



Best Practices in Hand & Wrist Treatment

Chairperson:

Andrew L. Terrono, MD

Monday, March 28th, 2022

11:20-12:10pm

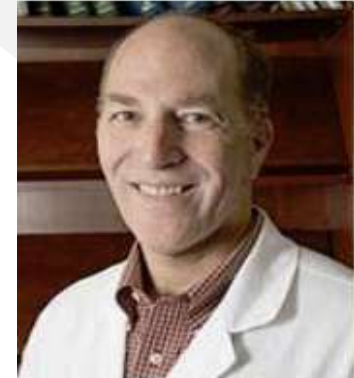
Hand & Wrist Treatment

- Traumatic Hand Injuries
 - Andrew Stein
- Lateral Epicondylitis
 - Taylor Horst, MD
- Ulnar Side Wrist pain
 - Hervey Kimball, MD
- Case Discussion- Panel

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**Work Related Injuries
Workshop**

Andrew Stein, MD



- Assistant Professor at Boston University School of Medicine
- He has extensive experience in all aspects of hand surgery, including reconstructive surgery and trauma
- Speaking today on- **Traumatic Hand Injuries**

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**Work Related Injuries
Workshop**

Taylor Horst, MD



- An Orthopaedic surgeon practicing out of Excel Orthopaedic Specialists in Woburn
- Fellowship trained in and specializes in hand and upper extremity surgery
- Speaking today on- **Lateral Epicondylitis**

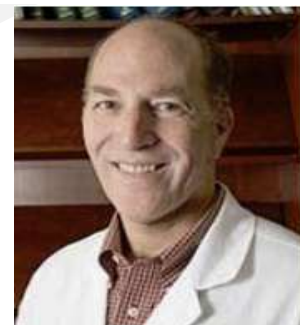
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Hervey Kimball, MD



- Hand and upper extremity surgeon at New England Baptist Hospital
- Boston Sports and Shoulder Center in 2018.
- Attending staff for the Tufts - NEBH combined Hand Surgery Fellowship
- Speaking today on- **Ulnar wrist pain**



Traumatic Hand Injuries

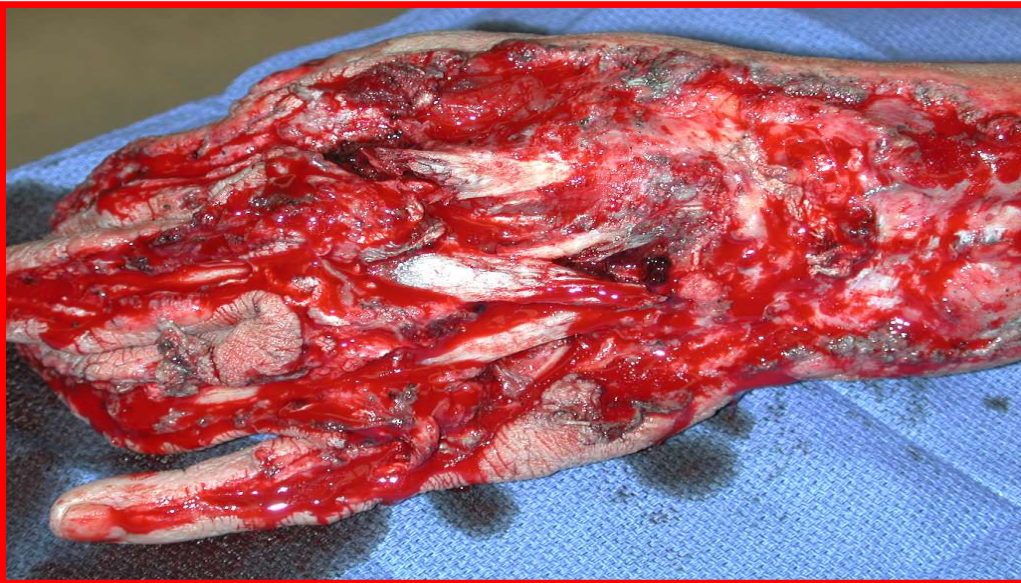
Andrew B. Stein, M.D.
Boston University Medical
Center



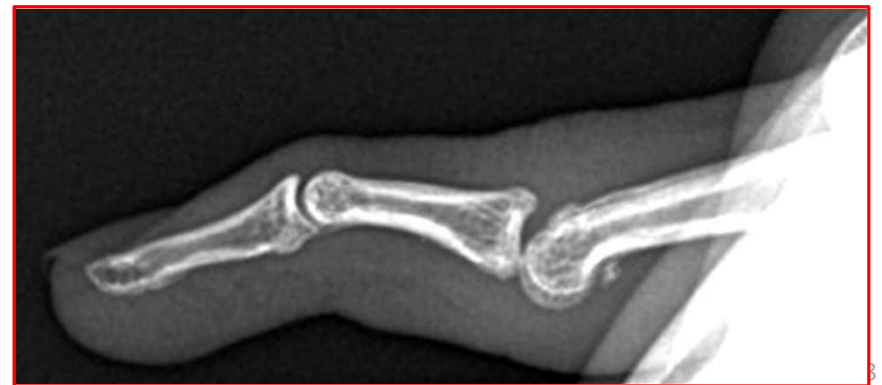
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Injuries May Be Obvious or Subtle



- History (mechanism of injury) and good PE should allow diagnosis
- X-ray usually indicated
- Advanced imaging studies may be helpful



Bad Traumatic Injuries are easy...

Call 911!



Subtle Injuries More Likely to be Missed/Mistreated

- Basic Principles:
 - For finger injuries get *finger* x-rays (not hand)
 - Finger fractures require careful evaluation for rotational alignment of digits
 - Assess integrity of tendon & nerves
- If something seems amiss it probably is
 - Significant swelling with normal x-rays necessitates further w/u
- Missed injuries often lead to poor outcomes



True *Emergent* Injuries

- Vascular Insult/Insufficiency
- Compartment Syndrome
- (Open Fractures - *urgent*)



Finger Fractures

“Hand fractures can be complicated by deformity from no treatment, stiffness from overtreatment, and both deformity and stiffness from poor treatment.”

Alfred Swanson

Finger Fractures

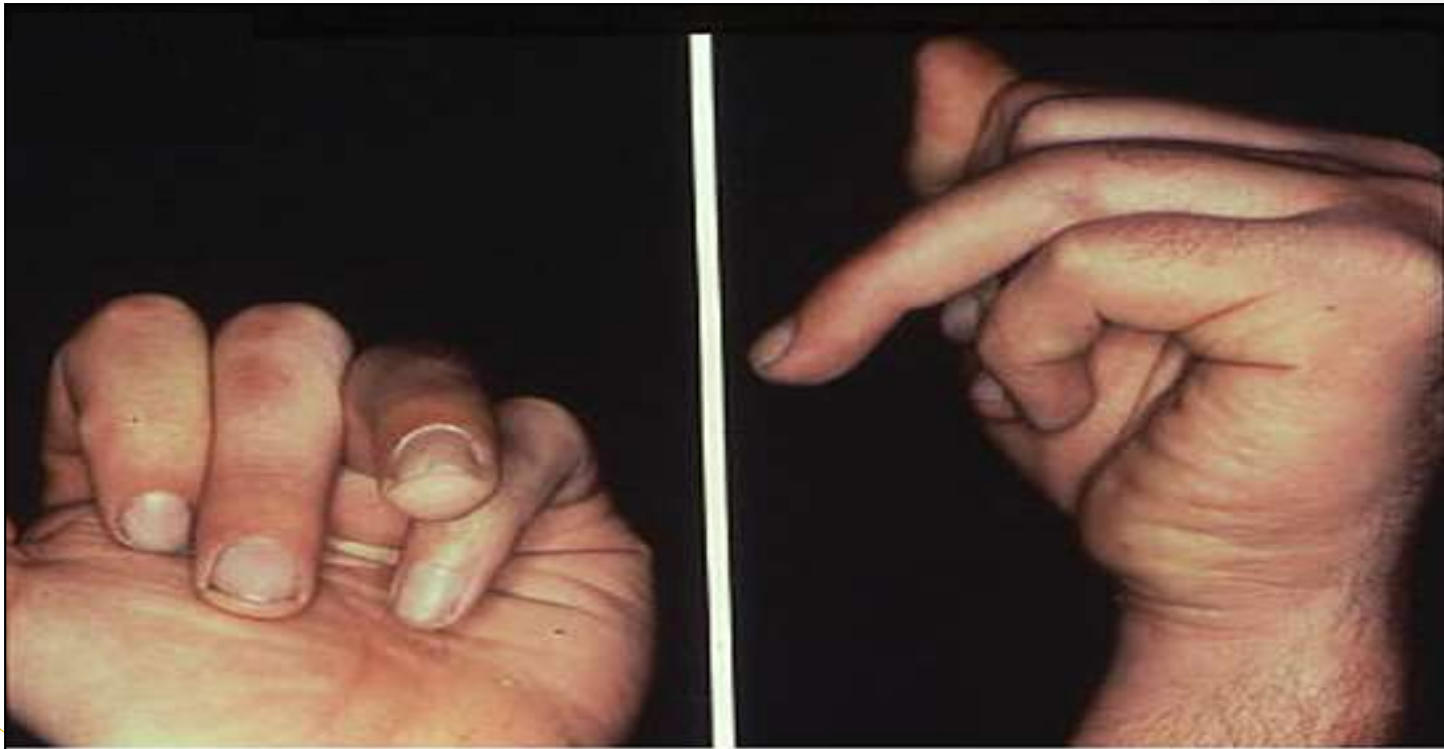
- Most can be treated non-operatively
 - Clinical exam more important than x-rays
- Early motion important
 - Typically stable enough to start ROM by 3 weeks (or sooner)
- Consider surgery for
 - Open fractures
 - Articular injuries
 - Rotationally unstable injuries



Malrotation (“Scissoring”)

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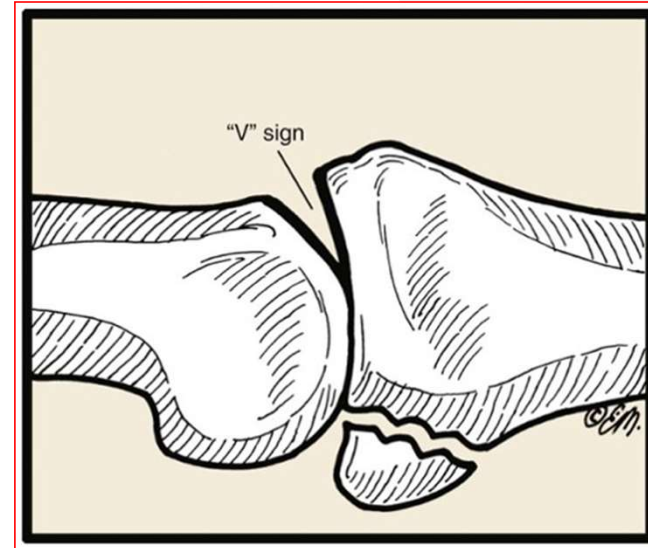
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Malrotation of ring finger due to proximal phalanx fracture. Note that malrotation is most obvious when fingers are flexed and viewed end-on. All fingers should point to base of thumb (scaphoid tuberosity)

Insist on Finger Films

- Injuries may be missed with *hand* x-rays
- “V” sign is indicative of joint incongruity
 - May be subtle



Hand vs. Finger Films

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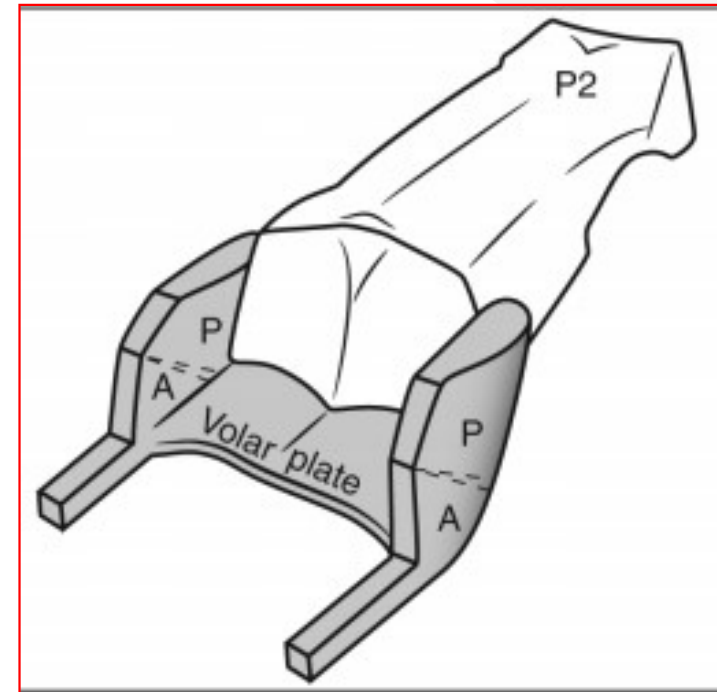
PIP Joint Injuries

- Motion Critical for normal finger function
 - Accounts for 85% excursion at fingertip
 - Unforgiving when injured
- Long lever arm/exposed position make it vulnerable
 - Most commonly injured joint in hand
- Injuries often overlooked/dismissed (Just a “jammed” finger)
 - Self treatment often leads to late presentation
 - Early diagnosis & treatment lead to better outcomes



PIP Anatomy

- Hinge Joint
 - ROM: 0-110°
- Ligamentous “Box”
 - Volar Plate
 - Collateral ligaments
 - Disruption of 2 “sides” results in instability



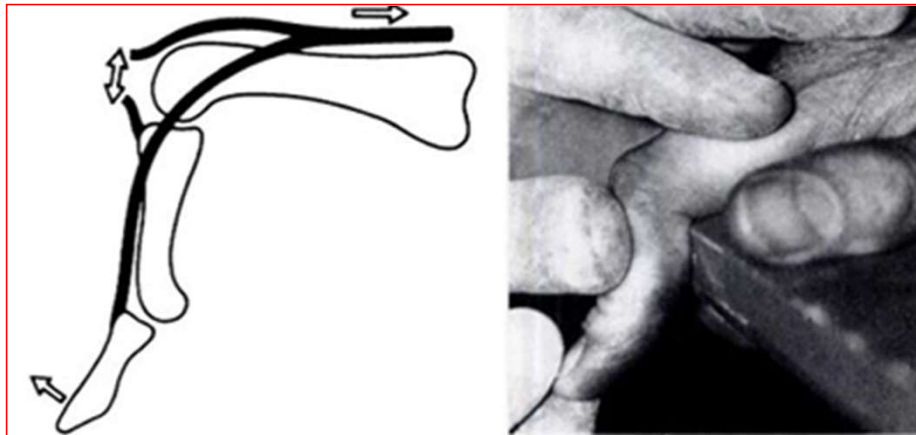
PIP Sprains

- Typically *overtreated* (by PCP or ED) w/splint
 - Instability uncommon (swan neck deformity 2° volar plate disruption)
- Stiffness more likely



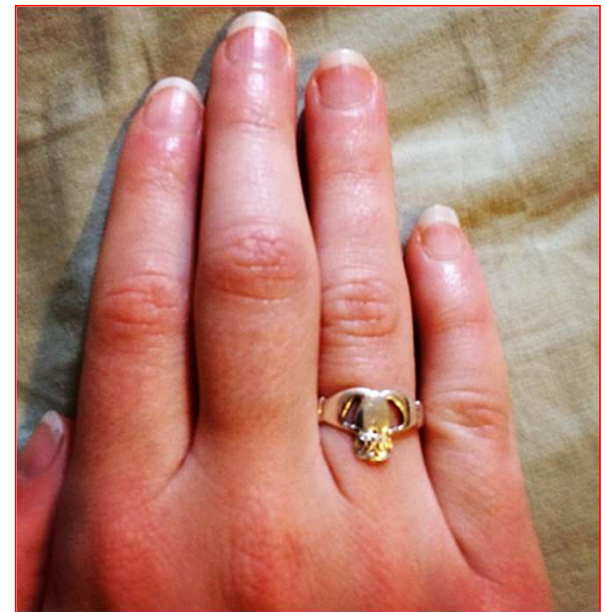
“Pseudo-boutonniere” (i.e. flexion contracture of PIP) vs. True boutonniere

