Common Hand and Wrist Conditions

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Sports Medicine : Art

Subjective History is unreliable

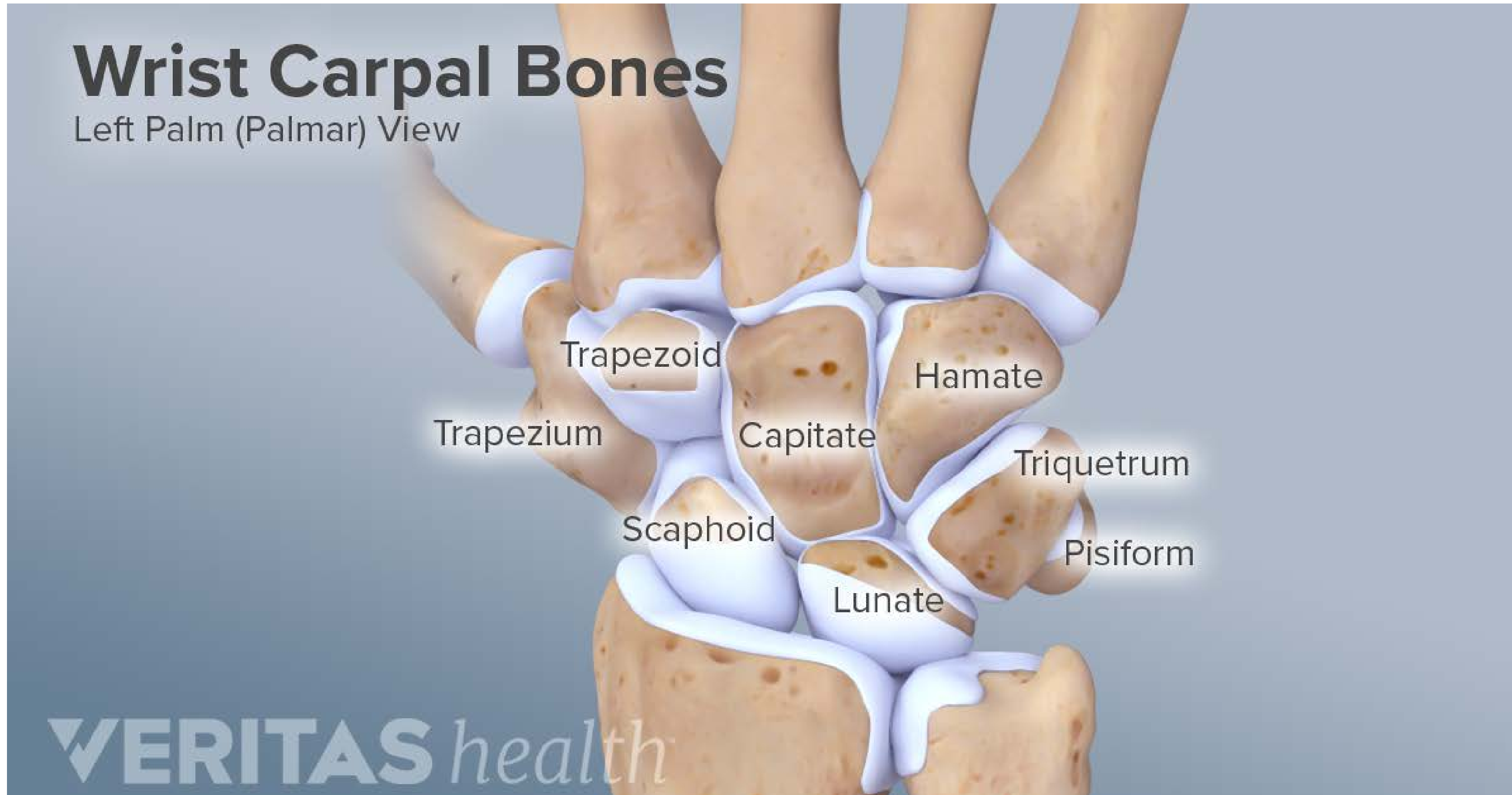
Specific Tests can be unrealiable

Imaging is unreliable

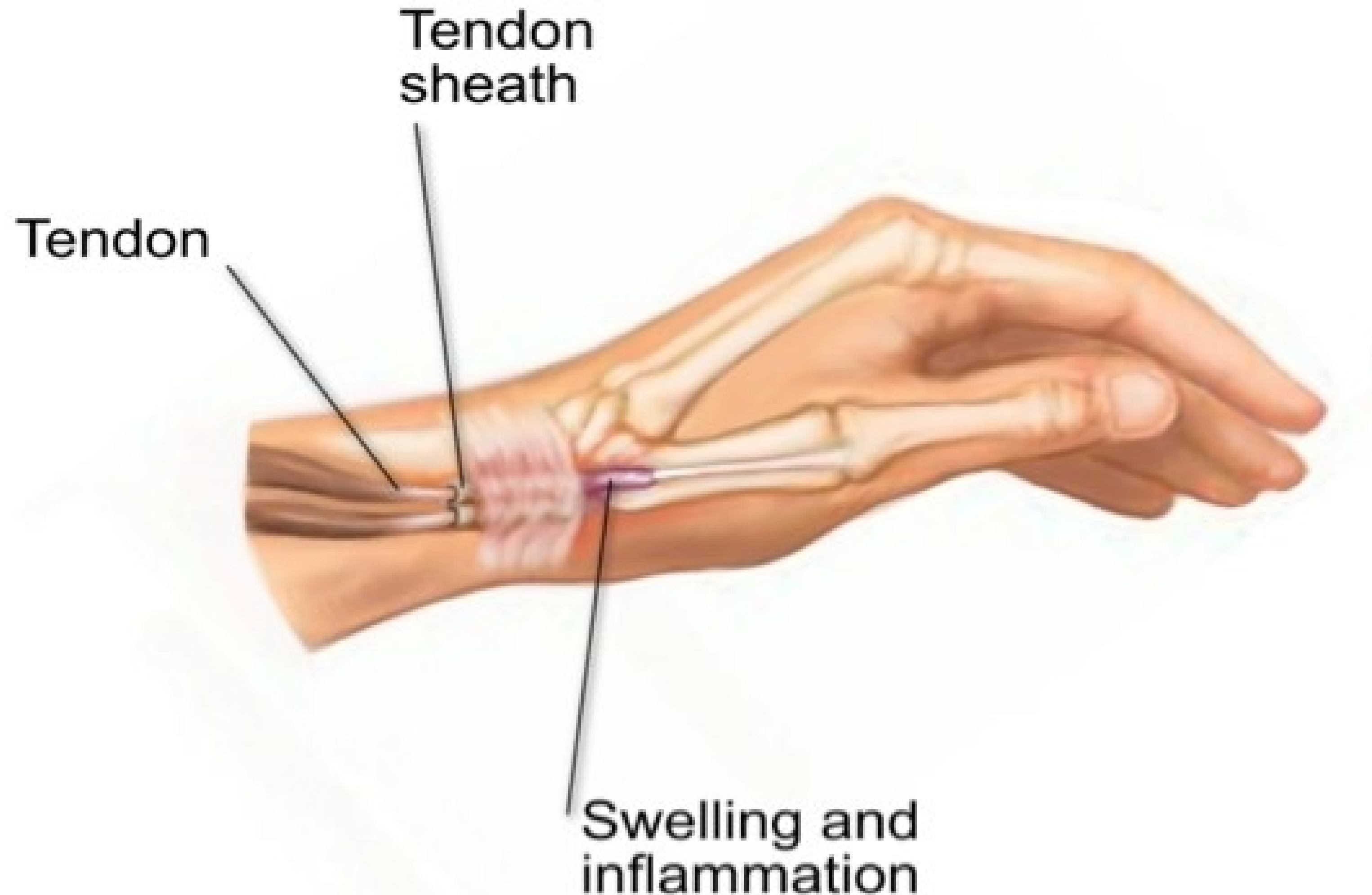
Anatomy/confidence and physical exam findings are key

