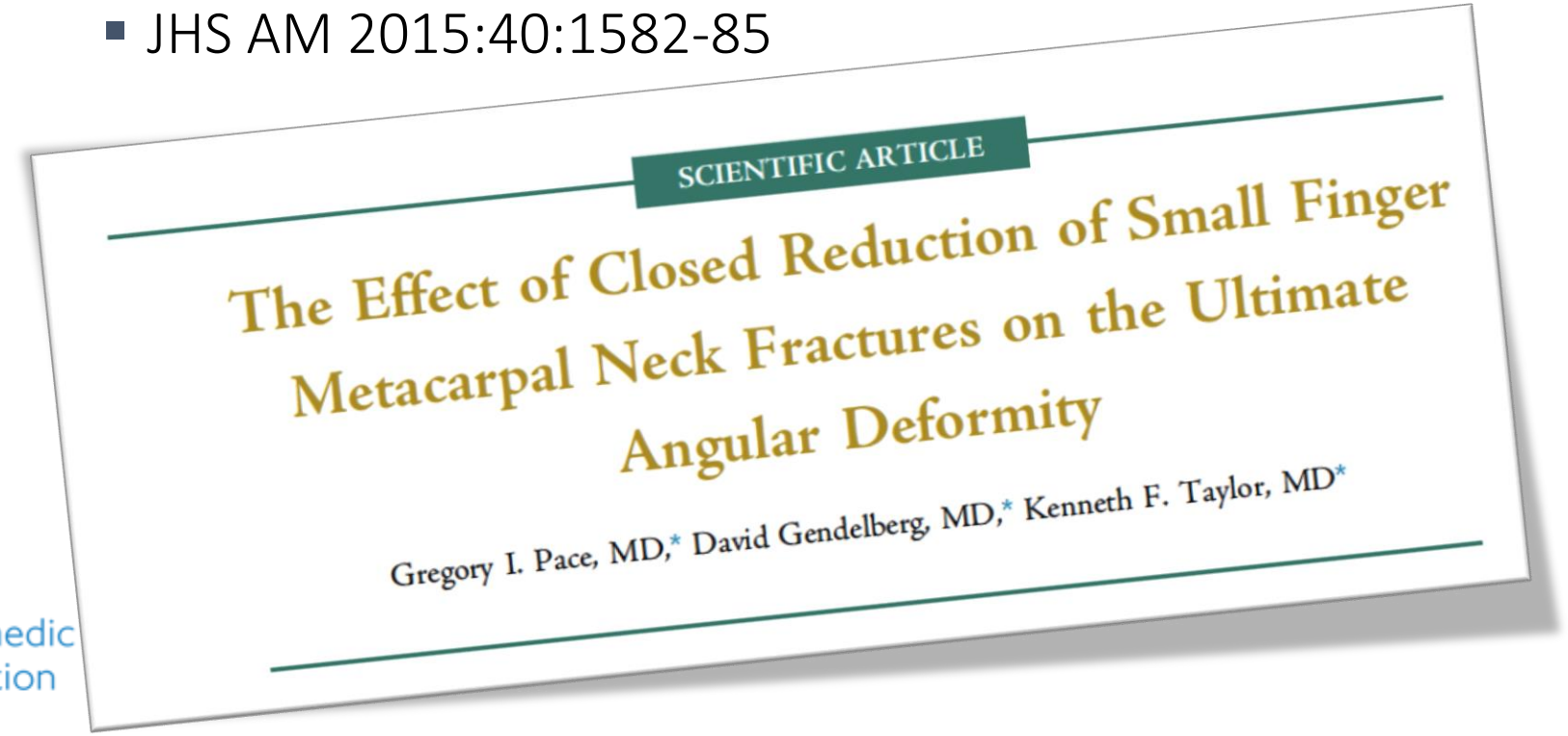
Non-operative

- Immediate mobilisation
  - No splint
- Manipulation does not work
  - JHS AM 2015:40:1582-85



SCIENTIFIC ARTICLE

The Effect of Closed Reduction of Small Finger Metacarpal Neck Fractures on the Ultimate Angular Deformity