- Distinguish with Elson’s Test (DIP hyperextension is seen if central slip disrupted)



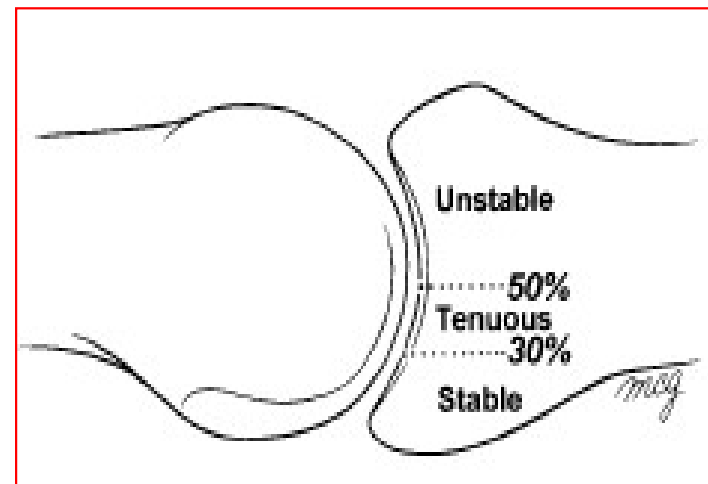
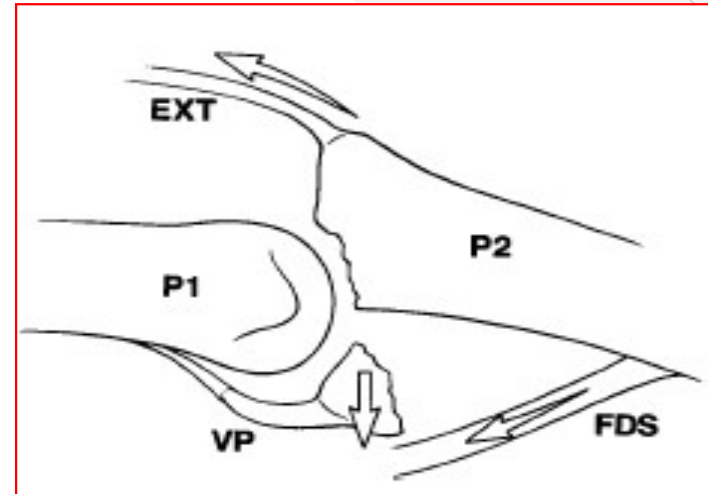
Sprains

- Avoid splints!
- Start ROM ASAP
 - Buddy-tape
- Typically 3-4 months for pain to resolve
- 1 year for appearance to improve (patient education helpful)



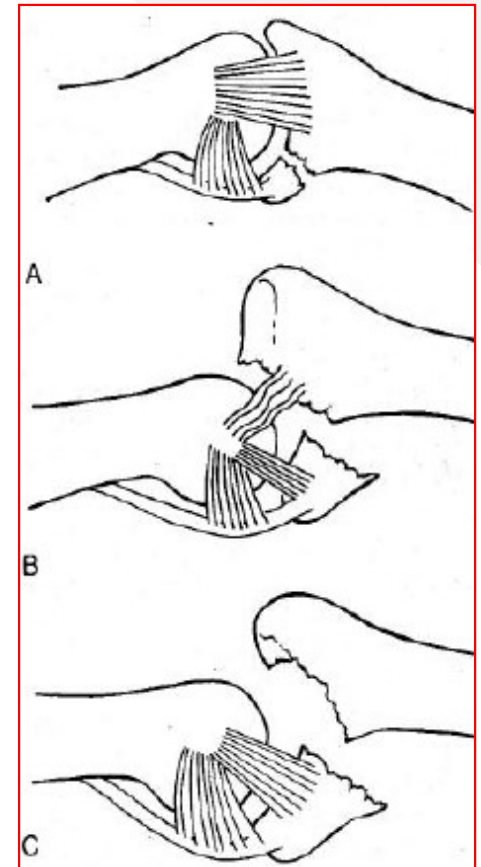
Volar Lip Fractures

- Stable
 - <30% base
- Tenuous
 - 30-50% base
- Unstable
 - >50% base
 - Need >30° flex to maintain reduction



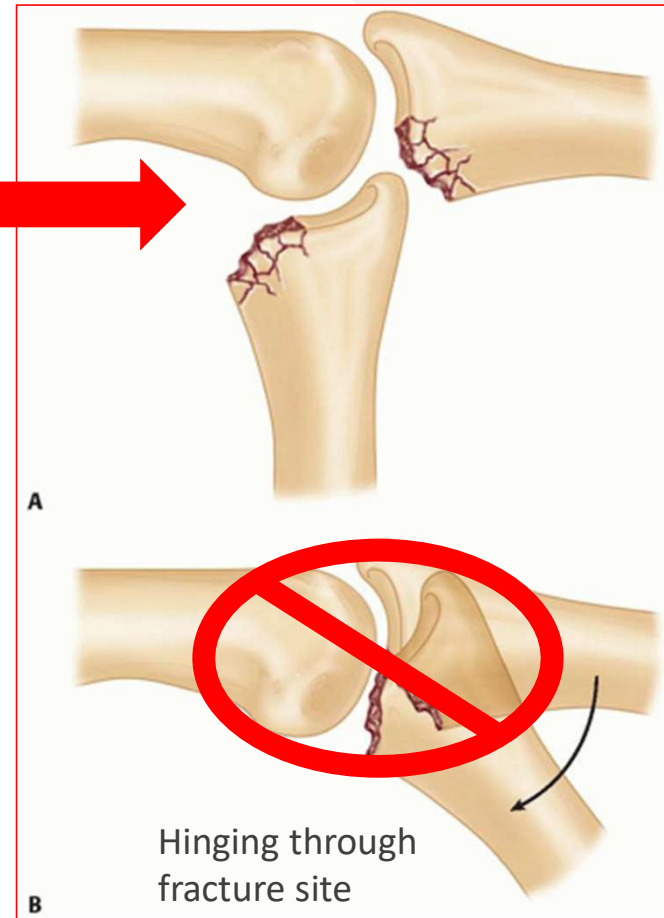
Dorsal Fracture-Dislocation

- Stable or not? (depends on collateral ligament attachments)
 - Exam
 - Digital block may be necessary to assess ROM and joint stability
 - X-ray
 - If hinging suspected get flexion/extension views (may appear as normal ROM)



Goals of Treatment

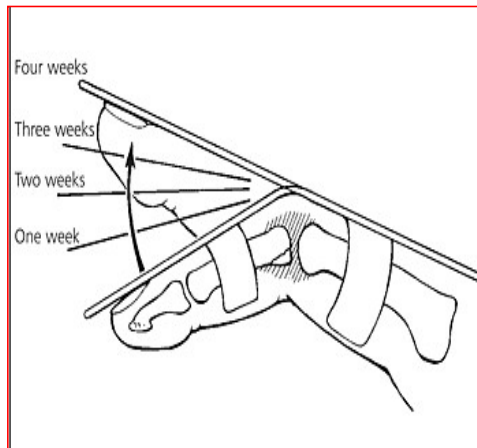
- Restore Joint Congruence/Glide
 - anatomic reduction not crucial
- Early Motion



Fracture Dislocation

■ Treatment Options

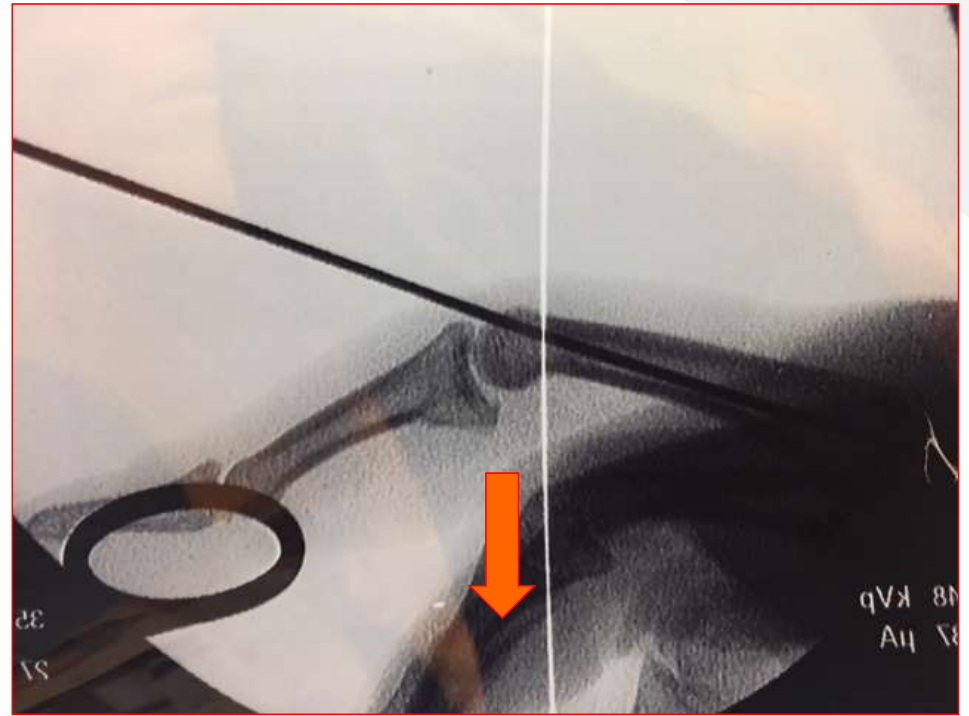
- Immobilization
- Protected motion
- Traction/Ext. Fixation
- ORIF
- Buttress reconstruction



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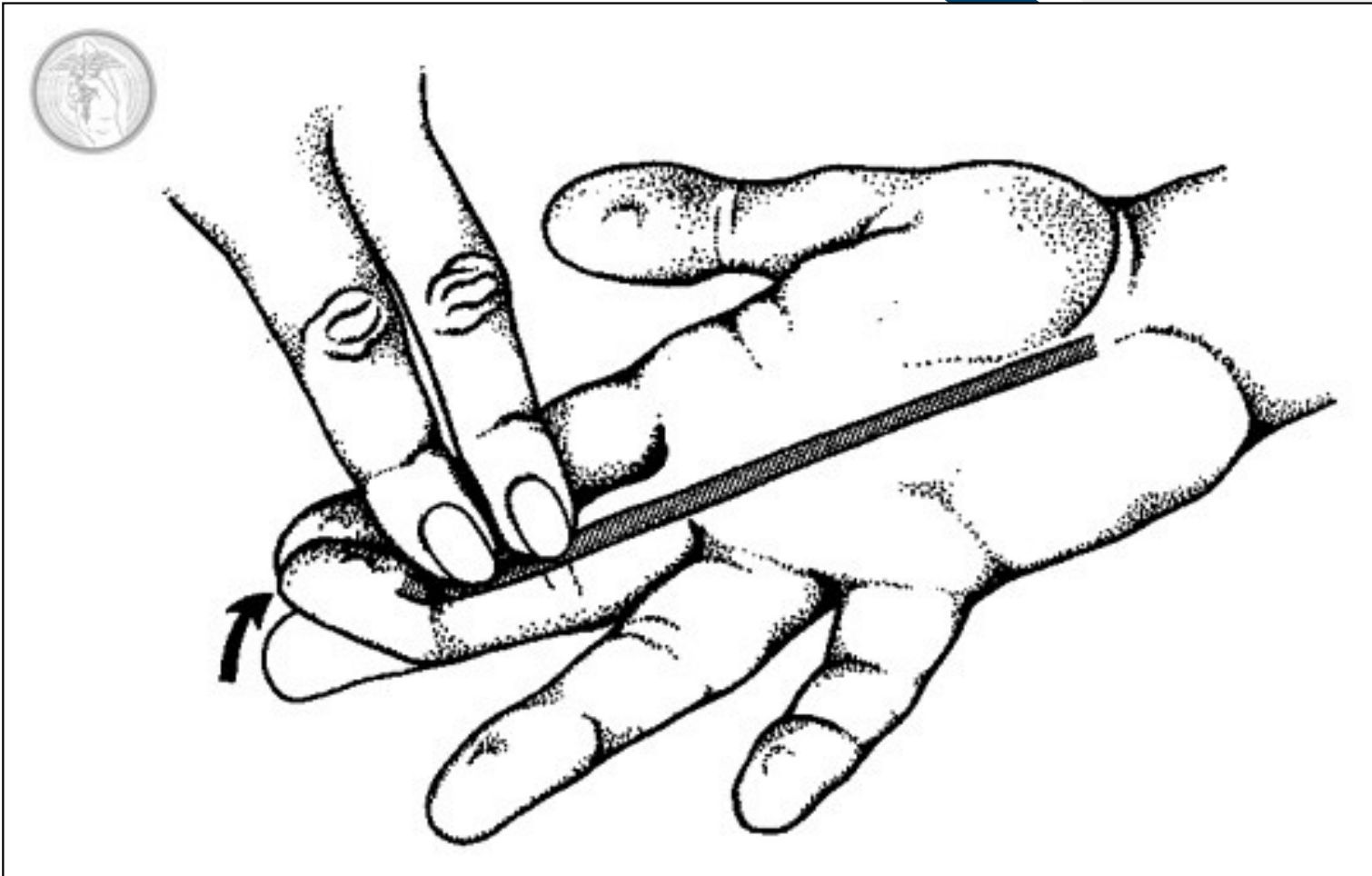
Extension Block Pinning



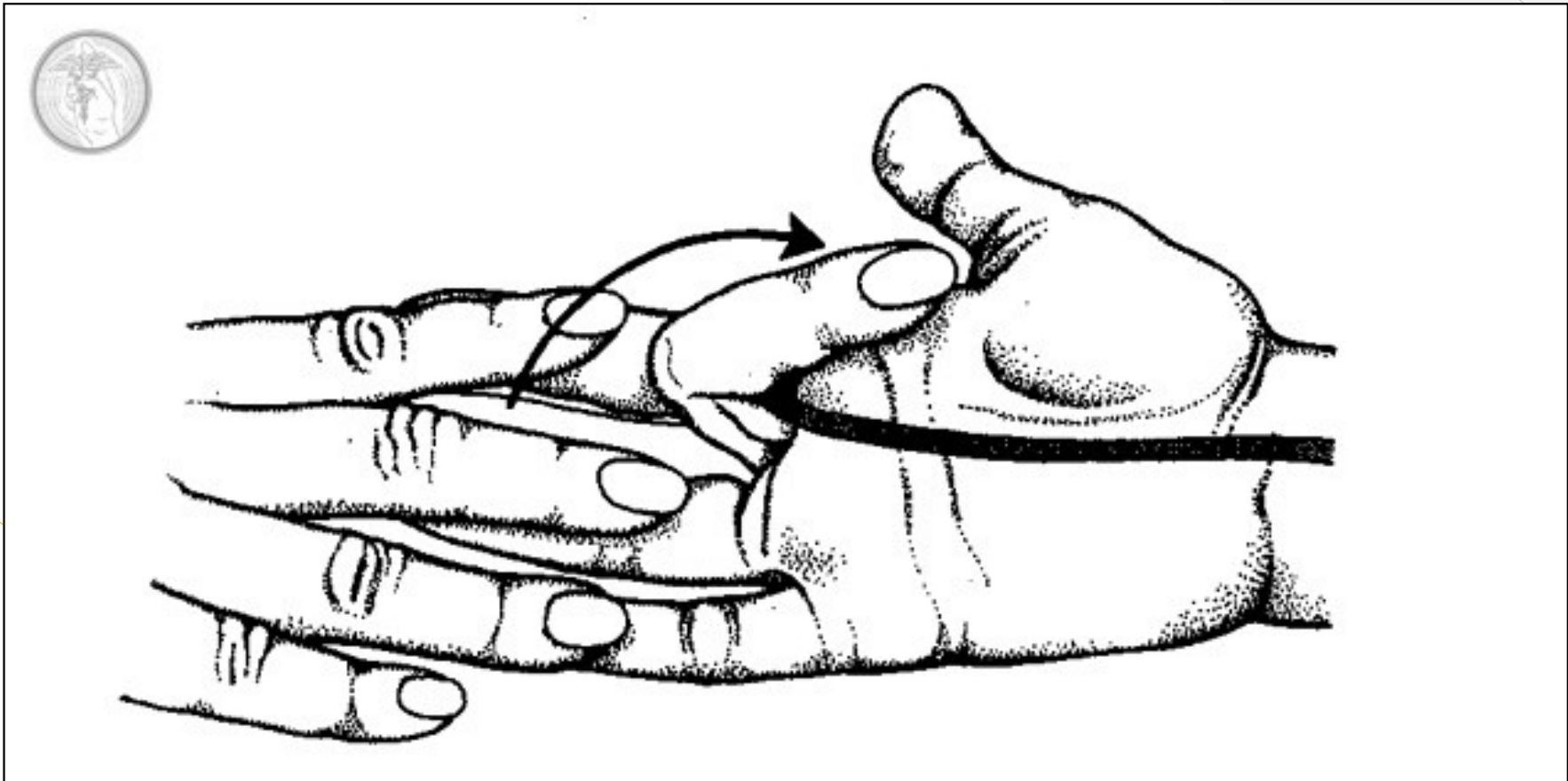
Flexor Tendon Injuries

- Note size and location of any acute wounds
- Can often predict likelihood of tendon damage just based upon location of wound & resting posture finger (loss of flexor tone)
- Painful digital flexion is suggestive of partial tendon injury