Anatomy

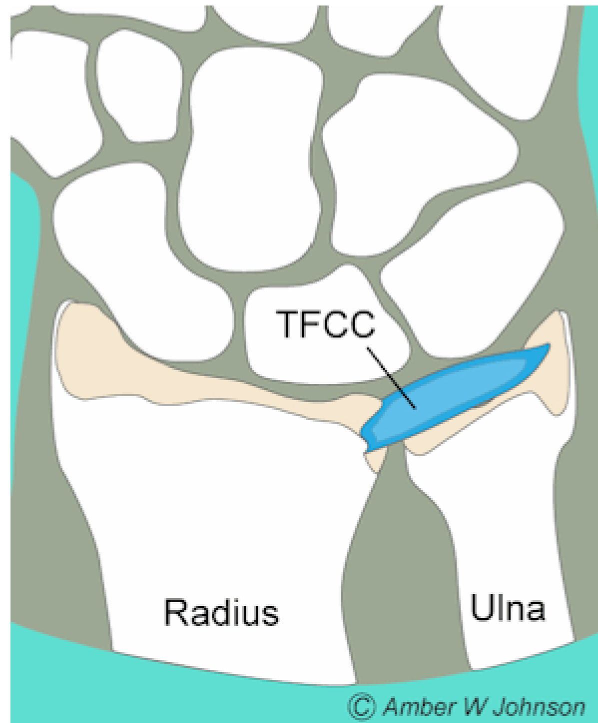
Wrist Bones



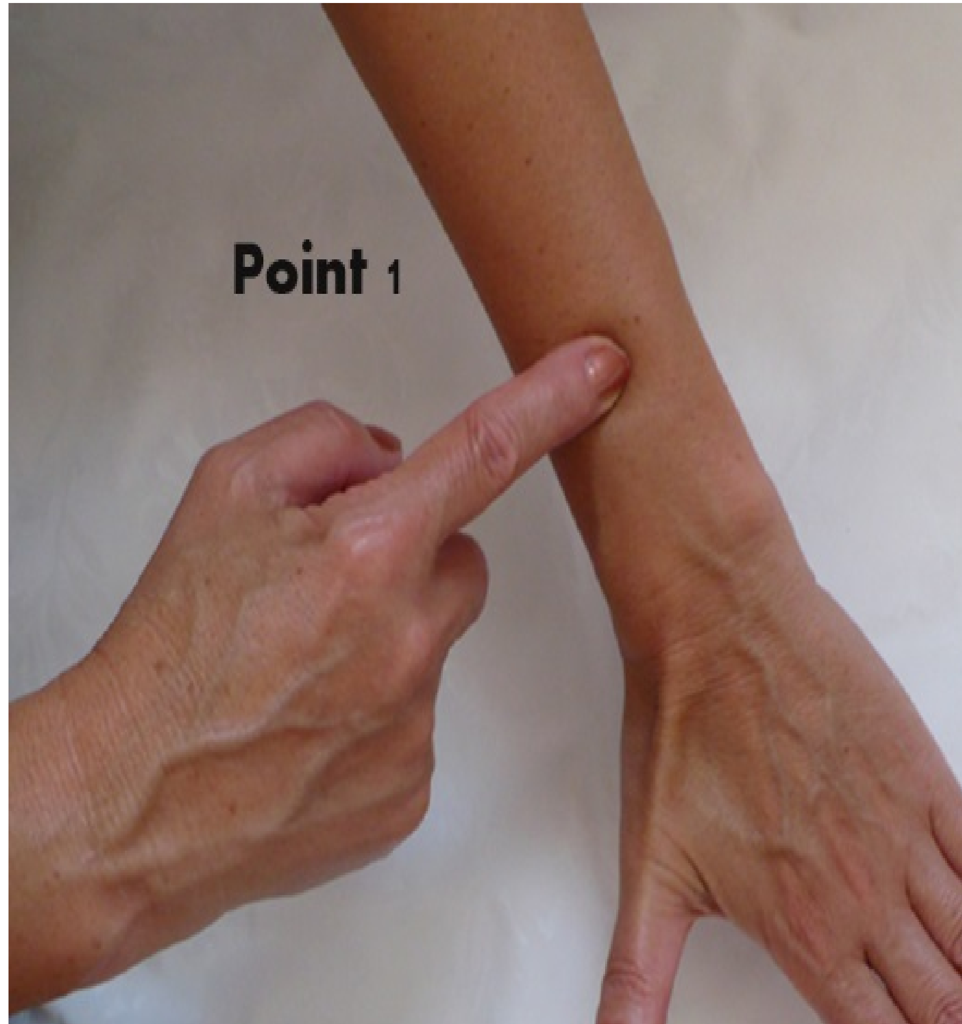
Wrist Soft tissue: radial sided



Wrist soft tissue : ulnar sided fcu ecu



Point



Physical examination wrist

- Ulnar
- Radial
- Palmar
- Dorsal

Differential Diagnosis

- Add box from Bruknar and Khan for pain in wrist

Video Presentation

- Key is to point : no with one finger where does it hurt
- Special tests

Management

Acute wrist injuries

- Scaphoid
- Scaphoid Lunate Dissociatoin
- Distal Radius/ulna fractures
- DRUJ injuries

X-ray if:

- Limited dorsiflexion: indicated significant radiocarpal arthritis
- Hx of FOOSH
- Focal Bony Tenderness

No such thing as a wrist sprain

If tenderness scaphoid/lunate /radius

- Immobilize even if xray negative
- Fup 2 weeks re-xray
- High litigation

Scaphoid fractures

- Proximal 8-12 weeks immobilization thumb spica
- Distal varies: 6-10 weeks depending on xray healing
- Refer to a specialist

Scaphoid – Lunate Dissociation

- Tender scaphoid/lunate positive ballottement
- Immobilize , fup at 2 weeks, develop if left untreated.

DRUJ injury

- Severe
- Would never see

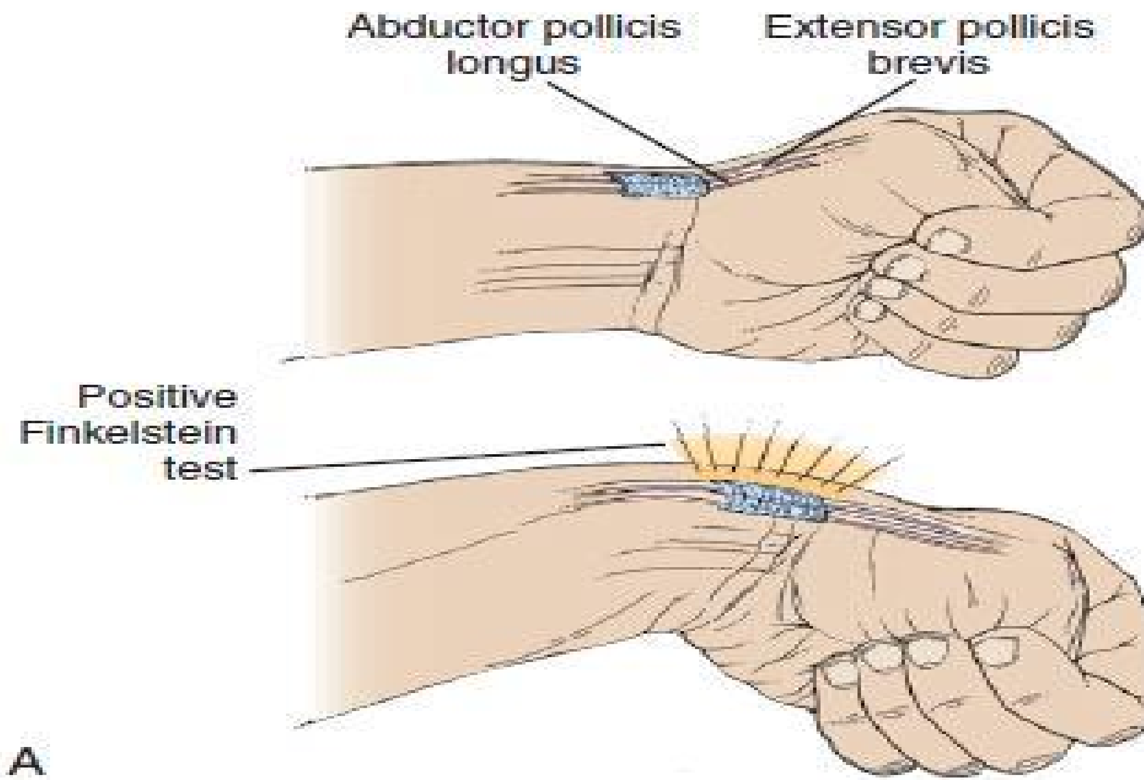
Distal radius

- Immobilize ensure proper alignement
- 6 – 8 weeks

De Quervain Tenosynovitis

- History: who cares
- Physical examination: Radial sided pain
- Finkelsteins positive

Finkelsteins



De Quervain Tenosynovitis

- Voltaren 8-10% gel
- Tee Pee wrist Brace
- Ice cube
- Hurt versus Harm
- Hand physio: East City or Gisele Green
- Cortisone 10mg, 30gauge needle

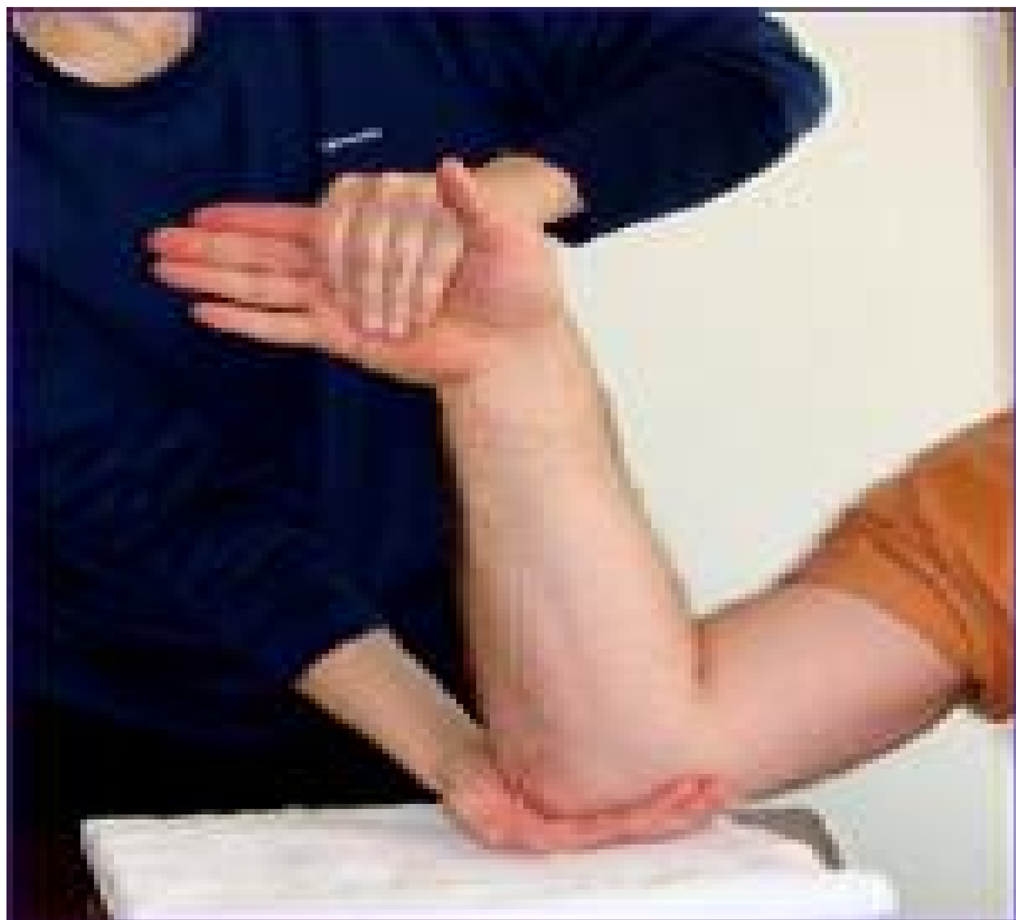
Radiocarpal osteoarthritis

- Physical examination: non specific pain, difficult to localize
- Limited dorsiflexion
- X-ray confirms diagnosis
- Management:
  - ✓Conservative: Hand physio, soft neoprene wrist brace, activity modification, voltaren gel, corticosteroid injectinos through radiology
  - ✓Surgical : referral to Todd Clarke or John Marsh.

TFCC Irritation

- Background: 50% have TFCC tears incidentally on MRI. Never MRI unless cannot supinate or pronate fully. Dr. Clarke operates on 3 a year for this exact reasons. It is the size of a pea.
- History: ulnar sided pain, usually some type of dorsiflexion / ulnar deviation activity or following wrist sprain.
- Physical examination: ulnar sided pain, positive grind test/ positive press test.