Gregory I. Pace, MD,* David Gendelberg, MD,* Kenneth F. Taylor, MD*

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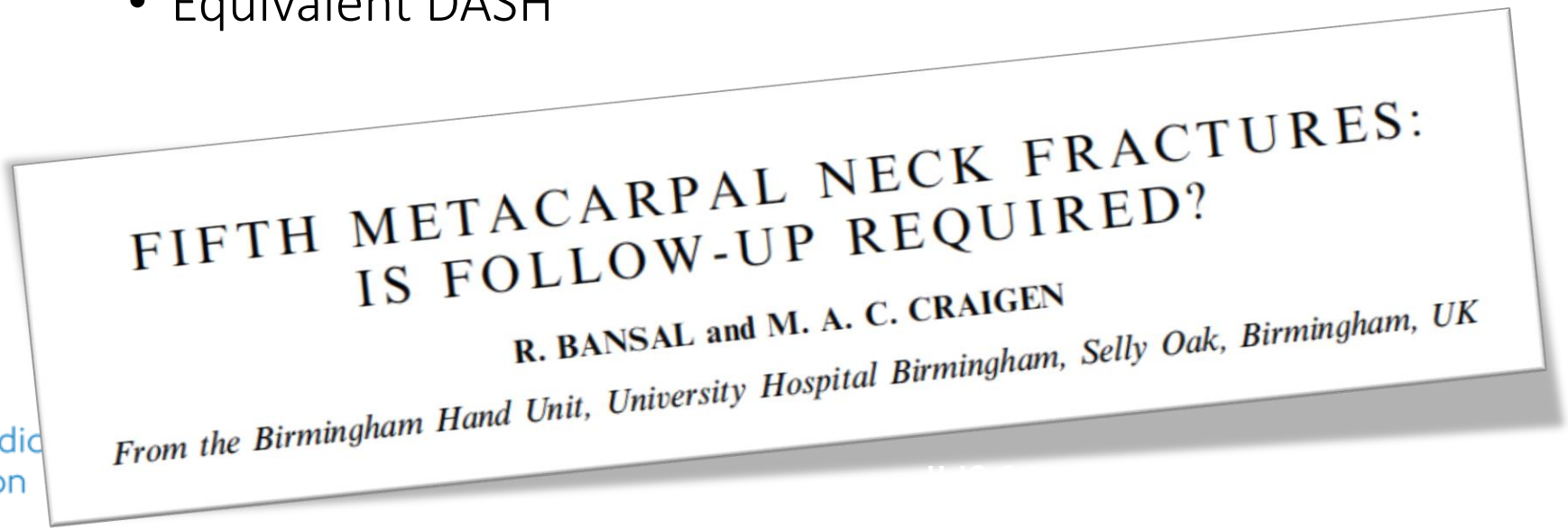
Non-operative for 5th MC neck

- 78 patients
  - Plaster and follow up
    - RTW 5 weeks
  - Neighbour strap, info sheet and discharge
    - RTW 2.7 week
    - Higher satisfaction
    - Equivalent DASH



FIFTH METACARPAL NECK FRACTURES:
IS FOLLOW-UP REQUIRED?

R. BANSAL and M. A. C. CRAIGEN

From the Birmingham Hand Unit, University Hospital Birmingham, Selly Oak, Birmingham, UK

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Facca et al 2010 *Fifth metacarpal neck fracture fixation: Locking plate versus K-wire* Orthop Traumatol Surg Res. 96:506-12

- Patients
  - Non randomised
  - 18 locking plates vs 20 IM wires
- Outcomes
  - Flexion 59% plate vs 98 % wires
  - Extension 89% plate vs 99% wires

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Intramedullary wires

- Recommended for neck fractures
- Percutanous
- Stable
- Avoid impingement
  - Collateral ligaments
  - 1st and 4th Dorsal interosseous

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BJJ 101B 2019 1263-71

THE BONE & JOINT JOURNAL
EST. 1948

■ WRIST & HAND

Single *versus* dual Kirschner wires for closed reduction and intramedullary nailing of displaced fractures of the fifth metacarpal neck (1-2 KiWi): a randomized controlled trial

A. Eisenschenk,
R. Spitzmüller,
C. Güthoff,
A. Obladen,
S. Kim,
E. Henning,
J. E. Dornberger,
D. Stengel,
1-2-KiWi Investigators

From BG Klinikum Unfallkrankenhaus Berlin gGmbH, Berlin, Germany

- N=151
- No difference in QuickDASH
- Trend in single wire
  - Shortening
  - rotation

Indications

Metacarpal neck

- index and middle
  - 10-15
  - Fixed CMCJ
- ring
  - 30-40
- little
  - 50-60
  - Mobile CMCJ
  - Hyperextensile MCPJ

Little finger

- Almost always leave alone
- If surgery: Intramedullary wires
- never transverse wires or plate

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- Dupuytren’s Disease
- Flexor Tendon Repair
- Scapholunate injuries
- Wrist Arthritis
- Distal Radius Fractures
- Metacarpal Fractures

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