Testing for flexor digitorum profundus musculotendinous function



Testing flexor digitorum superficialis function (ulnar 3 digits FDP tendons share common muscle belly)

Emergency Room Care

- Irrigation and debridement
- Wound closure
- Update tetanus immunization
- Administer oral antibiotics
- Early referral for purpose of repair
 - Within 2 weeks ideal (4 weeks generally upper limit for primary repair)
 - 1 week for FDP avulsion injuries



FDP Avulsion (“Jersey Finger”)

- Common, esp. in athletes
- First described by von Zander (1891)
- Typically occurs in young males when playing football / rugby
 - While attempting to grasp a jersey, FDP eccentrically contracts as opponent pulls away, extending finger



FDP Avulsion

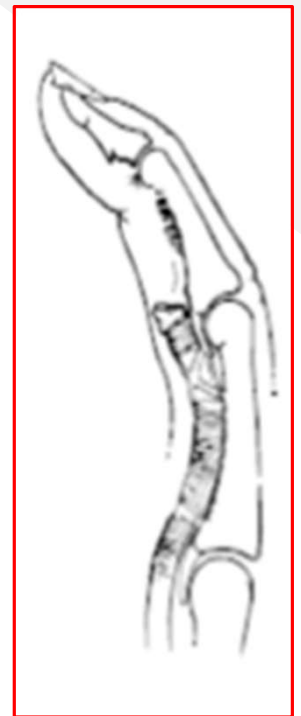
- Frequently a delay in treatment unless active DIP joint flexion tested specifically
- Majority (75%) involve ring finger, possibly because of weaker profundus tendon insertion in ring finger (Manske & Lesker, Hand, 1978)
- X-rays & clinical exam
 - Consider US or MRI if diagnosis in question



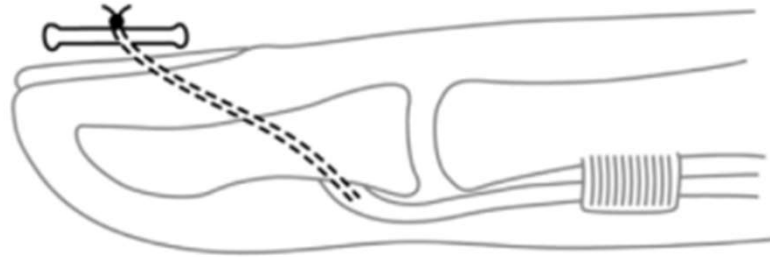
FDP Avulsion: Classification

(Leddy & Packer, J Hand Surg, 1977)

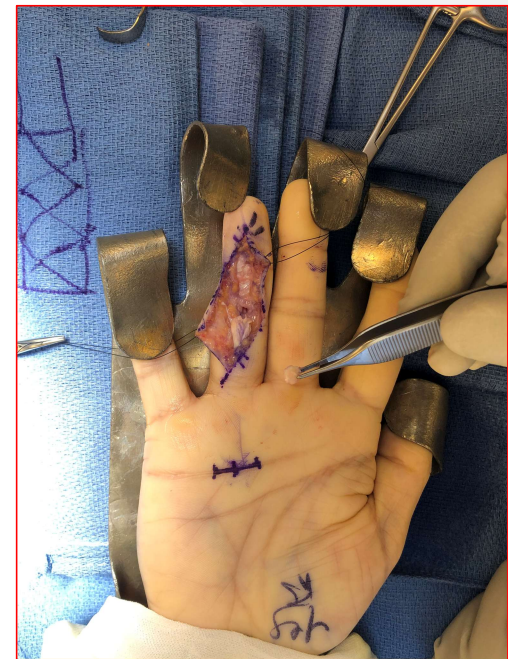
- Type I: Tendon retracts all the way into palm beneath A1 pulley, vincula rupture, synovial fluid nutrient diffusion interrupted
 - No active DIP flexion
 - Tender mass in palm
 - Reinsertion within **7-10** days before myostatic contracture occurs
- Type II: bony fragment at PIPJ
- Type III: bony fragment at A4
- Type IV: bony frag in sheath/tendon & in palm



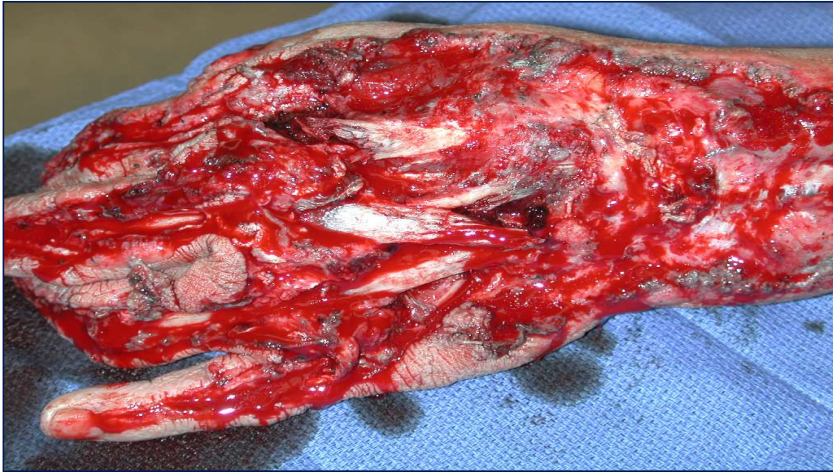
Treatment



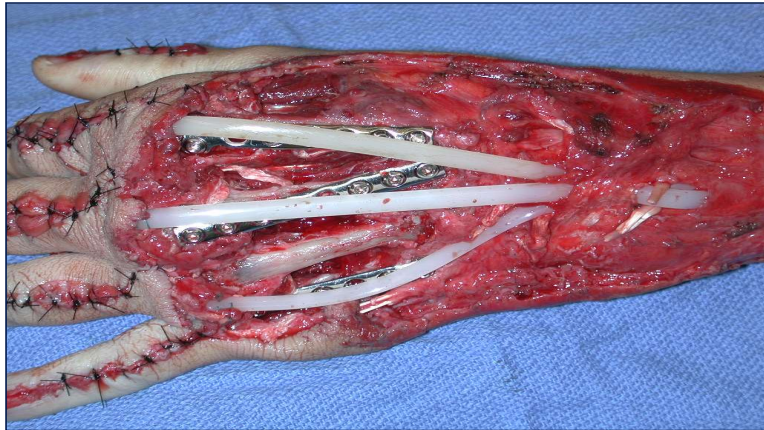
- Direct repair of tendon +/- bony fragment
- After 10 days type I injuries usually not repairable
 - Excision of FDP stump +/- stabilization of DIP joint (“FDS finger”)



F/U to 1st Case



Multiple MCP Fxs & Tendon Loss



Plates & Hunter Rods

Groin Flap for Coverage



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Summary

- Hand/finger injuries are common in the workplace
- Non-obvious injuries have the potential to be missed/neglected
- A good history and PE combined with appropriate x-rays generally leads to correct diagnosis
- Early recognition & treatment leads to better outcomes

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Thank You!





Lateral Epicondylitis

Taylor A. Horst, MD

Hand & Upper Extremity Surgeon



Disclosures

- None

Goals

- Understand history behind lateral epicondylitis
- Describe the actual pathology and cause of ECRB enthesopathy
- Understand the numerous nonoperative treatment options available
- Discuss the different surgical options available
- Understand treatment outcomes for worker's compensation patients
- Understand effective strategies to communicate with patients

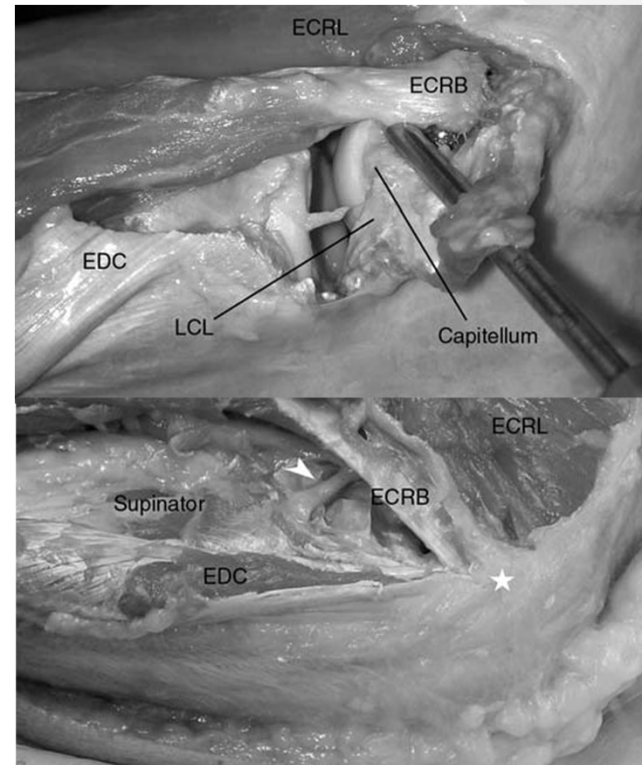
Epidemiology

- Typically an adult in the fourth and fifth decade of life (but can range from 35 to 65)
- Men and women affected equally
- More often in the dominant arm
- Goldie 1965 – attributed the onset of symptoms to overexertion of the extremity with repetitive wrist extension and alternating forearm pronation/supination
- Risk factors: ? Manual labor with heavy tools, significant strain while performing repetitive tasks



Lateral Epicondylitis

- 1% to 3% of adults every year
- First diagnosed by Runge in 1873 and labeled “lawn-tennis arm” by Major in 1883
- Attributed to degeneration of the extensor carpi radialis brevis origin

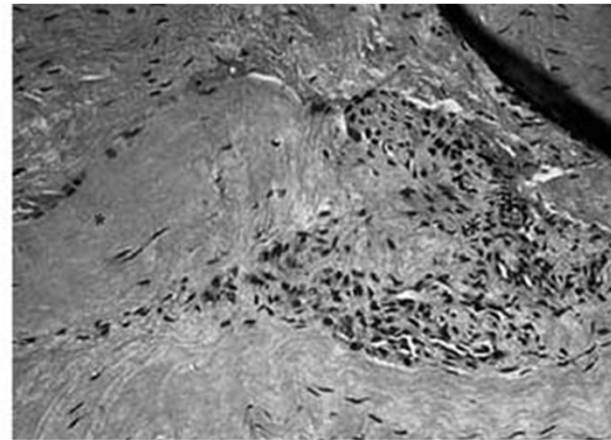
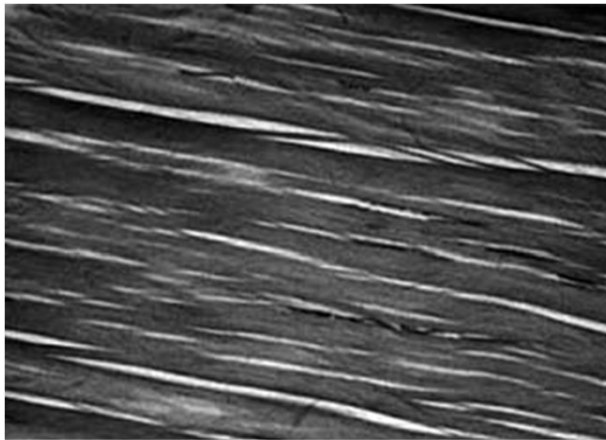


Words Matter

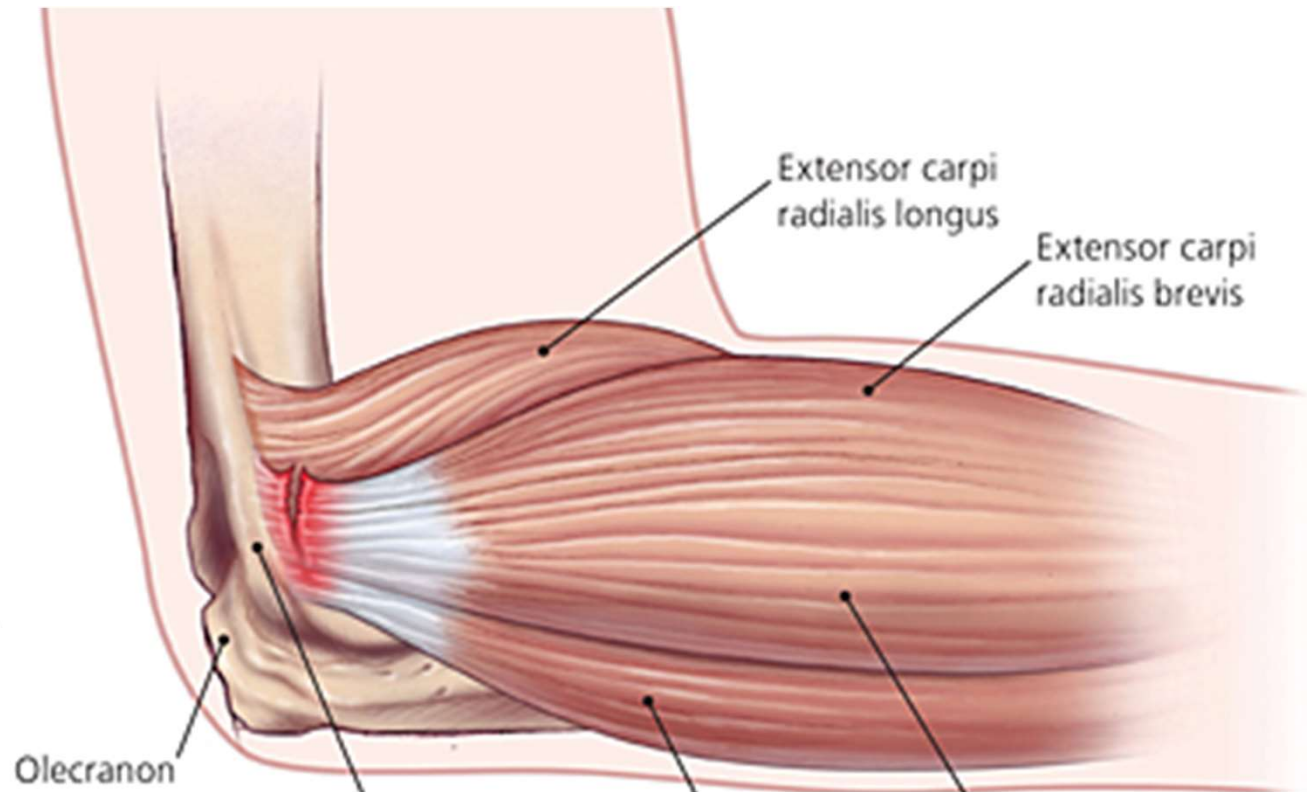
- Lateral epicondylitis
 - Refers to inflammation around the lateral epicondyle
- But pain attributed to this area is typically not inflammatory
- Better to refer to as enthesopathy
 - In this case enthesopathy of the ECRB (eECRB)