Grind Test



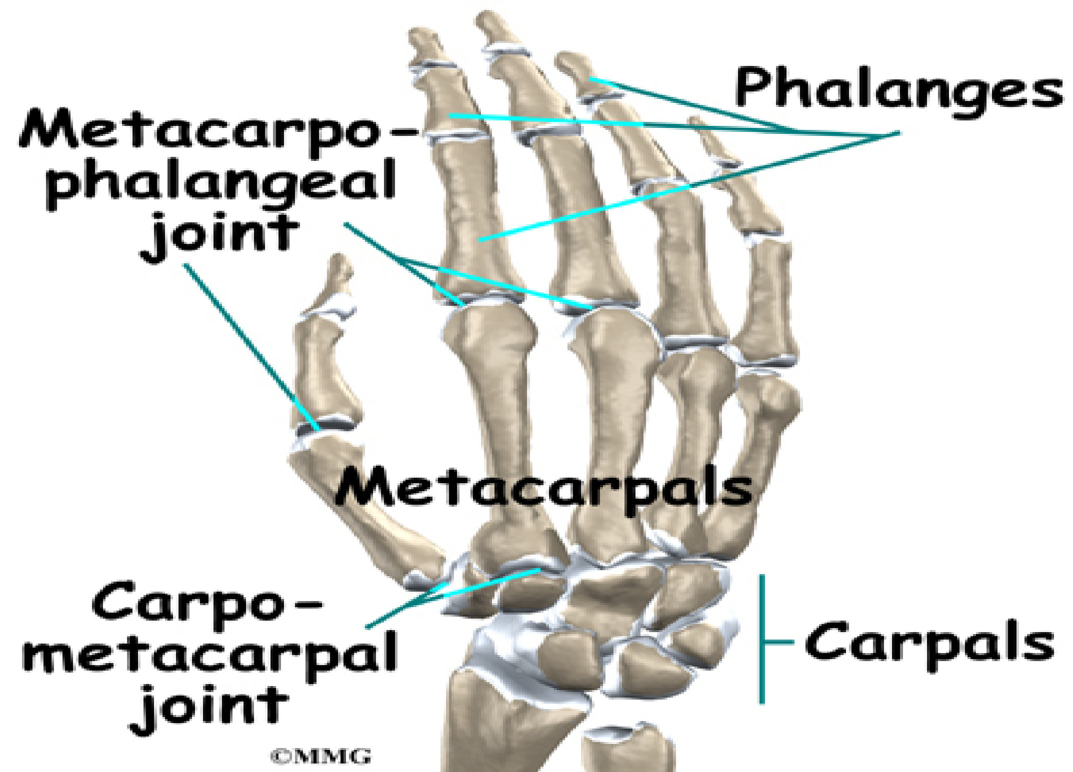
Press Test

Management

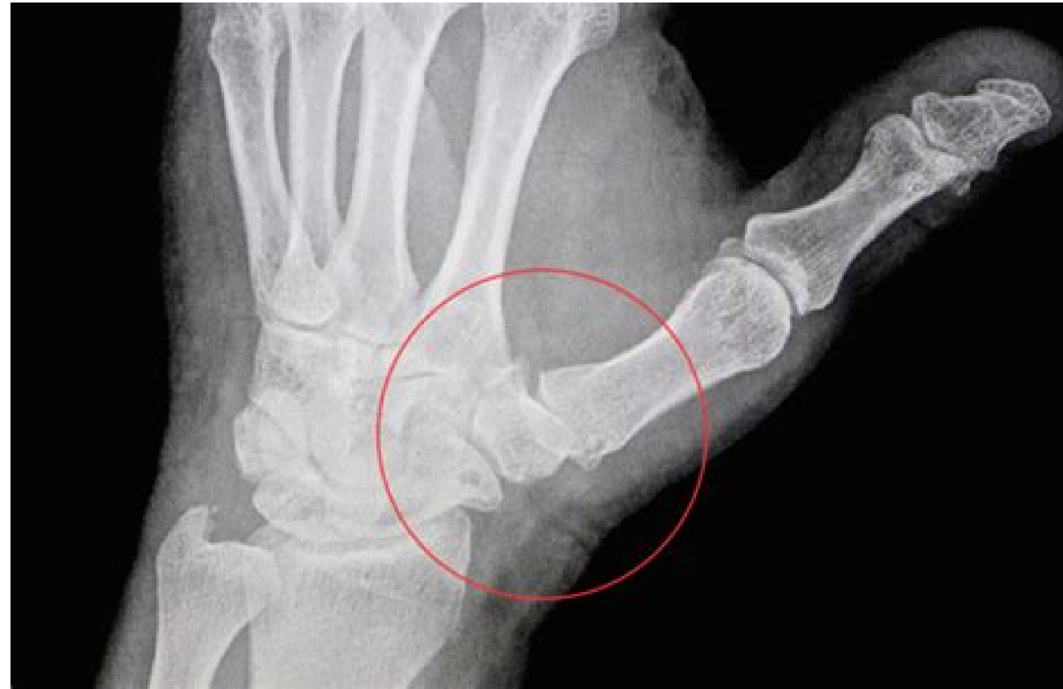
- Reassurance: hurt versus harm
- Grumbly injury
- No damage
- Activity modification
- Voltaren gel
- Soft neoprene wrist brace with +/- hinge support
- Hand physiotherapy
- 10mg depomedrol injection if fails

Common Hand Conditions

CMC OA



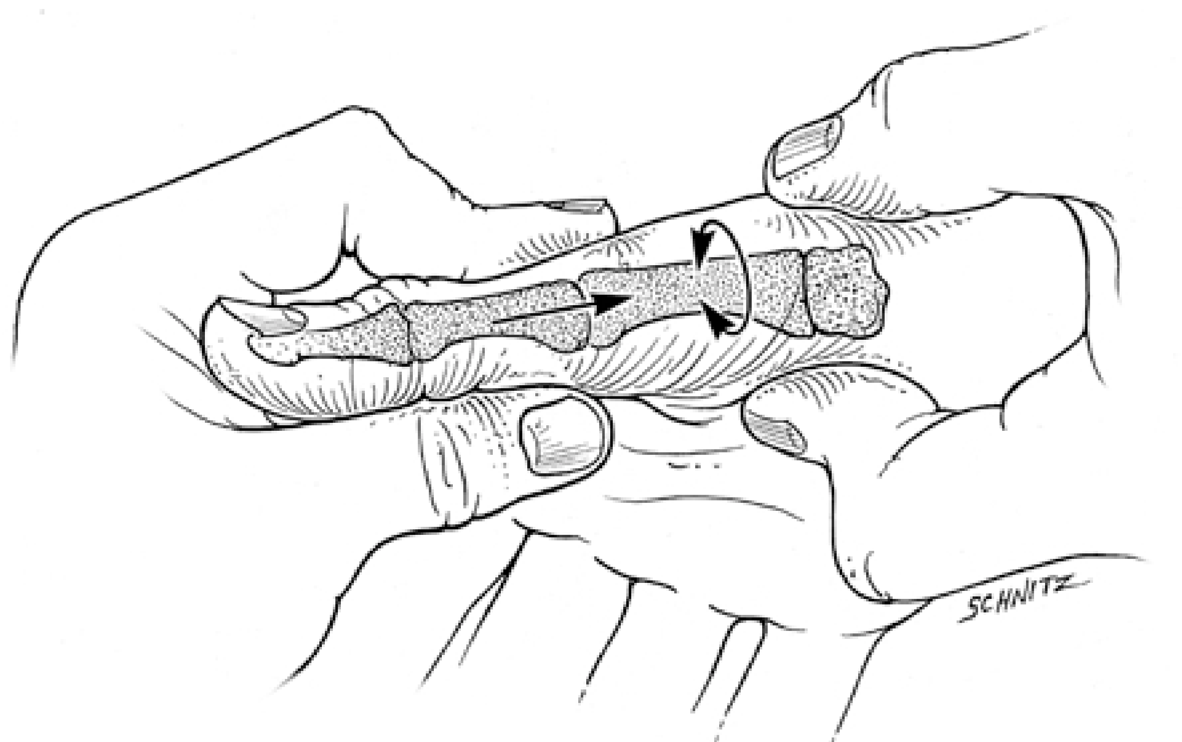
CMC OA



CMC OA

- History: Vague radial sided pain that can radiate up or down hand / wrist
- Physical examination: point tenderness cmc joint or thenar eminence
- Positive CMC joint Grind test

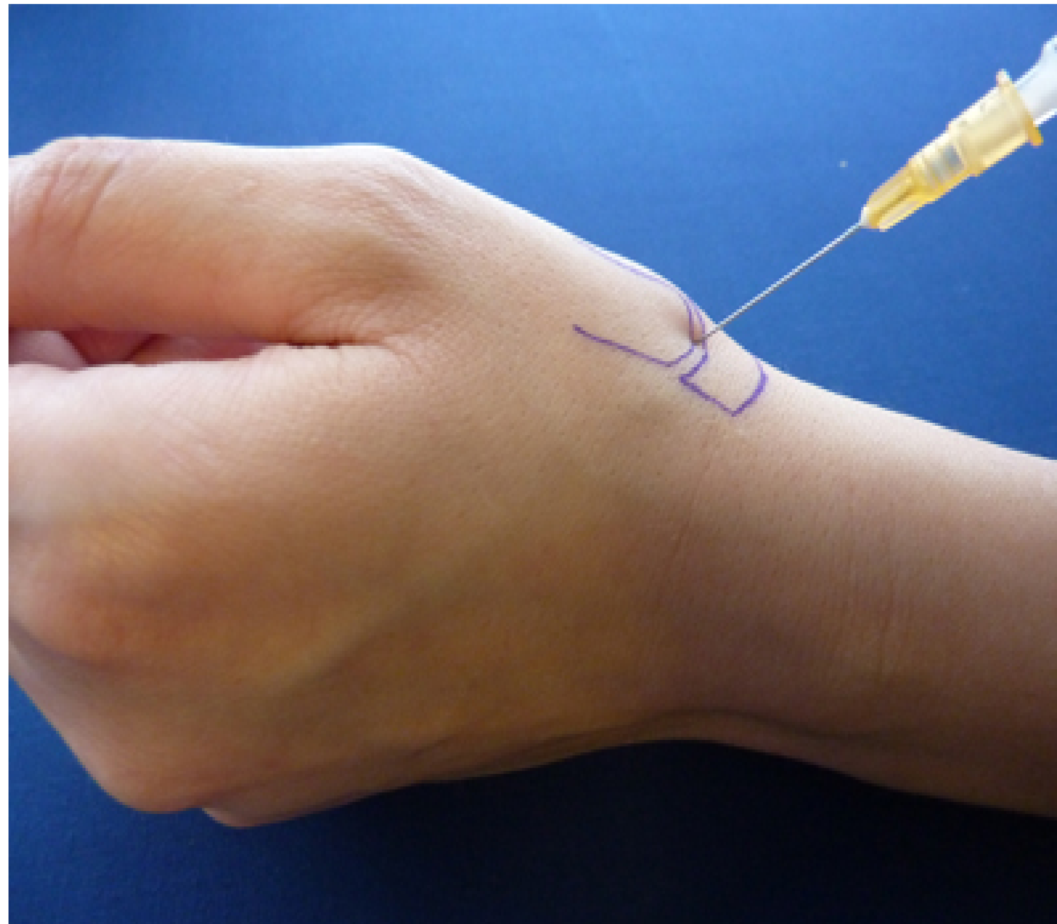
CMC OA grind test



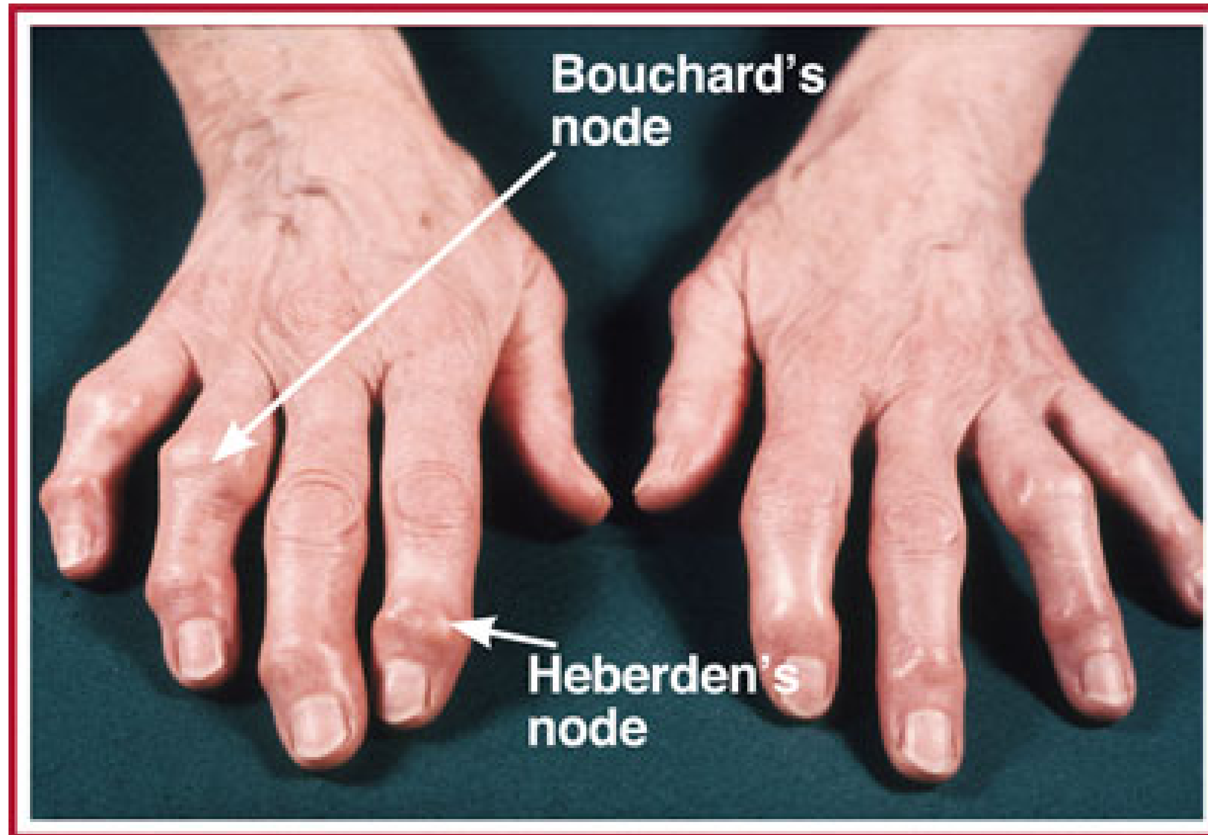
Management

- Depends on degree of severity
- Mild disease:
  - ✓Reassurance
  - ✓Hurt versus harm
  - ✓Voltaren gel
  - ✓Tee pee wrist brace
  - ✓Hand physiotherapy
  - ✓Tylenol arthritis
- Moderate-Severe Disease:
  - ✓Cortisone injections: thumb in flexion
  - ✓Surgery: Clark /March /Murray?

CMC joint injection



OA DIP/PIP joints



Hand OA

- History: vague pain, can have inflammatory/ mechanical in nature
- Assess for psoriatic arthritis
- Physical examination : assess for nail bed changes, dactylitis, flexor tenosynovitis, mcp synovitis (ie. rheumatological), psoriasis history
- Xray and ask to rule out erosions. (help the radiologists)

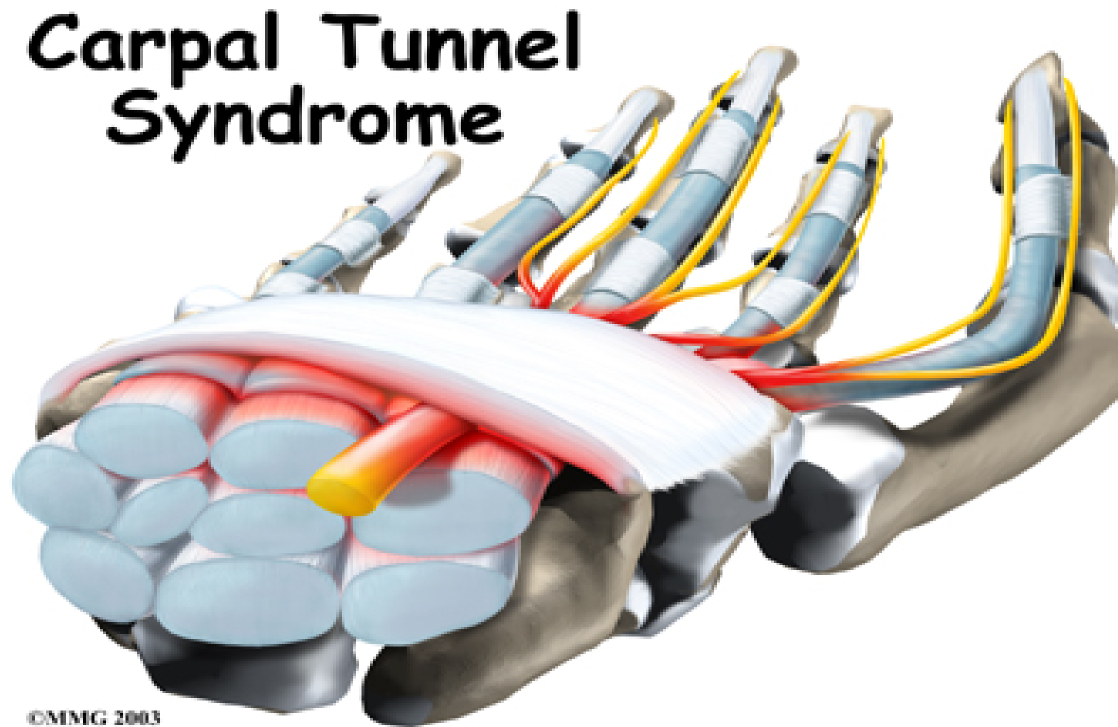
Management

- Voltaren gel
- Reassurance
- Cortisone

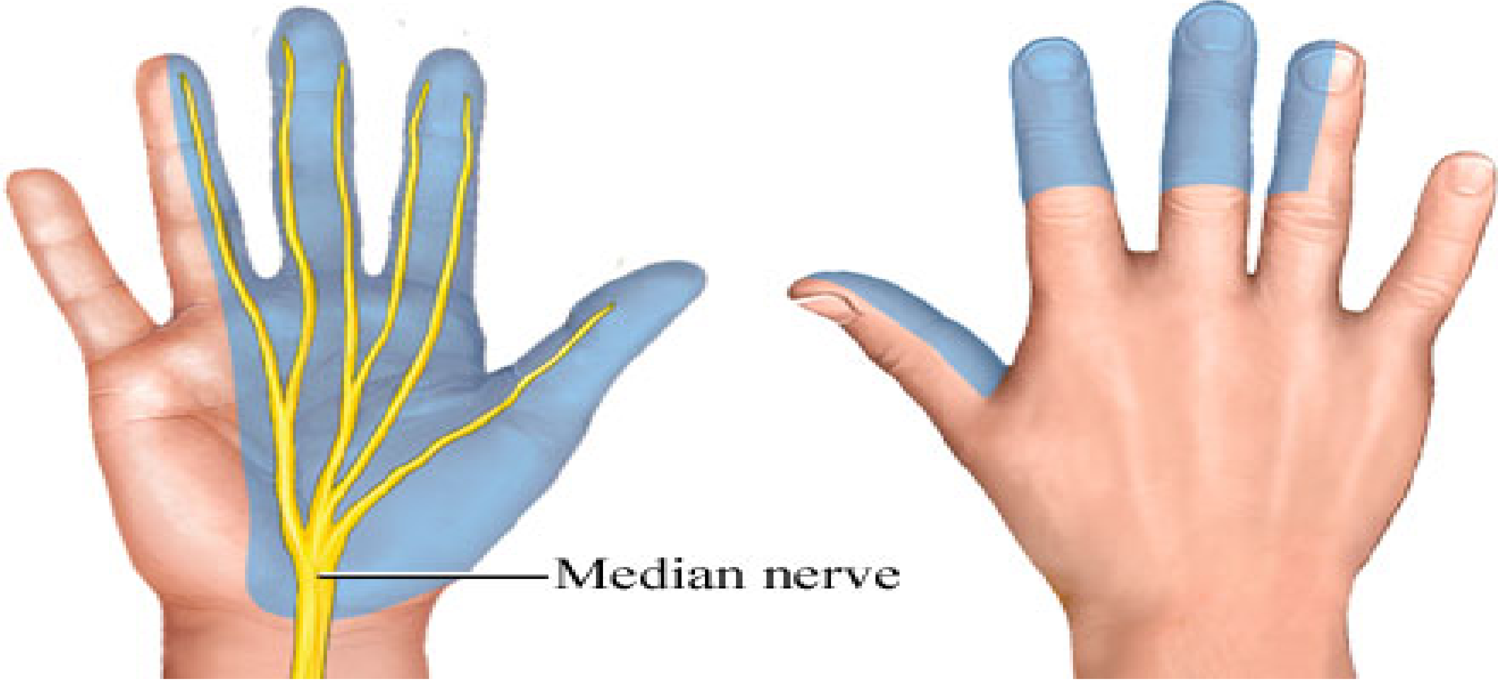
Neurological conditions

- Central (radiculopathy)
- Peripheral : Median, Ulnar

Carpal Tunnel Syndrome



Sensory

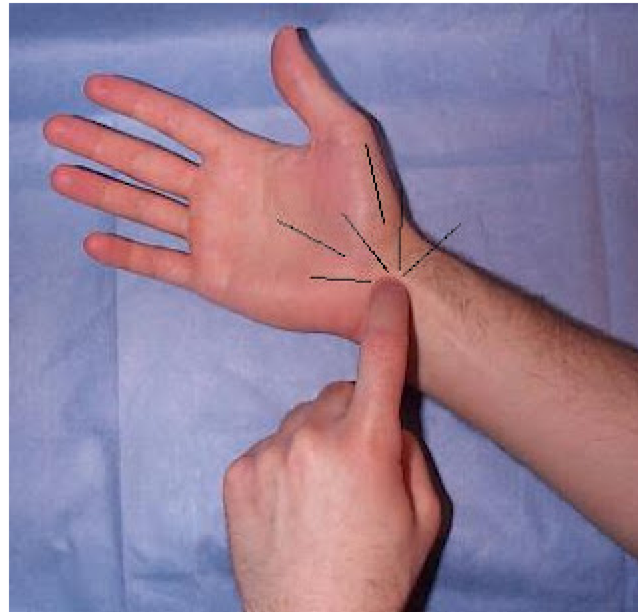


History

- Shaking hands out in the morning, numbness and tingling.
- Rule out central (radiculopathy causes) ie. C6, C7, C8 radiculopathy.
- Assess other peripheral neuropathy: see ulnar neuropathy
- Perform neuropathic blood work: B12, TSH, HgA1c