Histology

- Noninflammatory angiofibroplastic tendinosis with neovascularization
 - Disordered collagen scaffold
 - Muroid degeneration
- Consistent with pattern of microinjury and healing attempts



Anatomy



Physical Exam

- Max tenderness slightly anterior and distal to lateral epicondyle origin of the ECRB and EDC
- Pain elicited with wrist and digit extension



Outcomes

- 80% of newly diagnosed patients report symptomatic improvement at 1 year
- Only 4% to 11% who seek medical treatment will require surgical intervention
- Poor prognostic factors include:
 - Manual labor
 - Dominant arm involvement
 - Long duration of symptoms with high baseline pain levels
 - Poor coping mechanisms



Treatment

- Basic premise behind treatment is to aid or enhance natural healing
- Provide education for what “tennis elbow” is and how it resolves
- Nirschl and Asman suggested an ordered treatment progression
 - Initial control of exudation and hemorrhage
 - Promotion of tissue healing
 - Encouragement of general fitness
 - Control of force loading

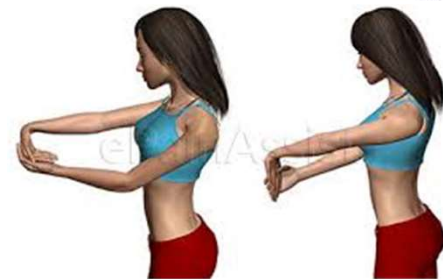
Anti-inflammatory Drugs

- NSAIDs may relieve pain from associated synovitis or acute inflammation in surrounding tissues
- Topical NSAIDS have contradictory support in the literature
- Labelle and Guibert (1997)
 - 28 days of oral NSAID vs placebo
 - Both immobilized
 - Treatment group reported less subjective pain
 - Lack of improved grip strength and GI complications led to no endorsement
- Hay 1999
 - 2 week course of naprosyn vs placebo showed no effect at 4 weeks, 6 mo, and 12 mo



Physical Therapy

- Most effective mode of therapy a matter of debate
- Classic protocol described by Nirschl
 - Increasing forearm strength, flexibility, and endurance
- Stretching of the extensor origin by bringing the wrist in flexion with the elbow extended and the forearm pronated
 - Isometric and concentric strengthening exercises



Injections

- Good for pain relief
- Several studies have compared steroid injection vs NSAIDs and placebo
 - Pain relief at 5 days to 6 weeks has been shown to be sig ($p < 0.05$) better in the steroid group than all others
 - HOWEVER, 12 wks to 12 mo results of those who received injections were the same as, OR WORSE, than those of the other treatment groups



Injections

- Reasons for worsening symptoms:
 - Injections may have weakened the tendon itself
 - Patients may have further aggravated the tendon during the relative “painless” period early after the injection
- Altay et al (2002) found no difference in outcomes at 1 year comparing lidocaine to lidocaine and steroid
- Similar results in other studies

EDITOR'S CHOICE

A Meta-Analysis of the Effect of Corticosteroid Injection for Enthesopathy of the Extensor Carpi Radialis Brevis Origin

Femke M. A. P. Claessen, MD, PhD,* Balthasar A. Heesters, PhD,† Jimmy J. Chan, BSc,*
Amir Reza Kachoei, MD,‡ David Ring, MD, PhD§

Femke et al, J Hand Surg 2016, A Meta-Analysis of the Effect of Corticosteroid Injection
for Enthesopathy of the Extensor Carpi Radialis Brevis Origin

Orthoses

- Proximal forearm band and neutral wrist splint
- Goal is to reduce tension of the extensor origin allowing time for the area to heal
- Conflict on efficacy
- Cochrane review failed to provide evidence for superiority of one over the other



Forearm Bands

- Counterforce braces
- Limit muscle expansion thus creating a new origin and effectively redirecting the muscle force
- Electromyographic analysis has shown reduced muscle activity during braced play



Neutral Wrist Splint

- Prohibit contraction of the wrist extensors
 - Provides mechanical rest to the tendinous origin
- No adequately powered studies to determine their efficacy

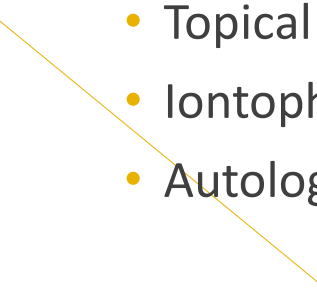


Shock Wave Therapy

- Extracorporeal shock waves (ECSWs)
 - Single-pulsed sonic waves that dissipate energy at the interface of two substances with differences in acoustic impedance
 - Mechanism by which they provide relief not well understood
- 2 RCT showed conflicting results
 - Haake et al 2002 enrolled 272 pts and showed no sig difference compared with placebo
 - Pettrone et al reported a sig difference ($p=0.001$) at 12 weeks (smaller group; 114 pts)
- Cochrane review suggested minimal benefit



Other Modalities

- CONFLICT, CONFLICT, CONFLICT
 - Non-coherent light
 - Thought to improve local blood supply
 - Low-intensity ultrasound therapy
 - Topical nitric oxide
 - Iontophoresis with dexamethasone
 - Autologous blood injection (often not covered by insurance)
- 

Coombes et al JAMA 2013

- Meta –analysis identified 22 studies performed with randomization and placebo control
 - Evaluating effectiveness of PT, multiple injection modalities, transcutaneous electrical nerve stimulation, and ESWT
- Conclusion: **NO TREATMENT** showed benefit at intermediate time of long term

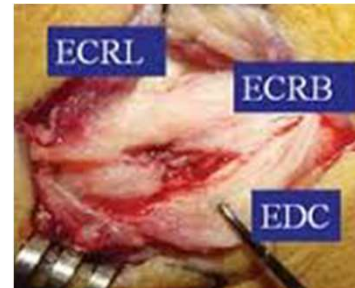
Surgical Treatment

- Indicated after at least 6 mo of failed nonop management
- Lateral fascia incised at the junction of the EDC and ECRL opening up to ECRB which lies underneath
- Degenerative tissue often present (gray hue)
- Debride tissue and decorticate epicondyle



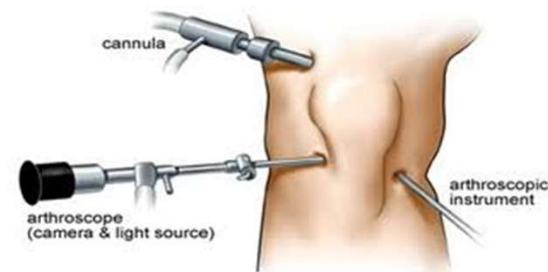
Modifications of Surgery

- Incorporation of arthrotomy
- Repair the ECRB
- Lengthen the ECRB
- Simultaneous decompression of the radial nerve
- Use of an anconeus flap to provide coverage in recurrent or chronic cases

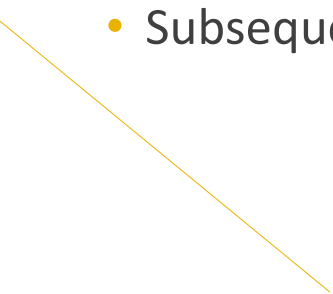


Arthroscopic Surgery

- Many variations based on surgeon
- Some prefer to debride the lateral capsule and infolded tissue that may impingement in radiocapitellar joint
- Others prefer to focus debridement on the extensor origin



Surgical Results

- Historical : Nirschl and Pettrone 1979
 - Excellent results in 66 of 88 patients
 - 11% incidence of intra-articular pathology noted
 - 97% of patients were improved after surgery
 - 85% fully resumed their preoperative activity
 - Subsequent studies have shown similar outcomes
- 

Worker's Comp Surgical Results

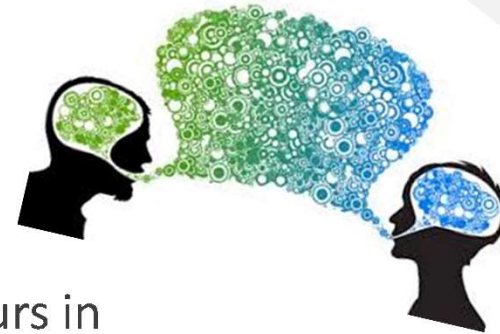
- Balch et al: compared outcomes of ECRB release between WC claimants and nonclaimants
 - At mean f/u of 51 months both groups were equally satisfied with results and pain relief
 - Fewer WC patients returned to their original or similar work status compared with non-WC patients (65% versus 77%, respectively).
 - 24% of WC patients changed jobs because of persistent symptoms versus only 4% of non-WC patients
- Grewal et al: compared outcomes of arthroscopic extensor carpi radialis brevis tendon release for recalcitrant lateral epicondylitis
 - Patients with WC claims (n = 23) took twice as long as non-WC patients (n = 13) did to return to work (24.5 versus 10.3 weeks).
 - 7 of the WC patients were unable to return to work by 42 months.
 - WC patients also scored lower on functional evaluations

Balk ML, Hagberg WC, Buterbaugh GA, Imbriglia JE: Outcome of surgery for lateral epicondylitis (tennis elbow): Effect of worker's compensation. Am J Orthop (Belle Mead NJ) 2005;34(3): 122-126.

Grewal R, MacDermid JC, Shah P, King GJ: Functional outcome of arthroscopic extensor carpi radialis brevis tendon release in chronic lateral epicondylitis. J Hand Surg Am 2009;34(5):849-857.

Communication Strategies

- Ring et al JAAOS 2016
- Effective communication to present an accurate, optimistic, and enabling disease conception
- Providing unproven treatments can medicalize a likely unavoidable temporary condition that occurs in middle age



Four Point Script

- 1). “Can I tell you how tennis elbow works?”
- 2).”For no known reason, between 35 and 65 years, tennis elbow arises in healthy people doing healthy things”
- 3). “Tennis elbow lasts about a year or so, goes away on its own, is unlikely to return, and leaves no trace”
- 4). We have been working on this for years but have no yet found a way to shorten the time it take to get better”

Summary

- Common source of morbidity in general population
- Nonsurgical measures and TIME usually provide relief
- The best predictor of outcome is the amount of daily physical strain encountered as opposed to the specific treatment rendered
- Surgical treatment only suggested in the small number of patients whom a prolonged attempt a nonsurgical treatment is unsuccessful
- WC patients tend to have decreased return to work status compared to non WC patients

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Thank You!





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Ulnar Wrist Pain

Hervey L. Kimball MD, MS
Boston Sports & Shoulder Ctr
New England Baptist Hospital



Beth Israel Lahey Health 
New England Baptist Hospital

BSSC
Boston Sports & Shoulder Center
THE HAND CENTER
SURGERY OF THE HAND & UPPER EXTREMITY

Outline

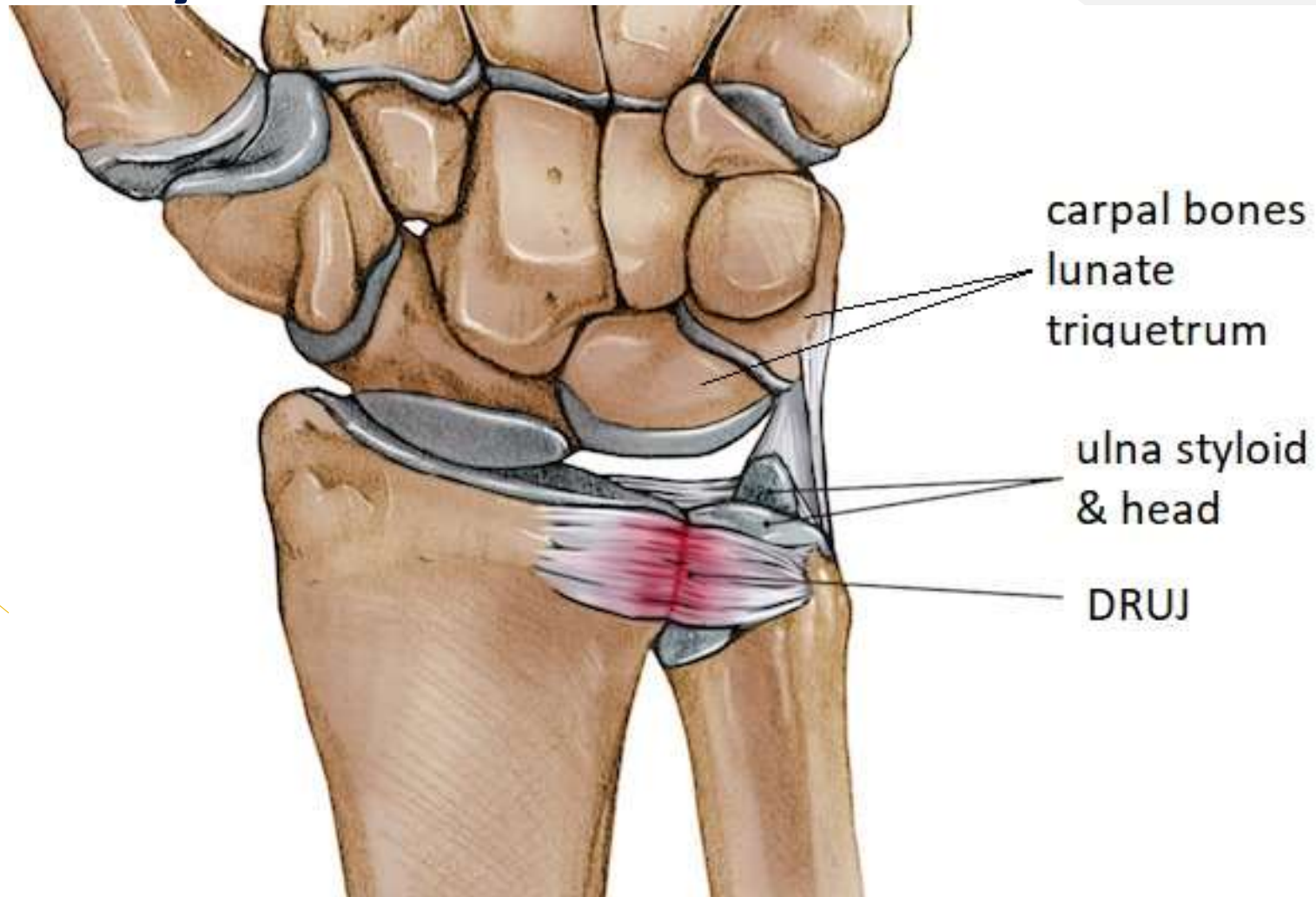
- Ulnar Wrist Anatomy
- Differential Diagnoses
- Case Examples
 - Injury vs. degenerative condition
 - Management



Anatomy

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Differential Diagnoses

- TFCC tear (acute or degenerative)
- DRUJ arthritis or instability
- Midcarpal instability
- Hamate (hook) fracture or nonunion
- Triquetrum or ulnar styloid fracture or nonunion
- Ulnocarpal impaction syndrome
- Pisto-triquetral arthritis
- Ulnar nerve entrapment Guyon canal
- Extensor and flexor tendinopathies
- Extensor carpi ulnaris (ECU) instability
- Hypothenar hammer syndrome
 - Ulnar artery

Case Presentation 1

38 yr. old Laborer

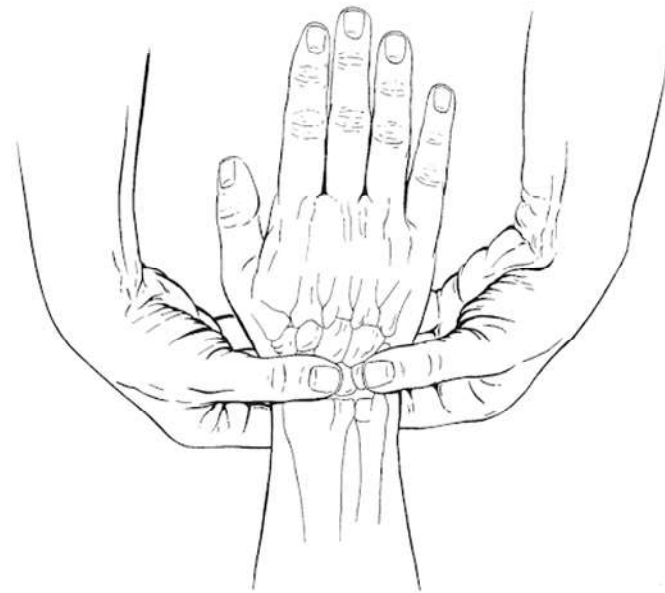
- Twisting injury to the wrist 3 months ago
- Initial treatment with splinting
- No progress with therapy



Case Presentation 1

Examination

- Ulnar wrist tenderness
- Fovea sign positive
- DRUJ stable



Case Presentation 1

- Radiographs
 - normal



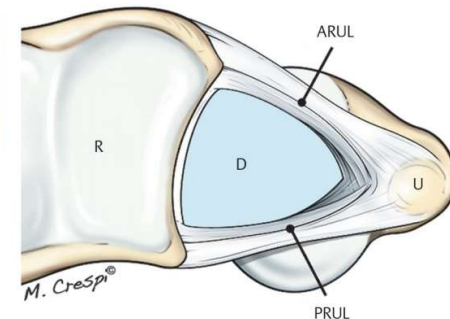
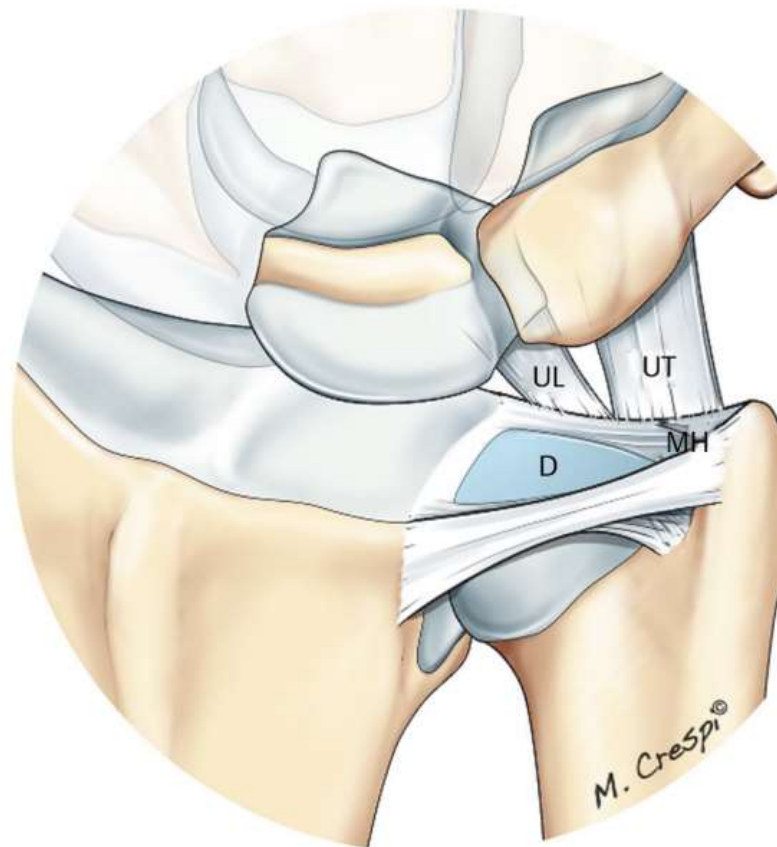
Case Presentation 1

- MRI
 - TFCC tear



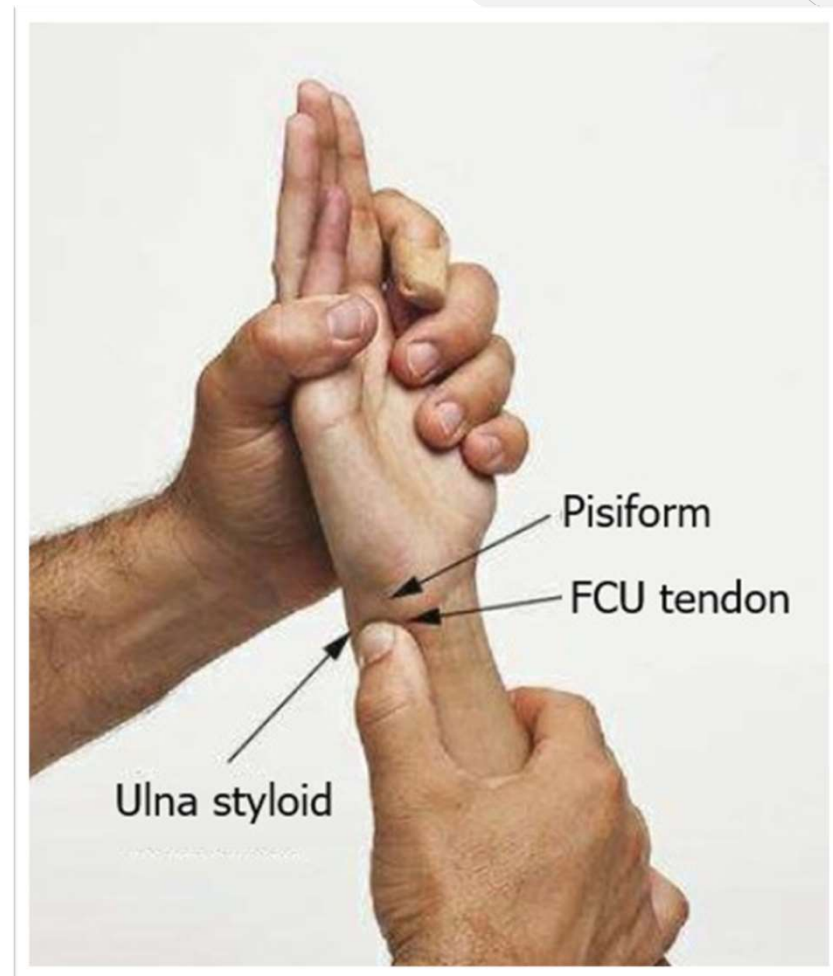
Triangular Fibrocartilage Complex

- Articular Disc
- Radioulnar ligaments
- Meniscal homolog
- ECU subsheath
- Ulnocarpal ligaments



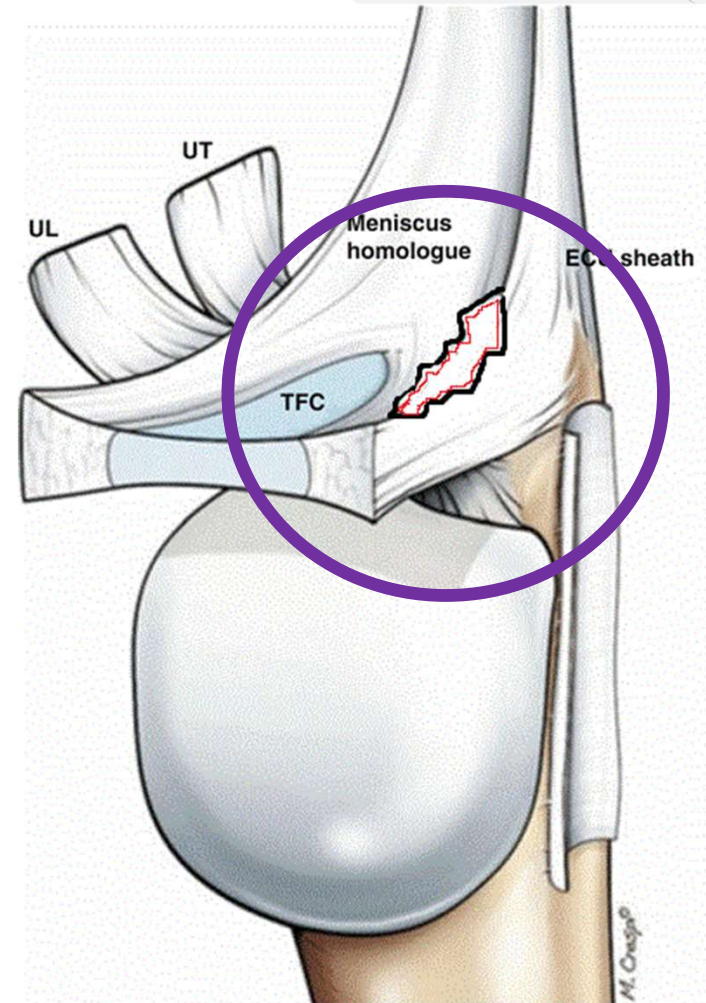
TFCC Injury: Exam

- Ulnar wrist pain with grip
- Wrist clicking +/-
- Ulnar wrist tenderness
- Pain with prono-supination
- Foveal sign



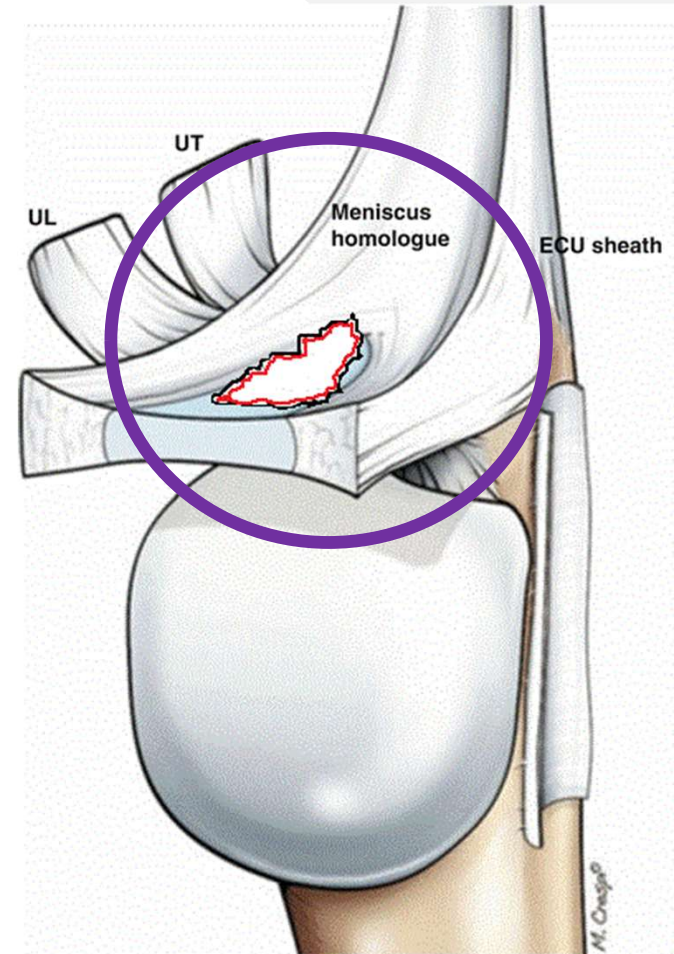
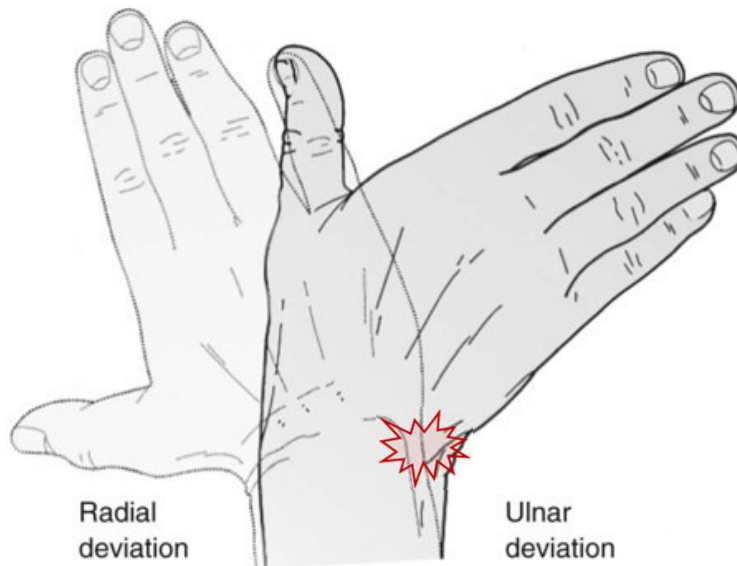
TFCC Injury: Traumatic

- Acute Injury
 - Fall on wrist pronated
 - Peripheral tear location



TFCC Injury: Degenerative

- Chronic Injury
 - Ulnar positive variance
 - Central tear location



TFCC Injury: Diagnostic Tests

- MRI
- Arthrogram



TFCC Injury: Nonoperative Management

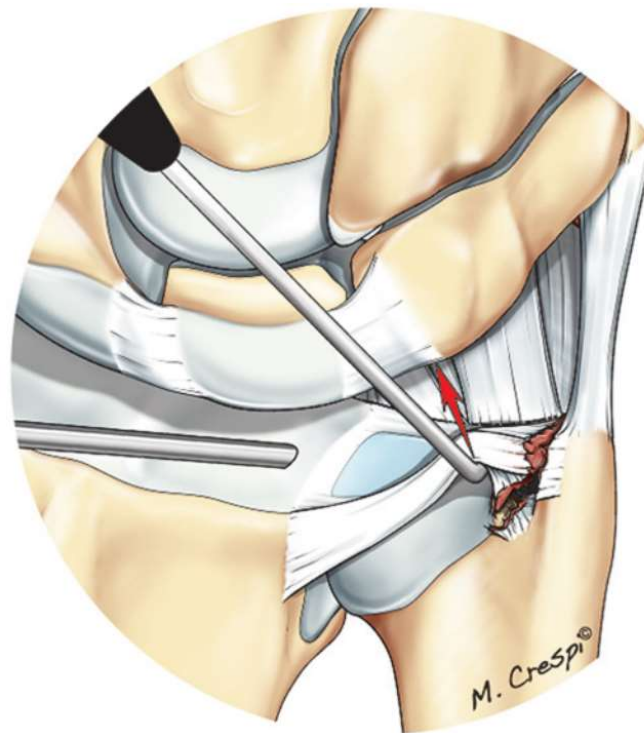
- Cast 4-6 weeks
- Transition to:
Wrist splint, strap or taping
- Therapy
- Cortisone injection



TFCC Surgical Treatment

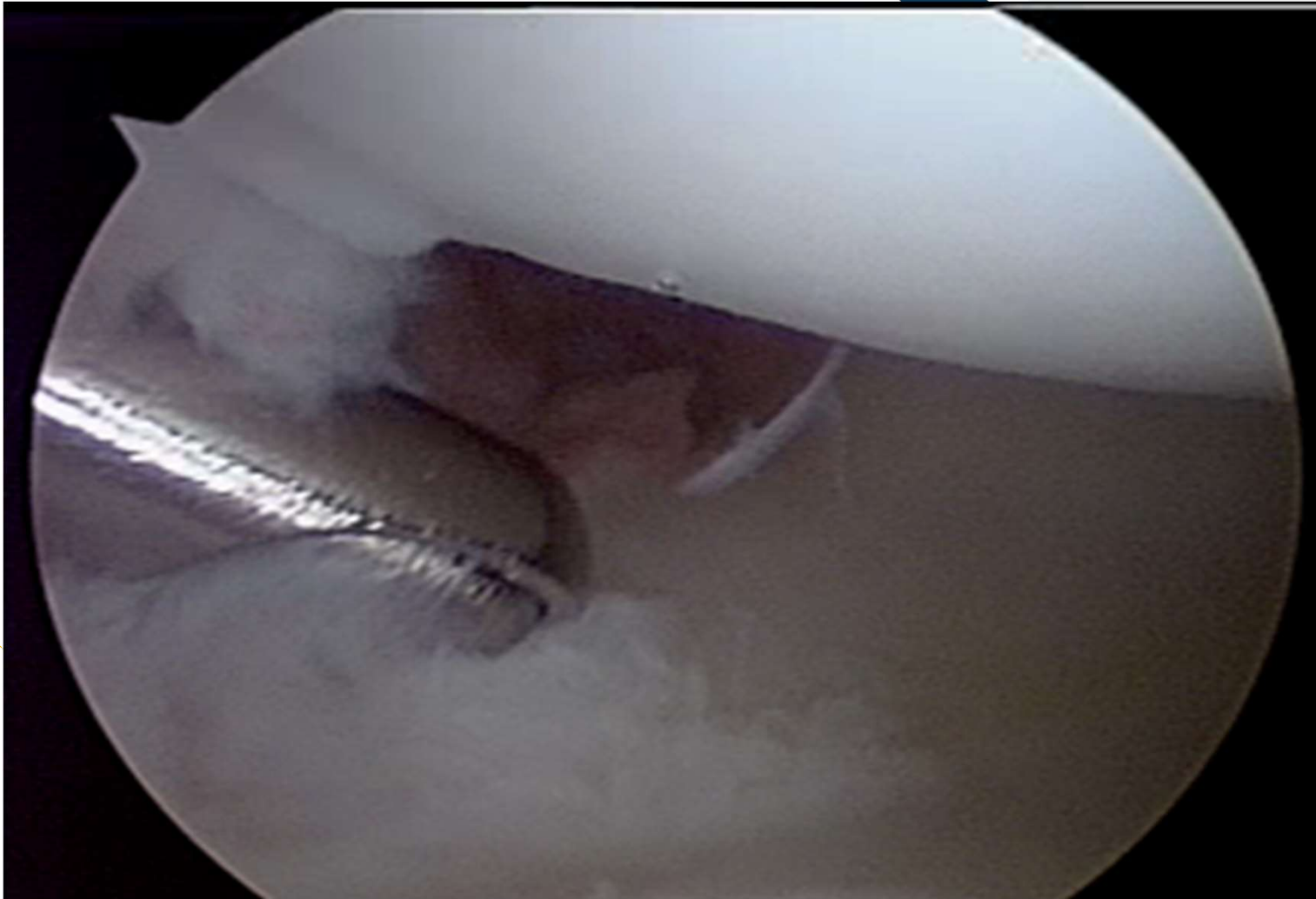
Wrist arthroscopy

- **Peripheral tear** : Repair
 - Post op 3-6 wks. in cast
- **Central tear** : Debride
 - 2 to 4 weeks SAC