Phalens

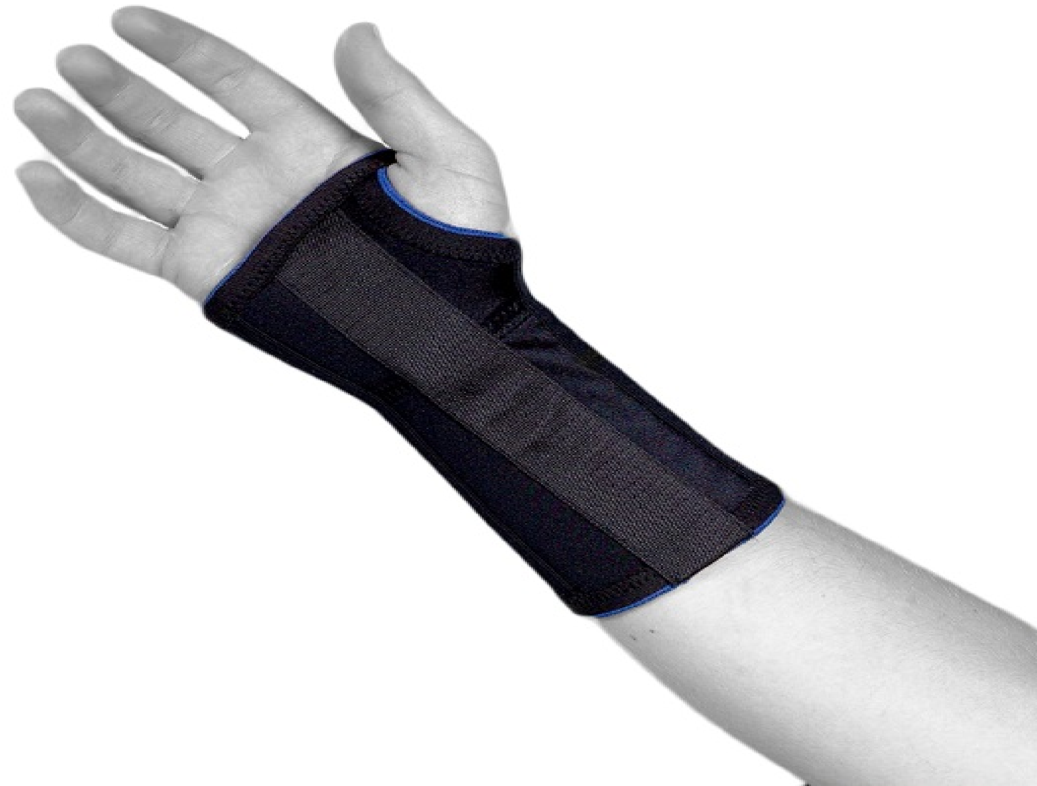
Tinel



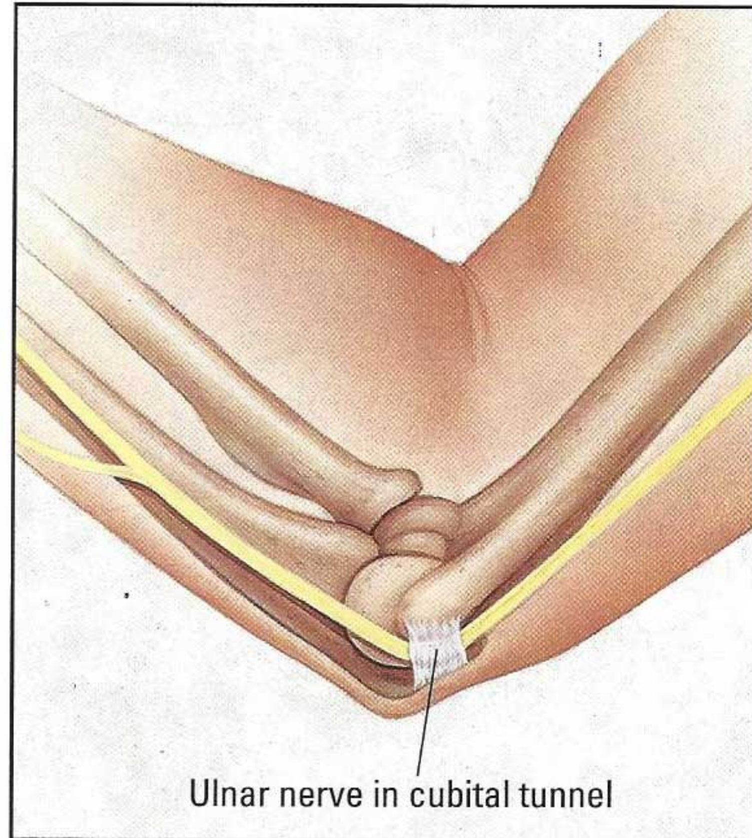
Management

- Send for nerve conduction studies
- Mild-moderate:
  - ✓Night splints: prevent flexion
  - ✓Avoid repetitive flexion
  - ✓Hurt versus harm
- Moderate-Severe:
  - ✓Cortisone injections
  - ✓Carpal Tunnel Release plastic surgery