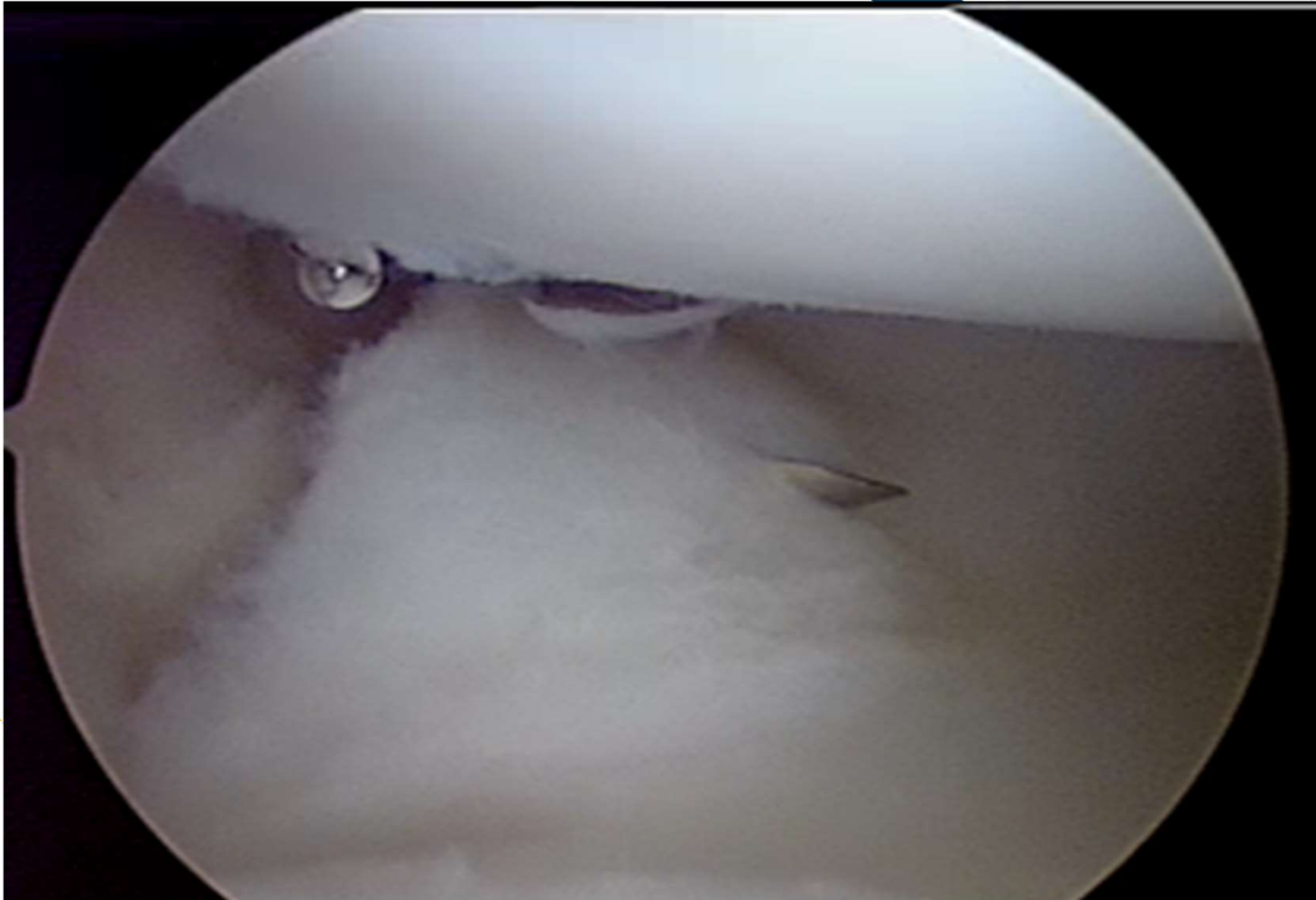
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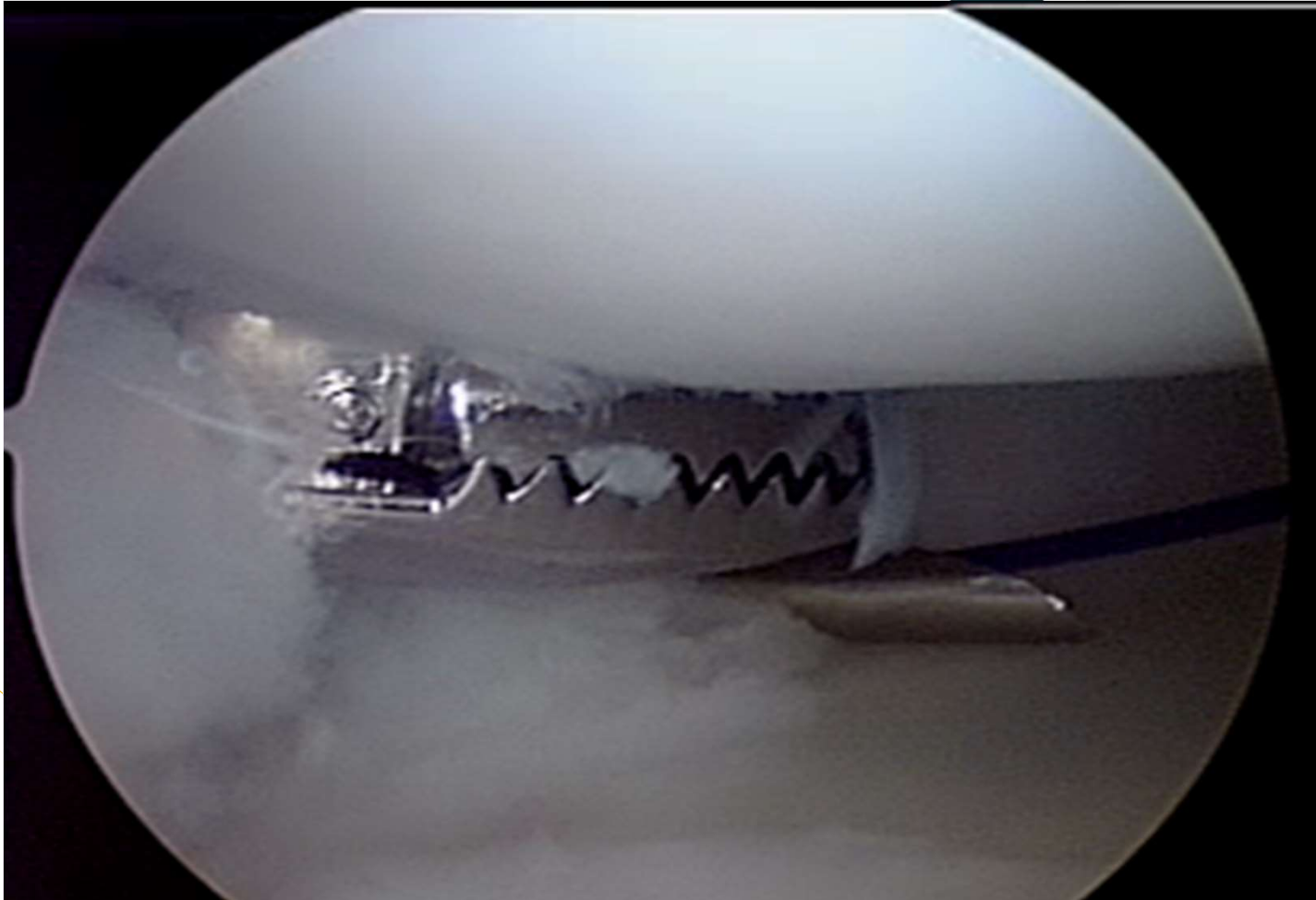
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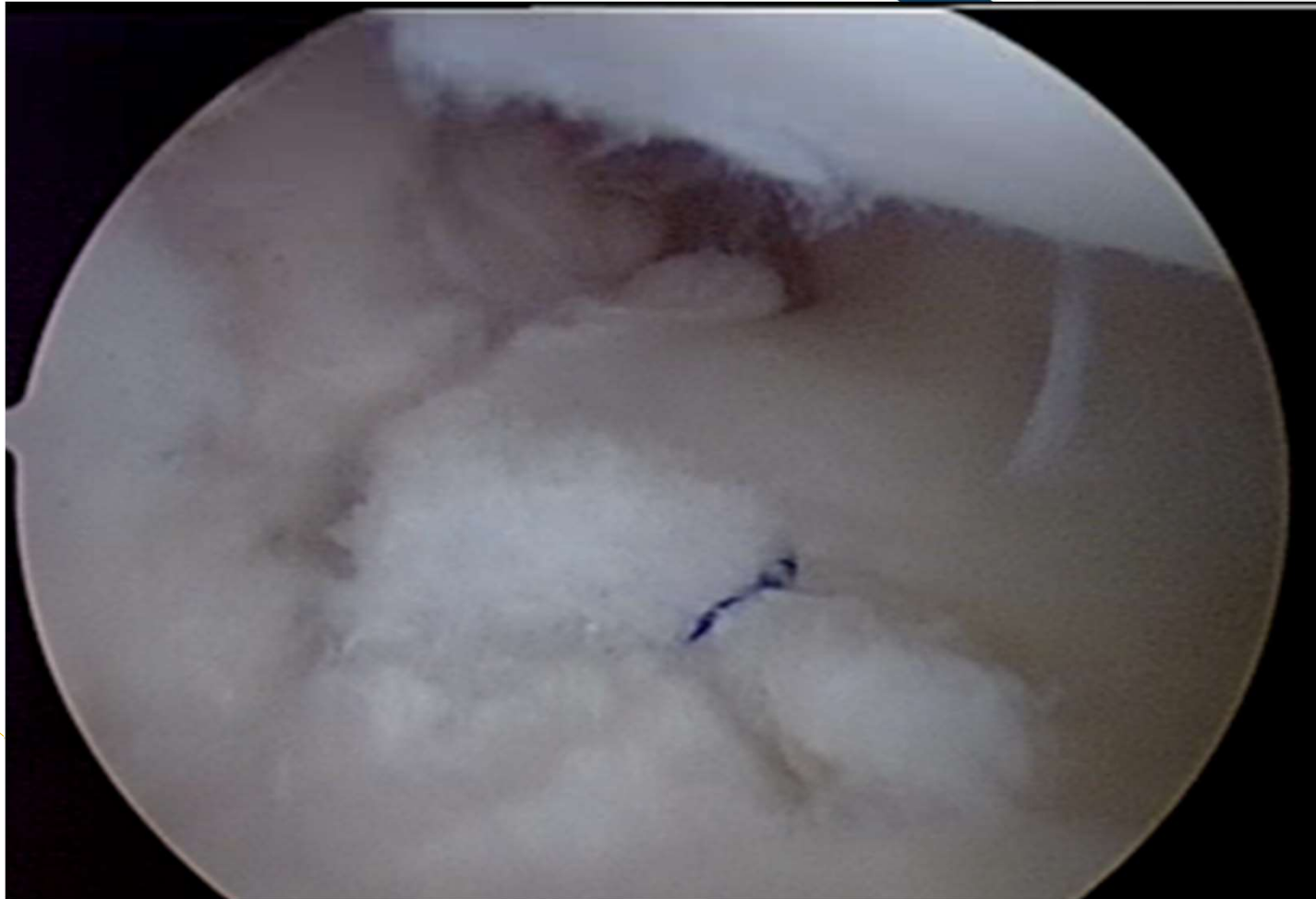
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Case Presentation 2

48 yr. old Librarian

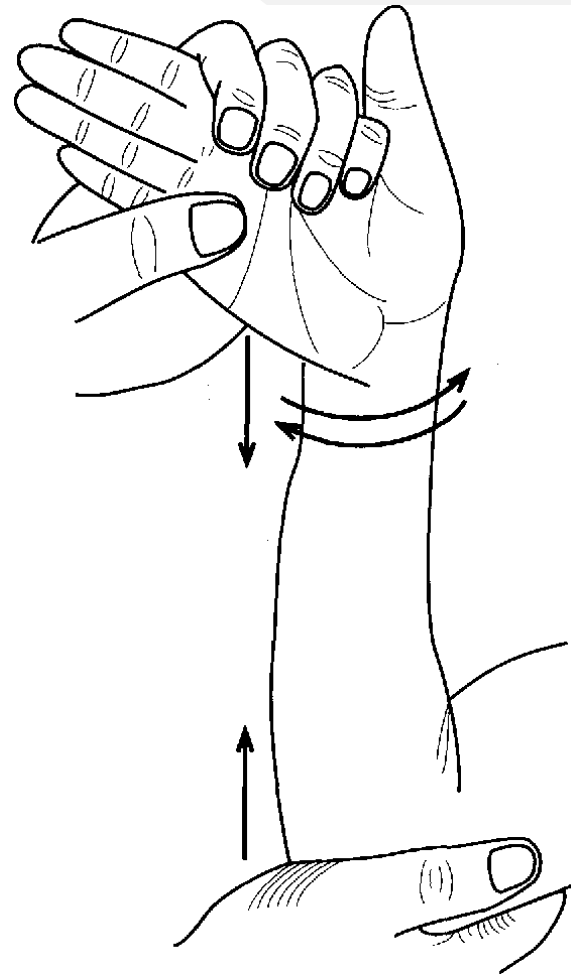
- Lifting books and computer use
- Ulnar sided wrist pain
- Initial treatment with splinting
- No progress with therapy