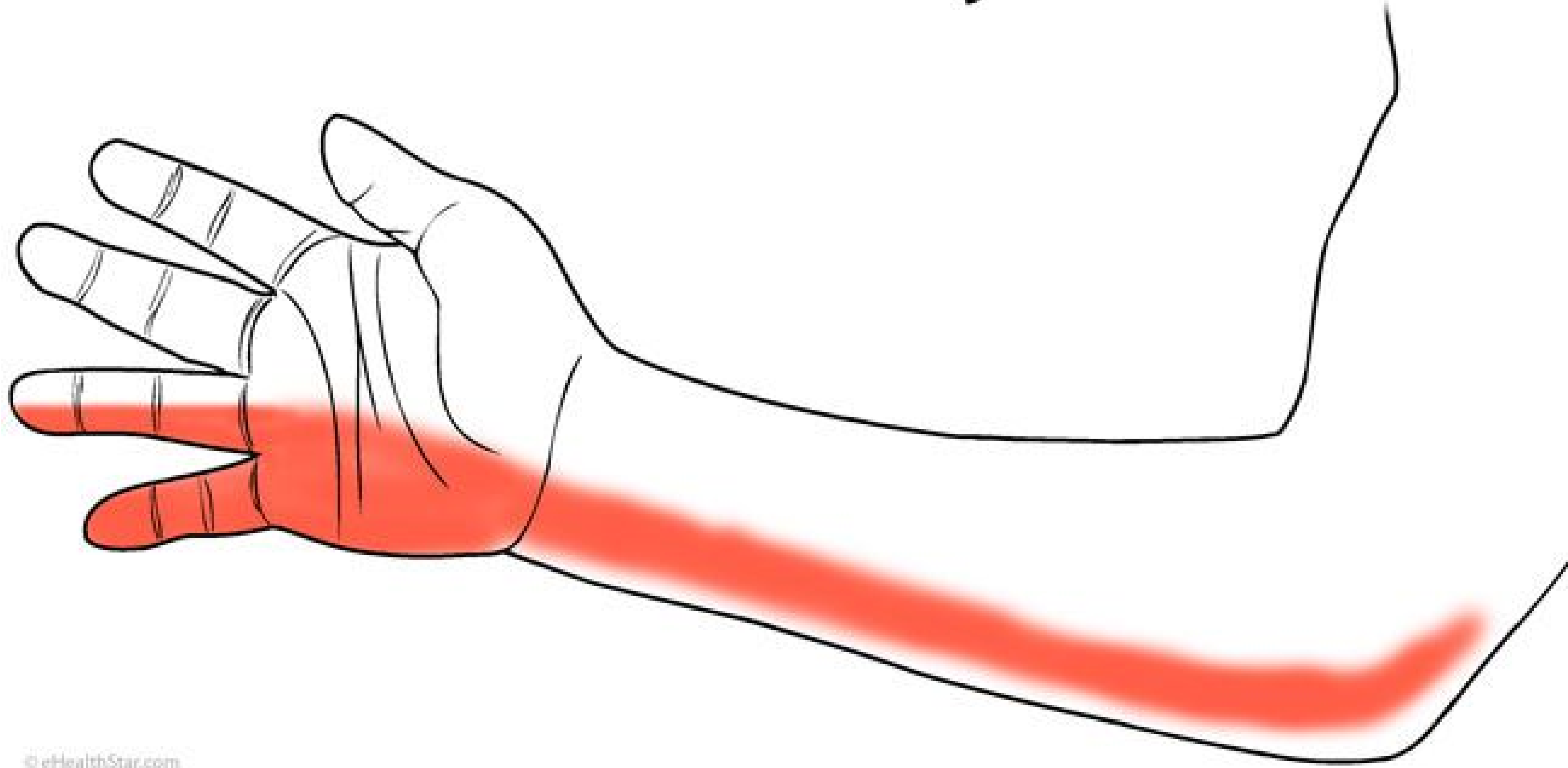
Night splints



Ulnar neuropathy: Cubital tunnel syndrome



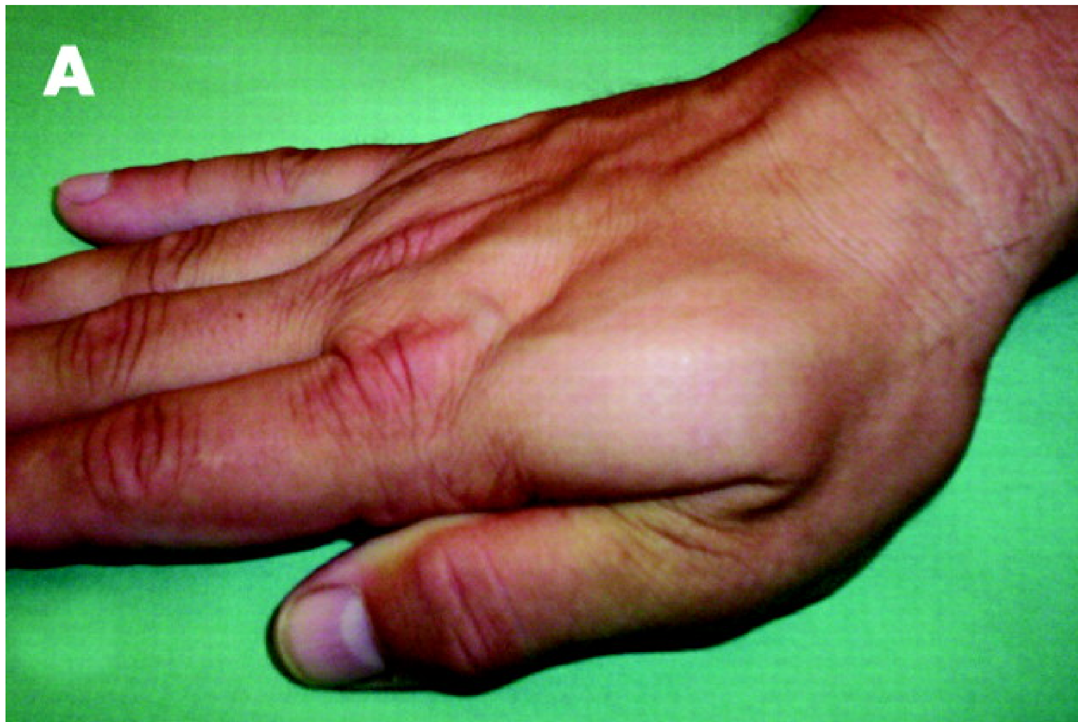
Sensory

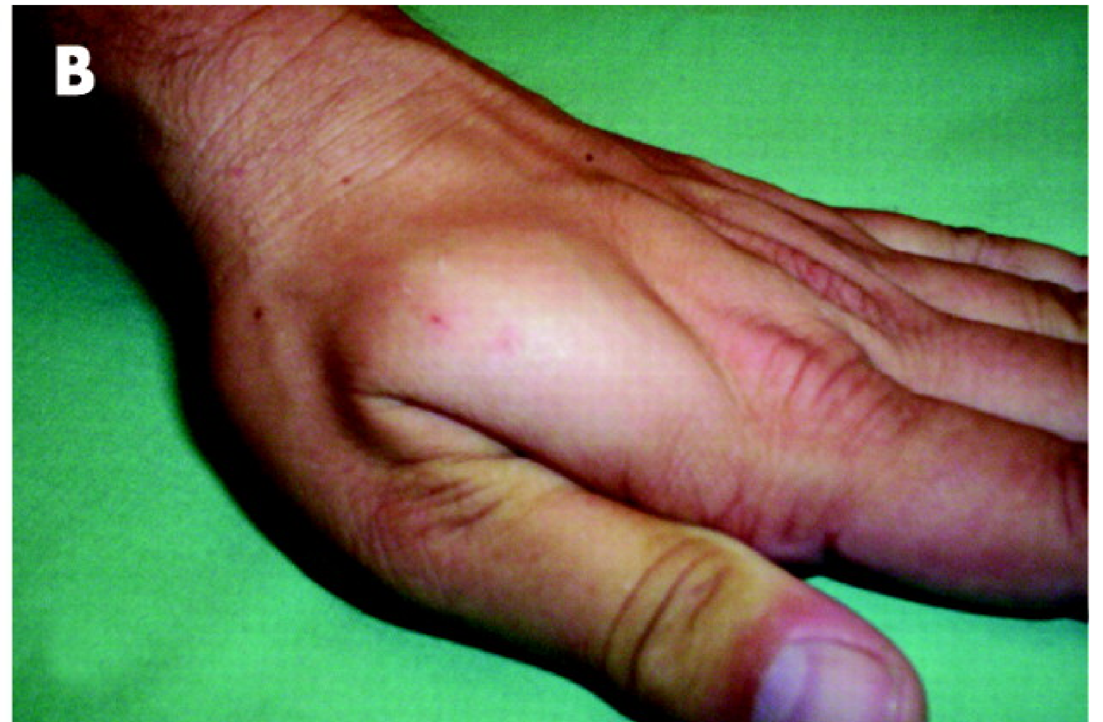


History

- Sleep with elbows flexed, repetitive friction over nerve elbow on car
- Numbness tingling 4 and 5th digits
- Check for 1st dorsal interosseous atrophy

Physical examination

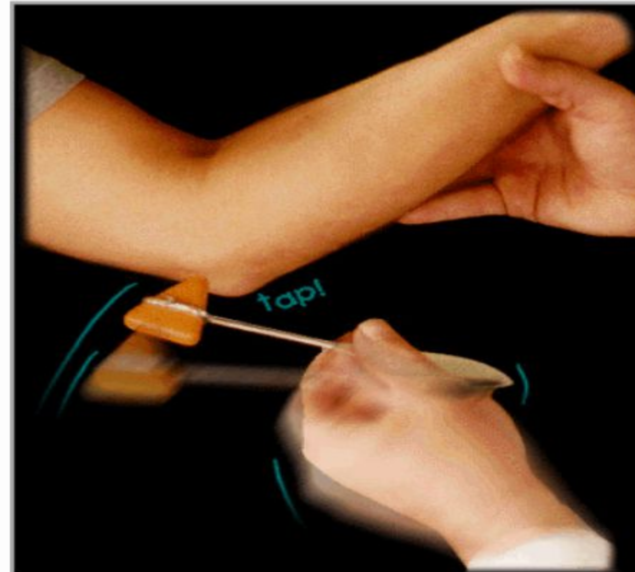




Tinel

Cubital Tunnel Syndrome: Diagnosis

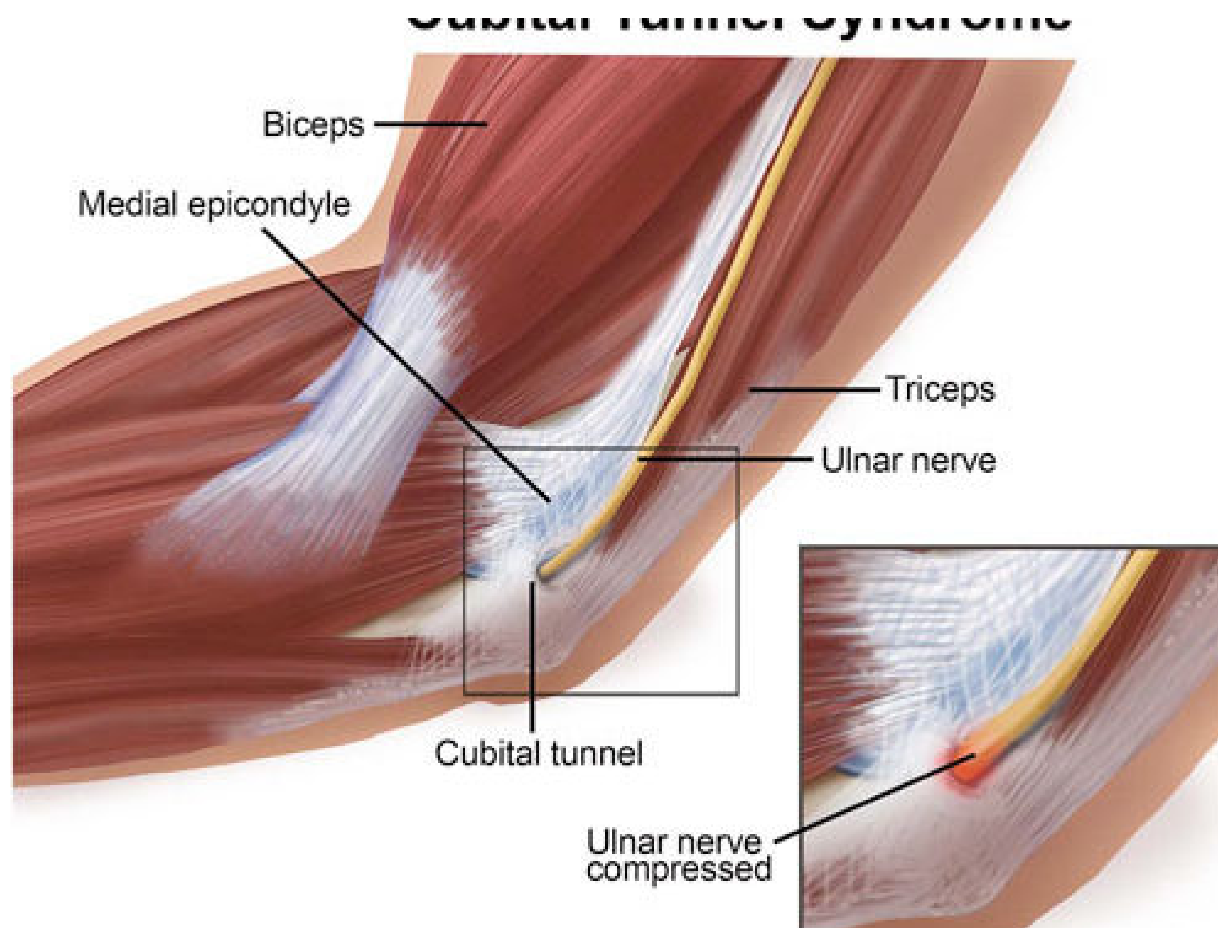
- Positive Tinel's sign at cubital tunnel
- Positive elbow flexion test
- Decreased 2-point discrimination at small finger



Management

- Send for NCS
- Extension elbow night splint
- Medial elbow flexors strengthening
- Mild-Moderate: usually resolves
- Severe: atrophy, send for ulnar nerve transposition Clarke.

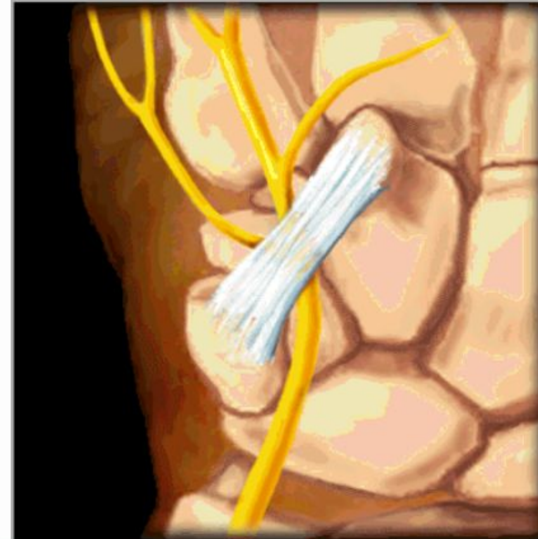
Elbow flexors



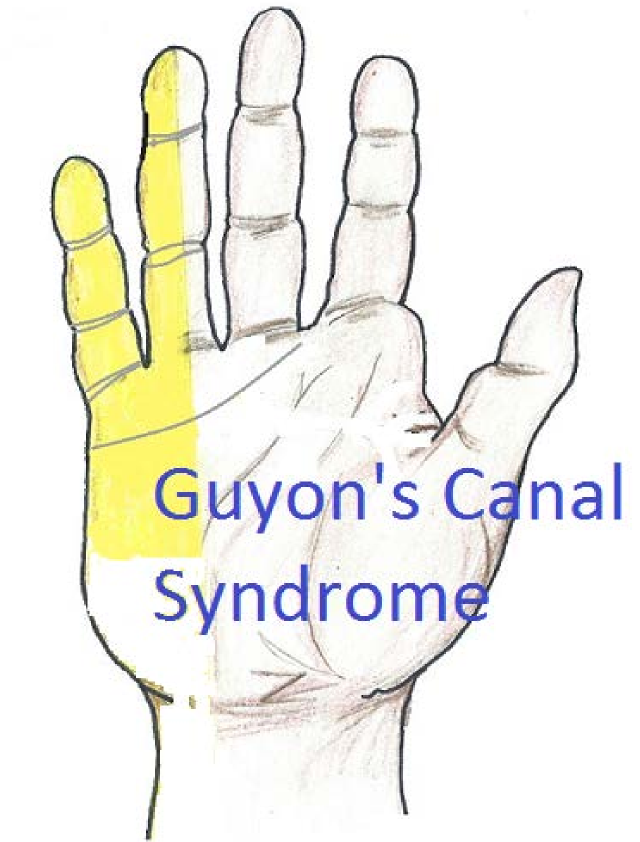
Guyons Canal Syndrome

Ulnar Tunnel Syndrome (Guyon's Canal)

- Ulnar nerve passes between hook of hamate and pisiform at wrist
- Much less common than carpal tunnel syndrome



Sensory



Physical examination

- Tinel Sensation
- Management : NCS, xray cause for obstruction, modified activities
- Reassessment
- Surgeyr if fails.

Finger examination

Physical examination: key structures

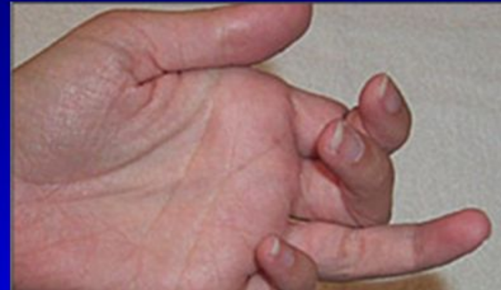
- Extensor tendons: DIP (mallet), PIP (boutonniere), MCP (rare)
- Flexor tendons: FDP (jersey finger), FDS (?)
- Volar plate: palmar aspect (joint capsule)
- Finger dislocations: mechanism of injury
- Corner fractures: ensure tendons intact if < 1/3 no plastic surgery.
- All different treatments

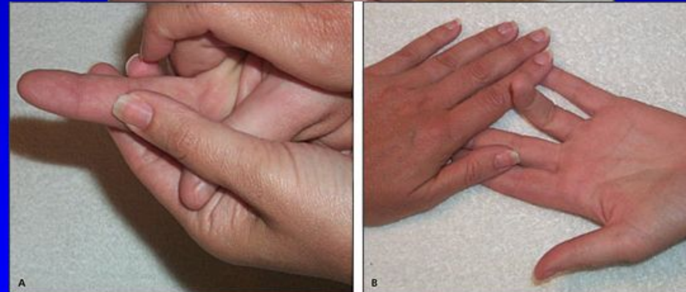
Jersey finger

Physical examination

JERSEY FINGER

- EXAM FINDINGS:
  - Unable to flex isolated DIP
  - Localized tenderness along flexor tendon
  - FDP: hold PIP straight and flex DIP
  - FDS: hold MCP straight and flex PIP or hold all fingers in extension except affected and flex

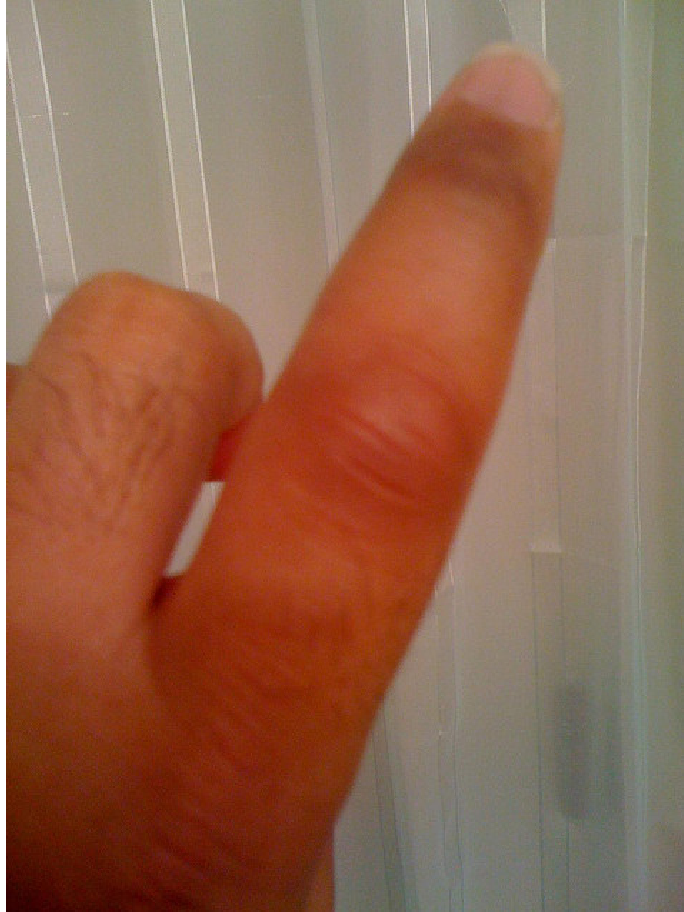




Management

- Plastic surgery

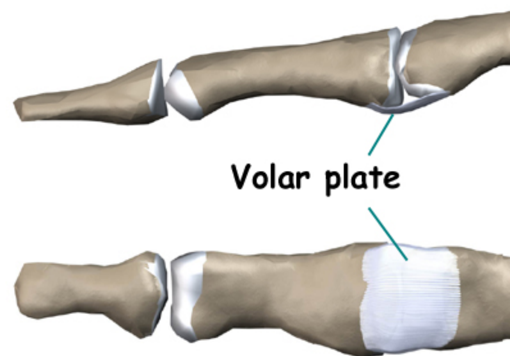
PIP/DIP sprains



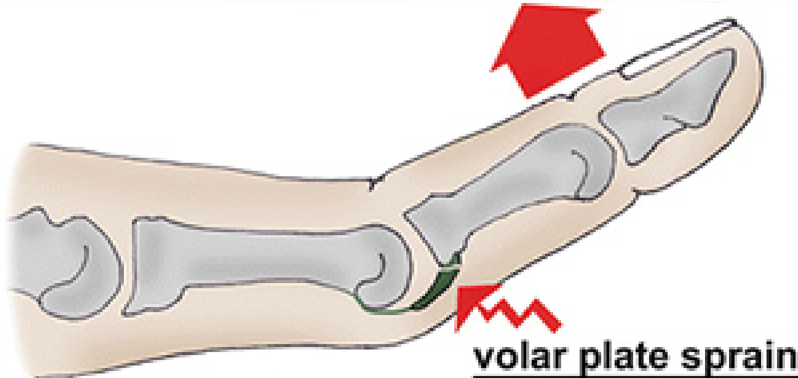
Physical examination is key

- Tender medial lateral dorsal joint line
- Volar plate tender but less so
- Tendons intact
- Extension splint 2-4 weeks
- Xray
- Fup at 2 week intervals
- Can have concomitant boutonniere, mallet or volar plate injury
- Will be sore and swollen for up to 12 weeks this is normal

Volar plate



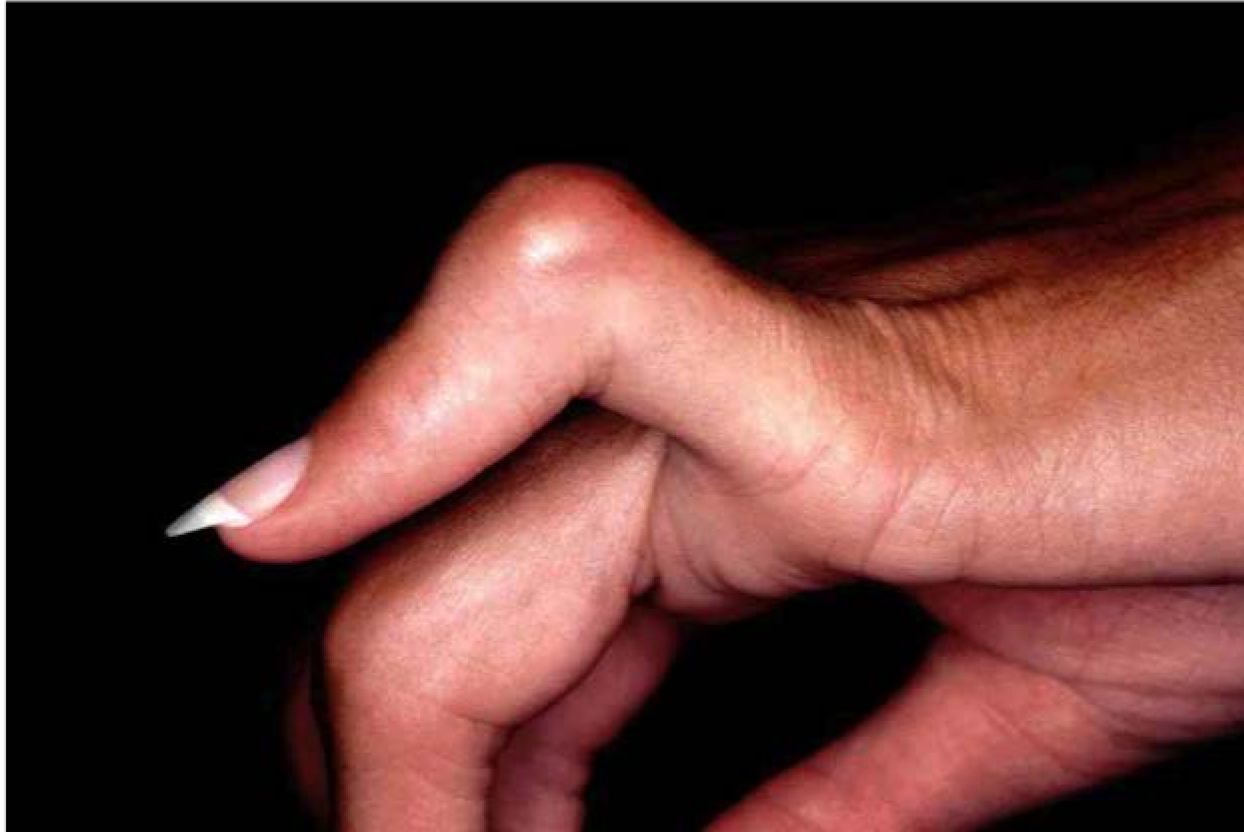
Anatomy



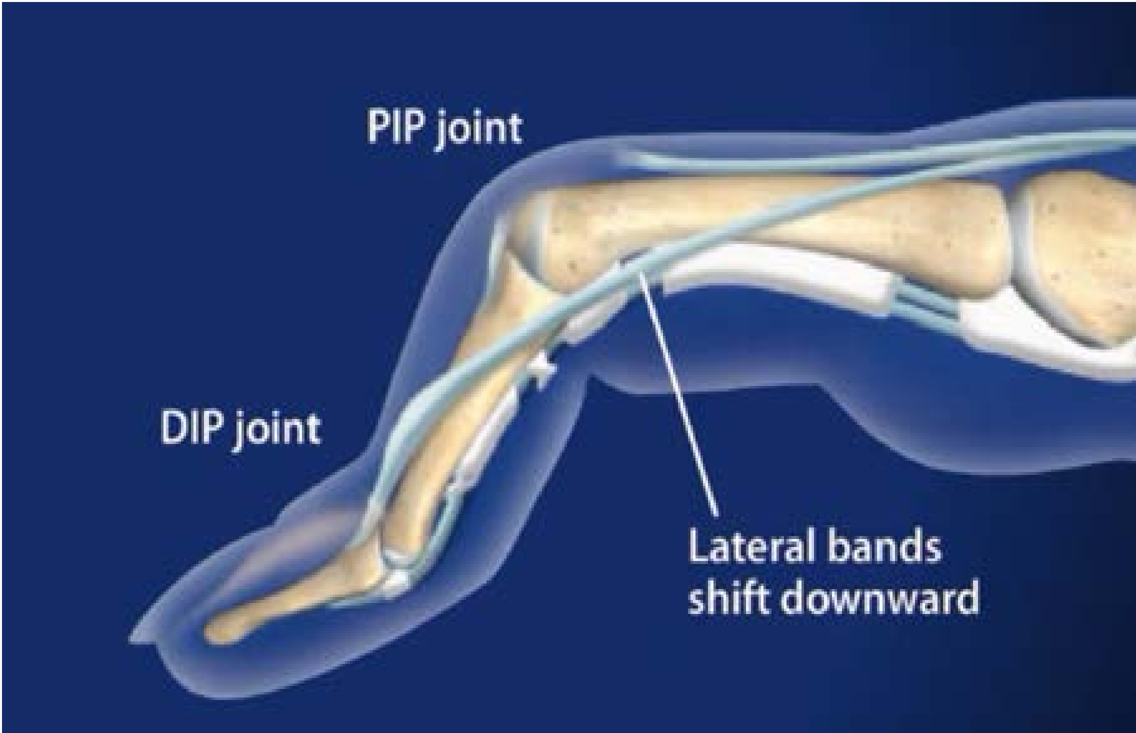
Management

- Volar plate tenderness (Volar aspect)
- All tendons intact
- Xray
- Refer if # > 1/3 of joint
- Splint 20 degrees of flexion pip joint for 4-6 weeks.