Case Presentation 2

Examination

- Ulnar wrist tenderness
- Pain with ulnar deviation
- DRUJ stable



Case Presentation 2

Radiographs

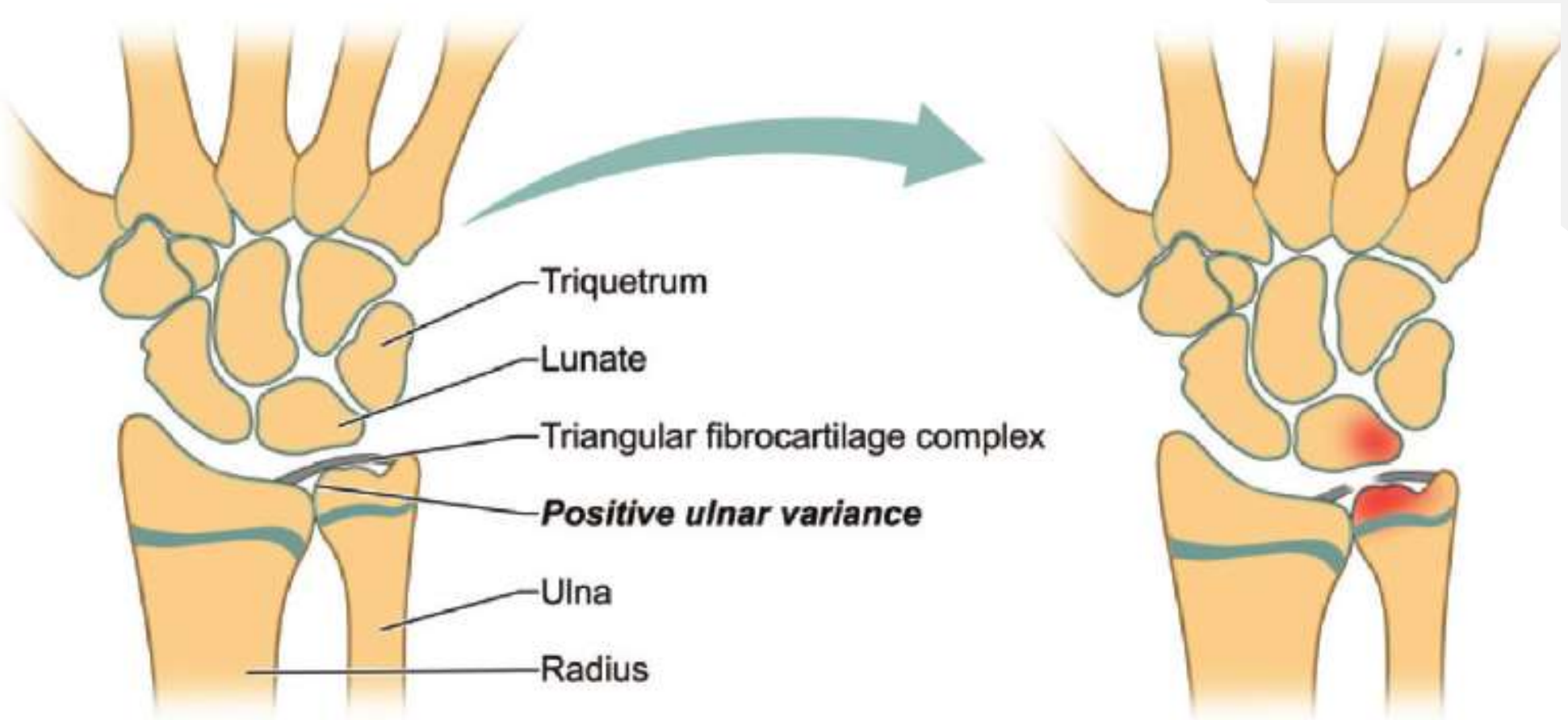


Case Presentation 2

MRI



Ulnocarpal Impaction Syndrome



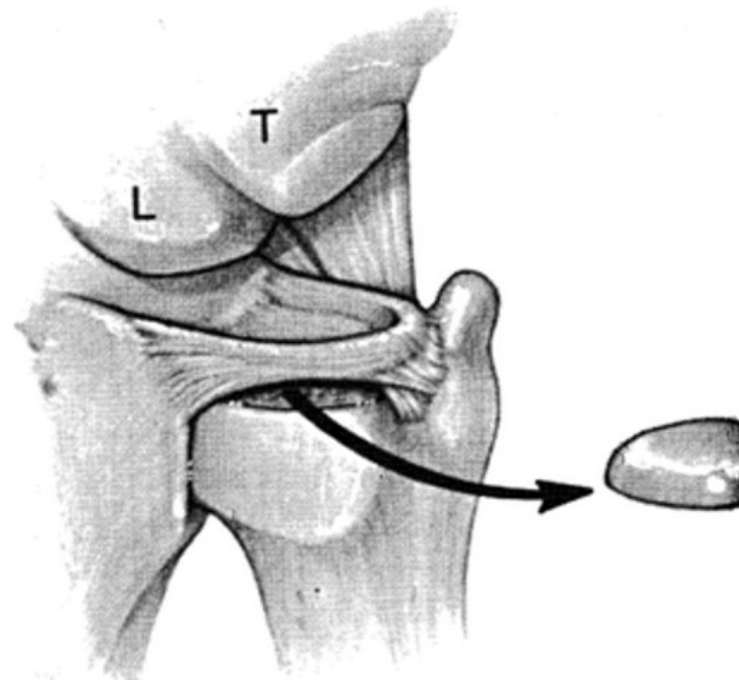
Ulnocarpal Impaction: Treatment

- Nonoperative
 - Splinting
 - Intra-articular cortisone injection



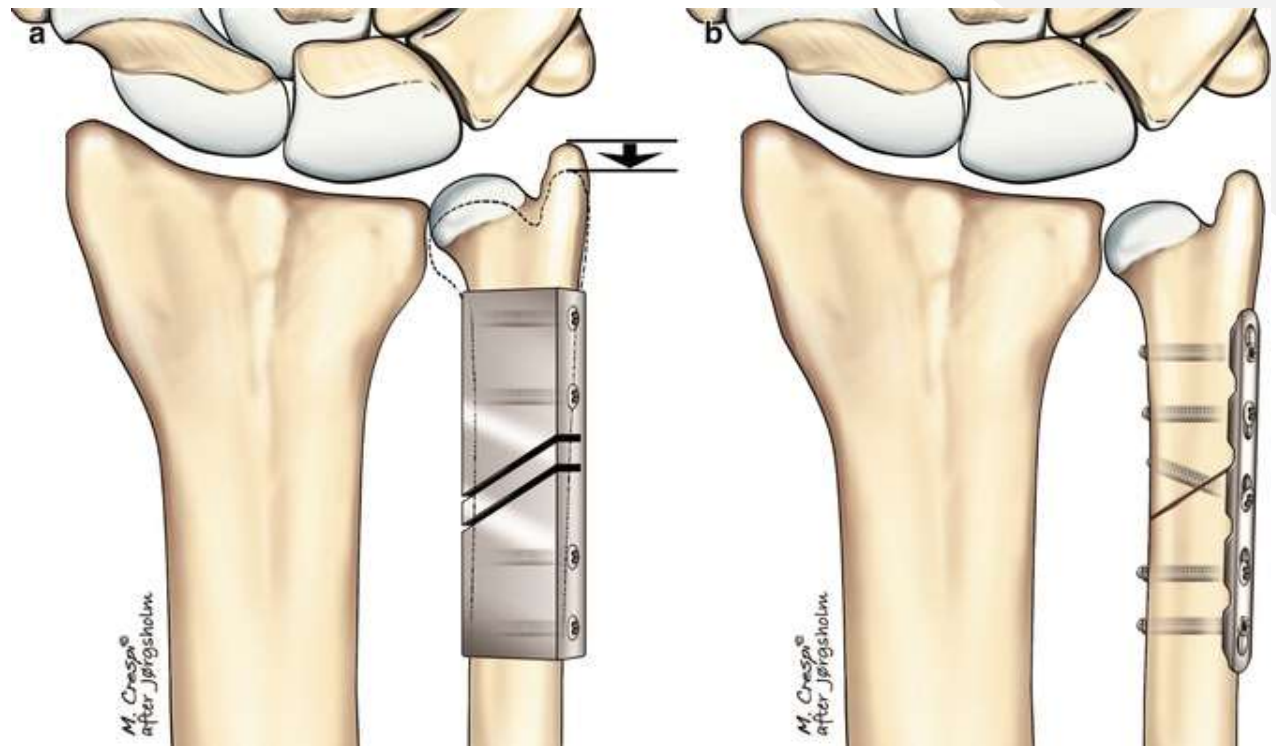
Ulnocarpal Impaction: Surgery

- Ulnar Shortening
 - Wafer Procedure
 - Shaft Osteoplasty

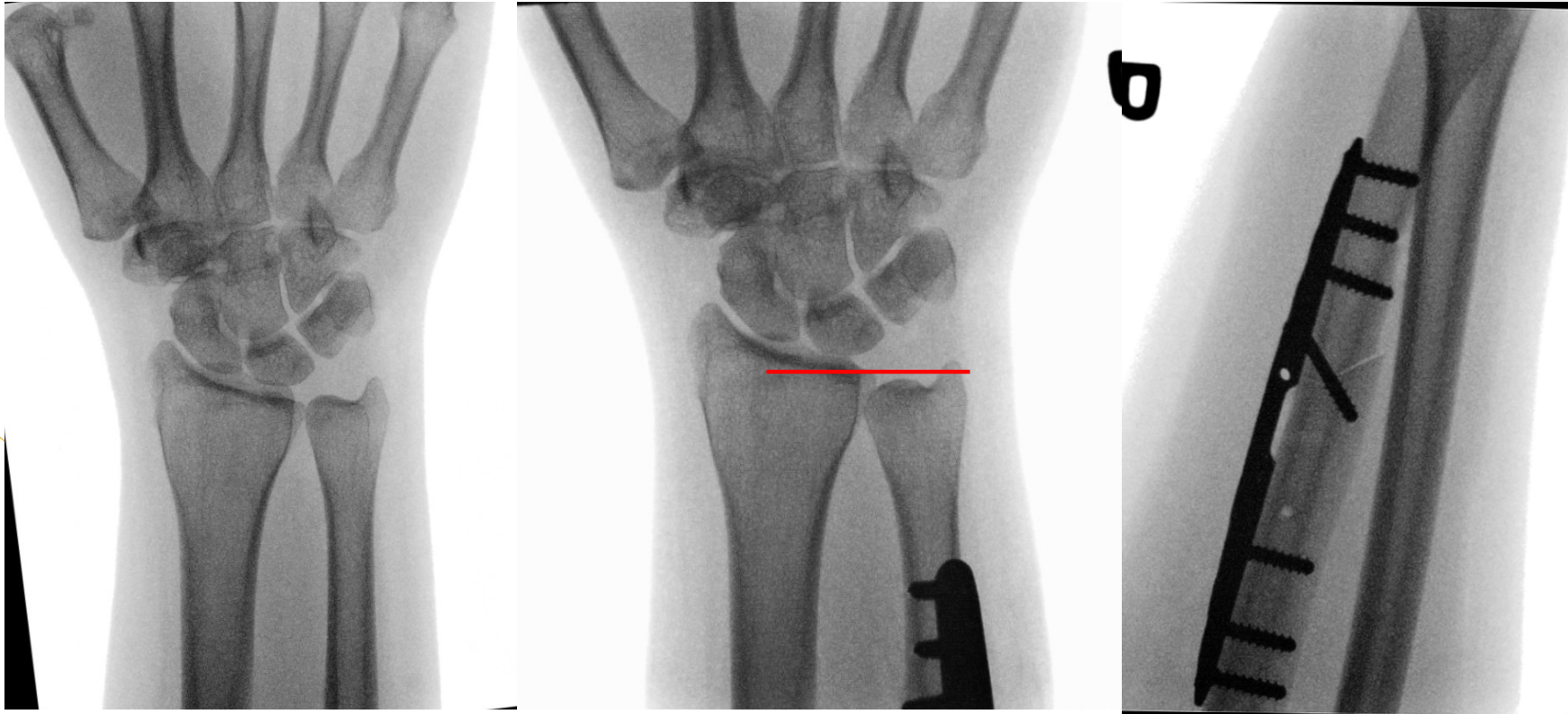


Ulnocarpal Impaction: Surgery

- Ulnar Shortening
 - Wafer Procedure
 - Shaft Osteoplasty



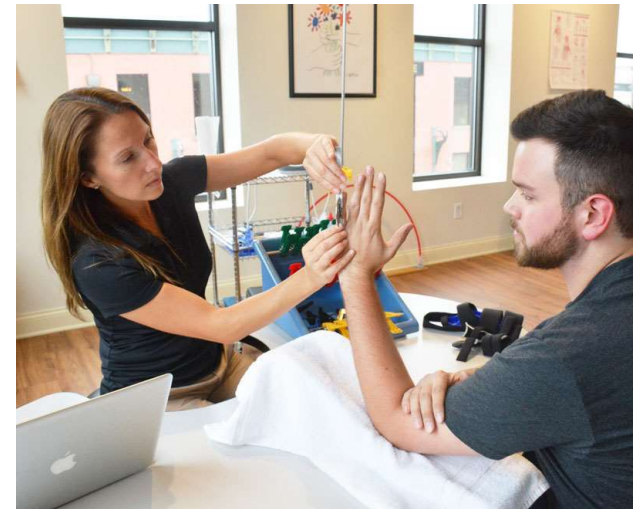
Ulnar Shortening



Ulnar Shortening

Post-operative

- Cast 4 weeks
- Splint additional 2 weeks
- Hand therapy with strengthening
- Return to full duty 3-6 months



Summary

- Ulnar sided pain common
 - traumatic vs. degenerative
 - other causes: nerve, ulnar artery
- MRI TFCC abnormalities are common
- Most patients can be managed w/o surgery



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Thank You!

BSSC
Boston Sports & Shoulder Center

THE HAND CENTER

SURGERY OF THE HAND & UPPER EXTREMITY



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Hand & Wrist Treatment Case Discussion- Panel

- Ed Moriarty- Attorney
- Fay Gallant
- Colleen Medlin, PT
- Andy Stein, MD
- Taylor Horst, MD
- Hervey Kimball, MD

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Hand & Wrist Treatment- Cases

Case

- History
- Physical exam
- ? Imaging
- Work Status
- Insurance

Case- History

- Age?
- Job
 - Office worker? Assembler? Occ Health nurse?
- Injury
 - yes/no
- Prior symptoms, treatment
 - Yes/no
- Numbness tingling- document often comes up later

Case- Exam

- What is important?
 - Similar presentations
- 

Case- Imaging

- X-ray
 - When?
 - First visit?
 - If no response?
 - If h/o injury?
- MRI
 - When?

Causation



Causation-

- AMA guide on Causation 2014
- 

Return to Work

- How to determine
 - Preop
 - Postop
- When
- Modified
 - What if patient states there is none
 - What if none
- Full
- I can't do it Doc!!

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CASES EXPLAINED

Case

- 49 year old right hand man with lateral elbow pain
- 4 weeks ago he banged the lateral elbow on the corner of a wall as he walked by
- H/o Lateral epicondylitis 10 years ago treated nonoperatively including one injection

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Case- exam



Case- Issues

- Causation
 - Pre-existing or new
- Treatment
 - Is there “traumatic epicondylitis”
 - When PT, inject, surgery
 - RTW Modified, Full

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CASES EXPLAINED

Case 3

26M RHD s/p Crush Injury (concrete slab) to Left Hand

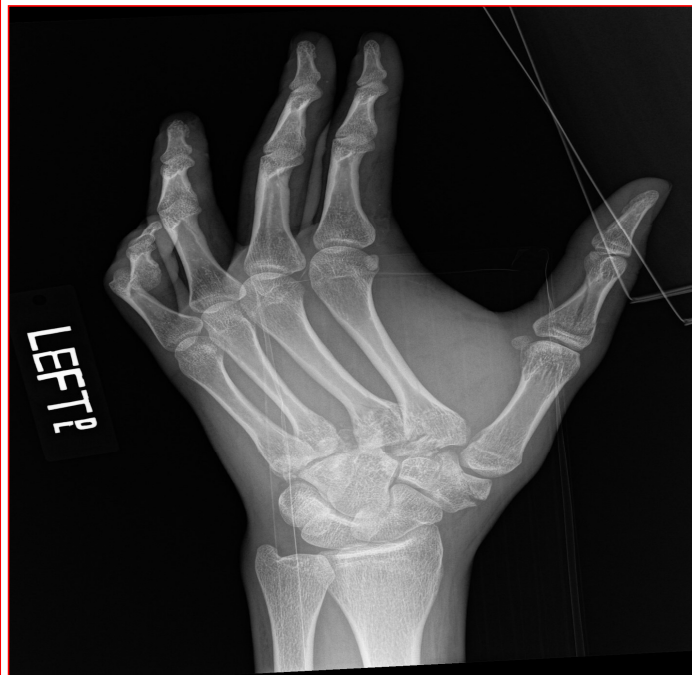


- Andrew B. Stein, MD

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Initial X-rays



Initial management

- Thumb spica short arm cast
- Small finger PIP closed reduction with alumifoam splint
- Because of massive swelling & hemorrhagic fracture blisters managed closed initially



At 6-week clinic follow-up:

- Left ring finger malrotated



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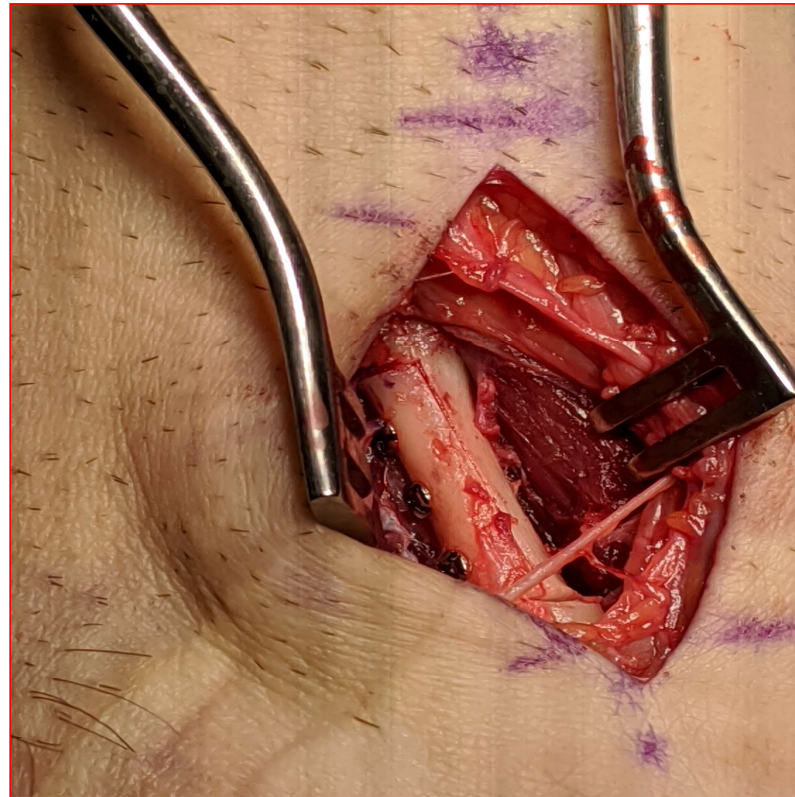
PO X-rays



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Treatment: Step-cut rotational osteotomy



6 weeks post-op

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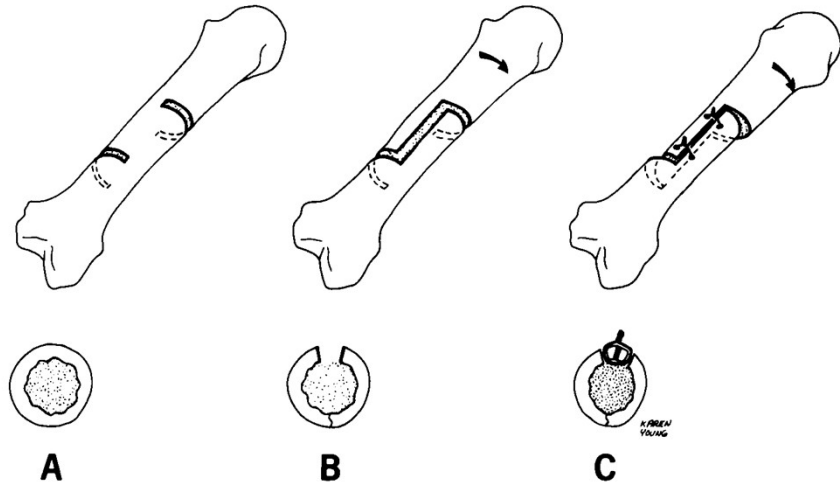


Step Osteotomy: A Precise Rotation Osteotomy to Correct Scissoring Deformities of the Fingers

Ralph T. Manktelow, M.D., F.R.C.S.(C), and James L. Mahoney, M.D.

Toronto, Ontario, Canada

- 1980: study describes metacarpal step-cut osteotomy
 - Initial study on 22 cadaveric metacarpals, followed by 10 patients
 - Removal of 1mm dorsal cortex allowed for ~1mm correction at fingertip
 - Replicated by Pichora et al. (J Hand Surg 1991)



Modified Step-Cut Osteotomy for Metacarpal and Phalangeal Rotational Deformity

Andrew Jawa, MD, Maura Zucchini, MD, Guilio Lauri, MD, Jesse Jupiter, MD

- 2009 study using modified Manketelow & Mahoney's technique
- 2000-2007, 15 patients (ages 14-55) treated for scissoring deformity
- 12 patients included in study due to complete follow-up
 - Average 25 months

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CASES EXPLAINED

Ulnar Wrist Pain Case History- EH

- 38 y.o. RHD woman laborer
- She was injured at work 3 wks. prior to evaluation
- She was working with a fire hose and had a hyperextension injury
- She was treated in a prefab splint

EH History

- She complained of ulnar wrist pain
- She did not have any mechanical symptoms (i.e. clicking, locking)
- She did not have any prior wrist problems
- **H/O bipolar disorder**

EH

Physical Exam

- Examination was **difficult** to isolate pain
- She had mild wrist swelling
- ROM of the wrist was 45/35 (with pain)
- Full pronation and 10° loss of supination with pain
- There was no DRUJ instability
- The ECU tendon was normal w/o subluxation

Case EH

X-rays- Initial

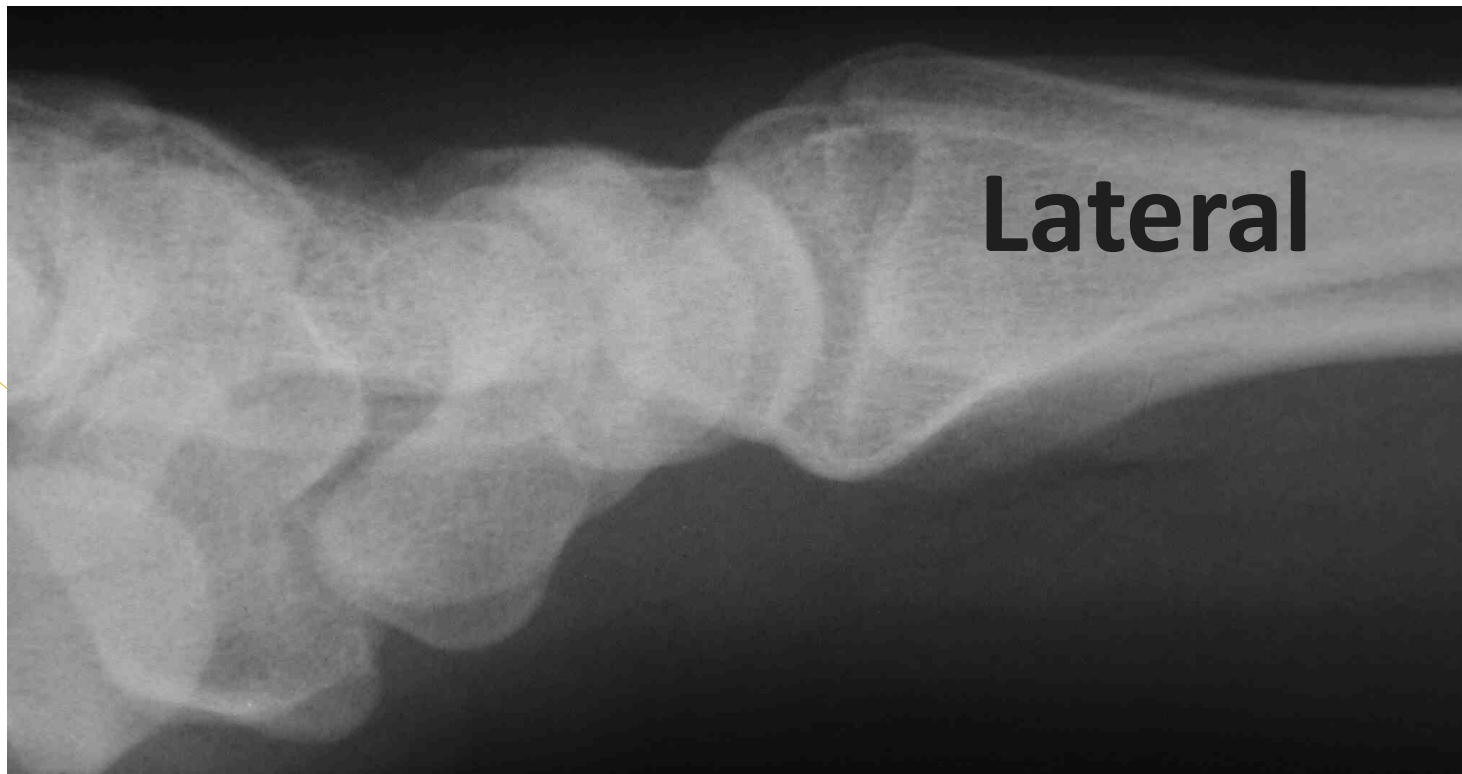
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Case 2

X-rays- Initial

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Case EH Treatment


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- Failed LACast and SACast
- She still complained of pain, **globally** and had ulnar wrist tenderness

Case EH

Treatment

- She was placed in a short arm wrist splint
 - An MR Arthrogram was ordered
- 

Case EH

MRI-Arthrogram

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TFCC tear



Case EH

Treatment

- Arthroscopy debride TFCC
- Still pain

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Case EH

Treatment

- Wafer ulnar shortening (? Pre-existing)
- Wrist ROM 60/55, 30/45, full rotation. Grip equal.
- Complains of achy pain with strenuous use
- Significantly improved

Post op



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CASES EXPLAINED



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Case 1- Hand Injury

**43M RHD s/p Nailgun Injury to Left SF PIP
Joint**

Injury Films

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4 Month F/U



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4 Months s/p Surgery



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Reference



The Journal of Hand Surgery

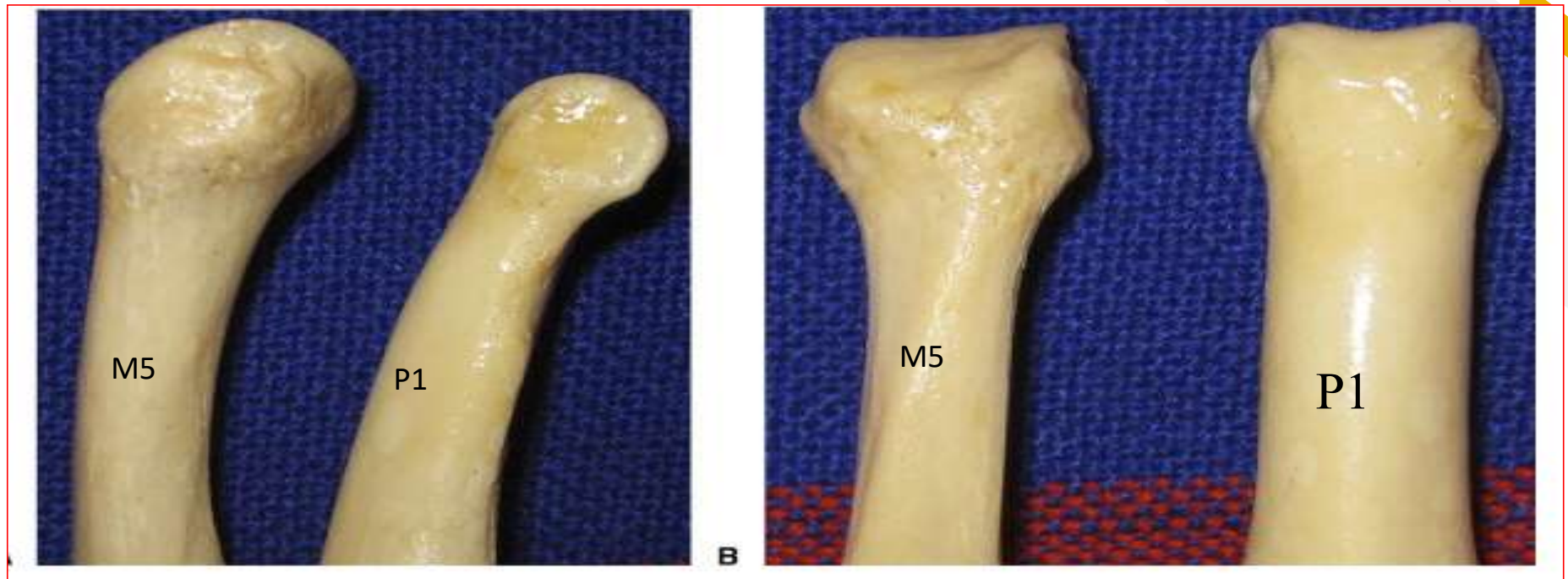
Volume 35, Issue 8, August 2010, Pages 1275-1281



Scientific article

Reconstruction of the Condyles of the Proximal Phalanx With Osteochondral Grafts From the Ulnar Base of the Little Finger Metacarpal

Pedro C. Cavadas MD, PhD  , Luis Landin MD, Alessandro Thione MD, PhD



Measurements in 15 cadavers

Base of M5 radius of curvature: 5.6mm (range 4.7-7.2)

Condyles of P1 of IF & LF: 4mm (“Suitable Donor”)

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The Journal of Hand Surgery

Volume 35, Issue 8, August 2010, Pages 1275-1281



Scientific article

Reconstruction of the Condyles of the Proximal Phalanx With Osteochondral Grafts From the Ulnar Base of the Little Finger Metacarpal

Pedro C. Cavadas MD, PhD  , Luis Landin MD, Alessandro Thione MD, PhD

15 patients (16 digits) treated with mean f/u 4.8 yrs.

Mean arc of active motion 60° (20° - 100°)

No deterioration over time

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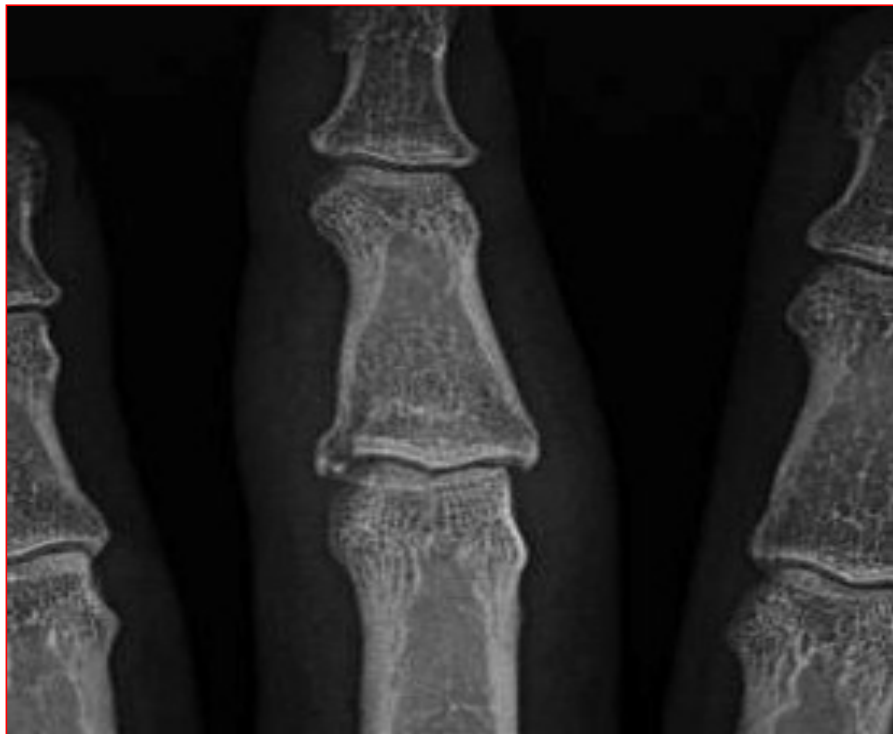
CASES EXPLAINED

Case 2

25 RHD M FOOSH: R LF

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Treatment: Extension block pinning





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