Boutonniere Deformity



Anatomy



Boutonniere Deformity

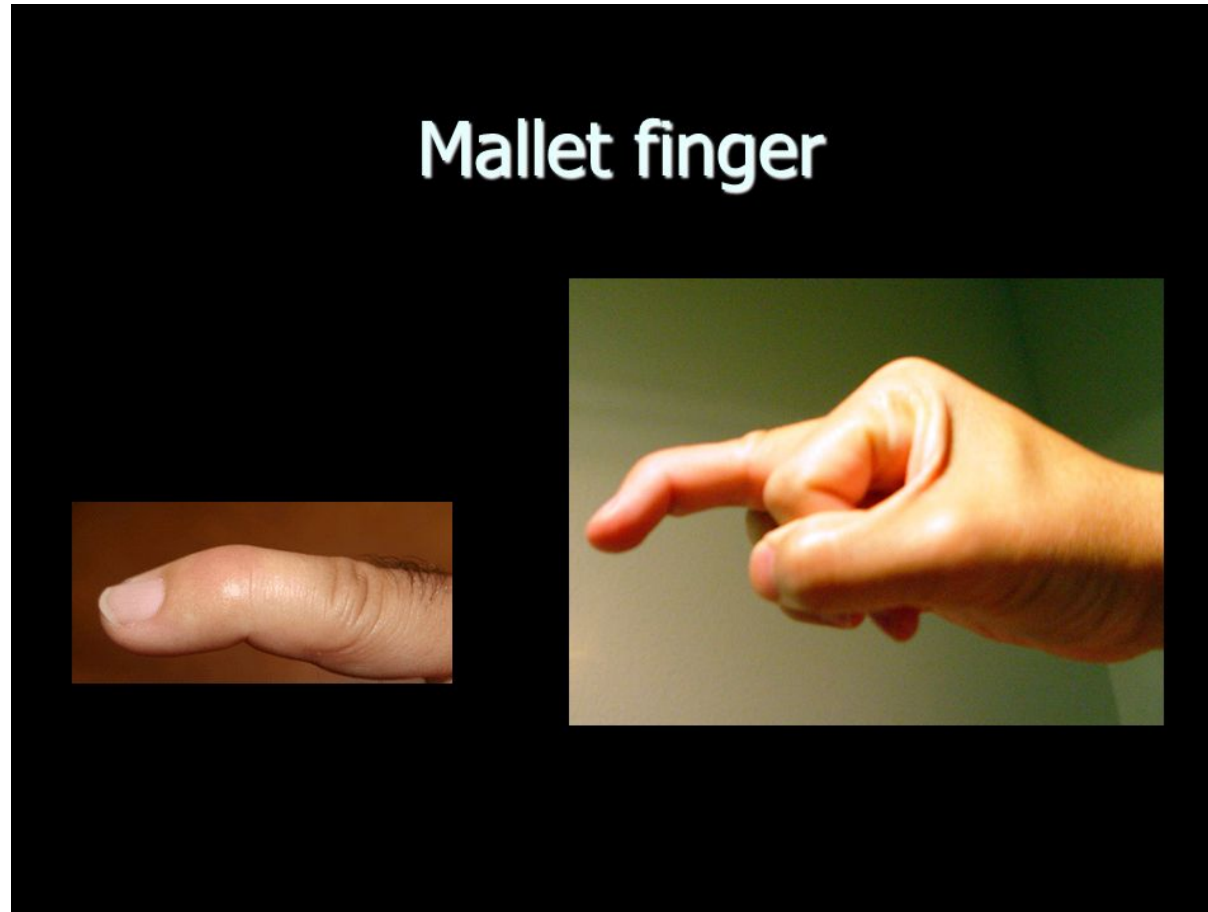
- PIP extensor tendon becomes a flexor tendon
- Mechanism: acute trauma
- Physical examination: ensure all tendons are intact: FDP/FDS/Extensor tendons.
- Reassess at 4-6 weeks.
- If conservative fails, then surgical.

Management

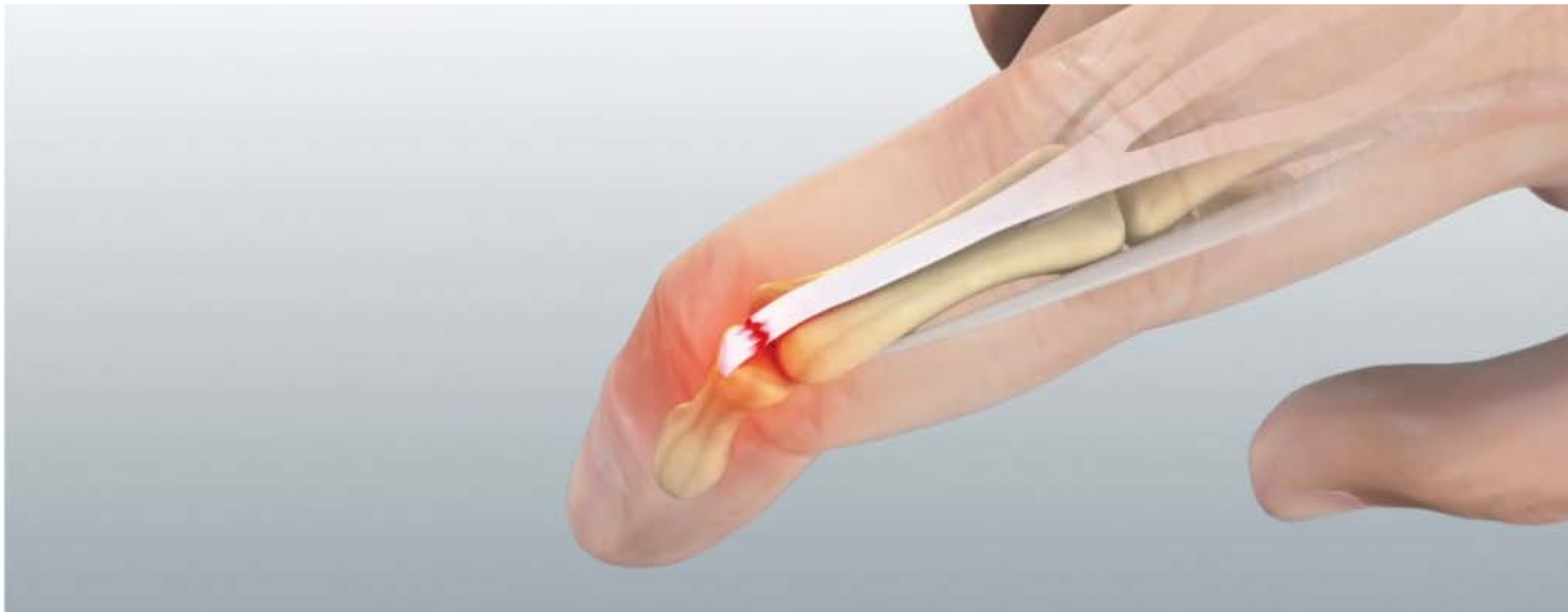
- Xray: to rule out avulsion fracture: if > 1/3 send to plastics
- Treatment: 4-6 weeks in oval 8 or extension block splint

Splint

Mallet Finger



Anatomy



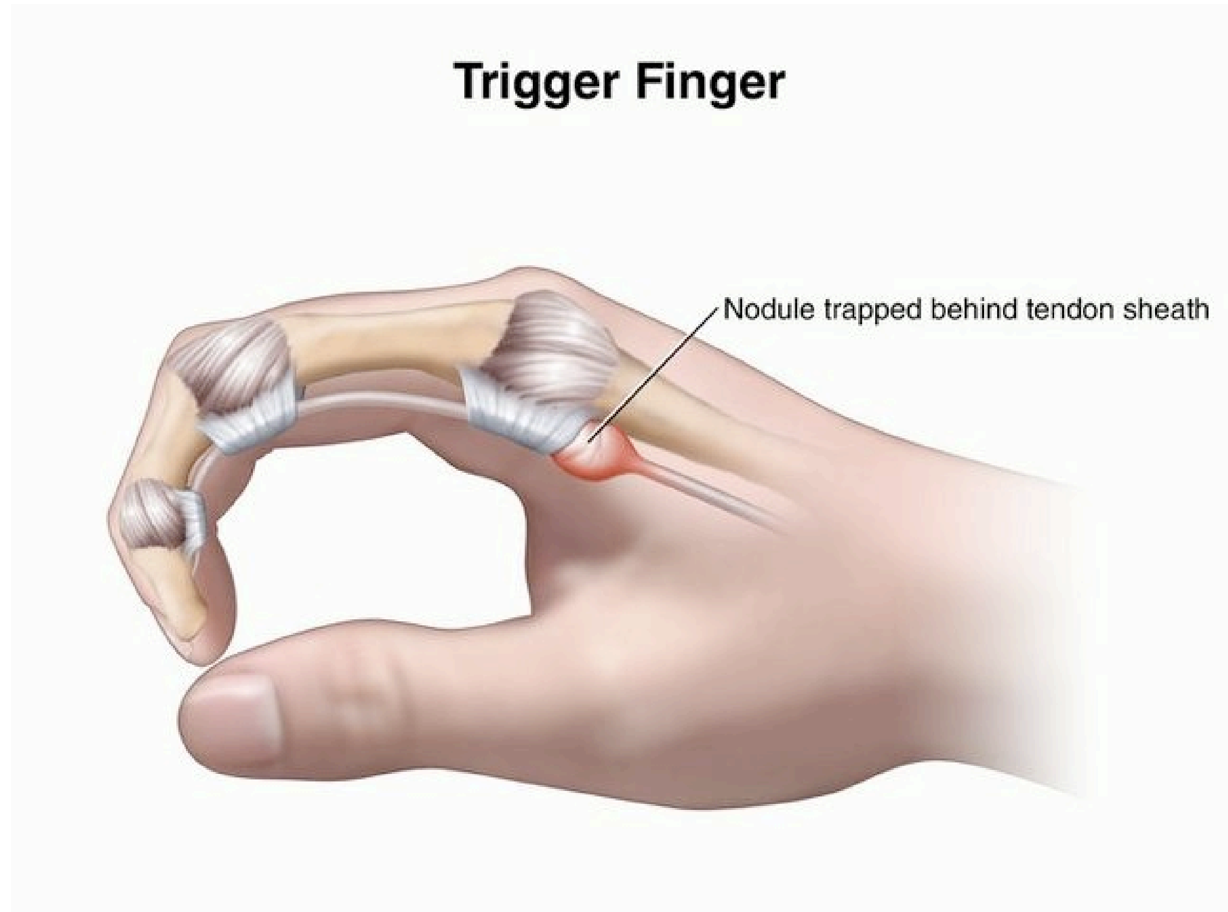
Mallet finger

- History : traumatic blow to dip
- Physical examination: ensure pip extension and fdp /fds are intact
- Treatment

Treatment

Trigger Finger

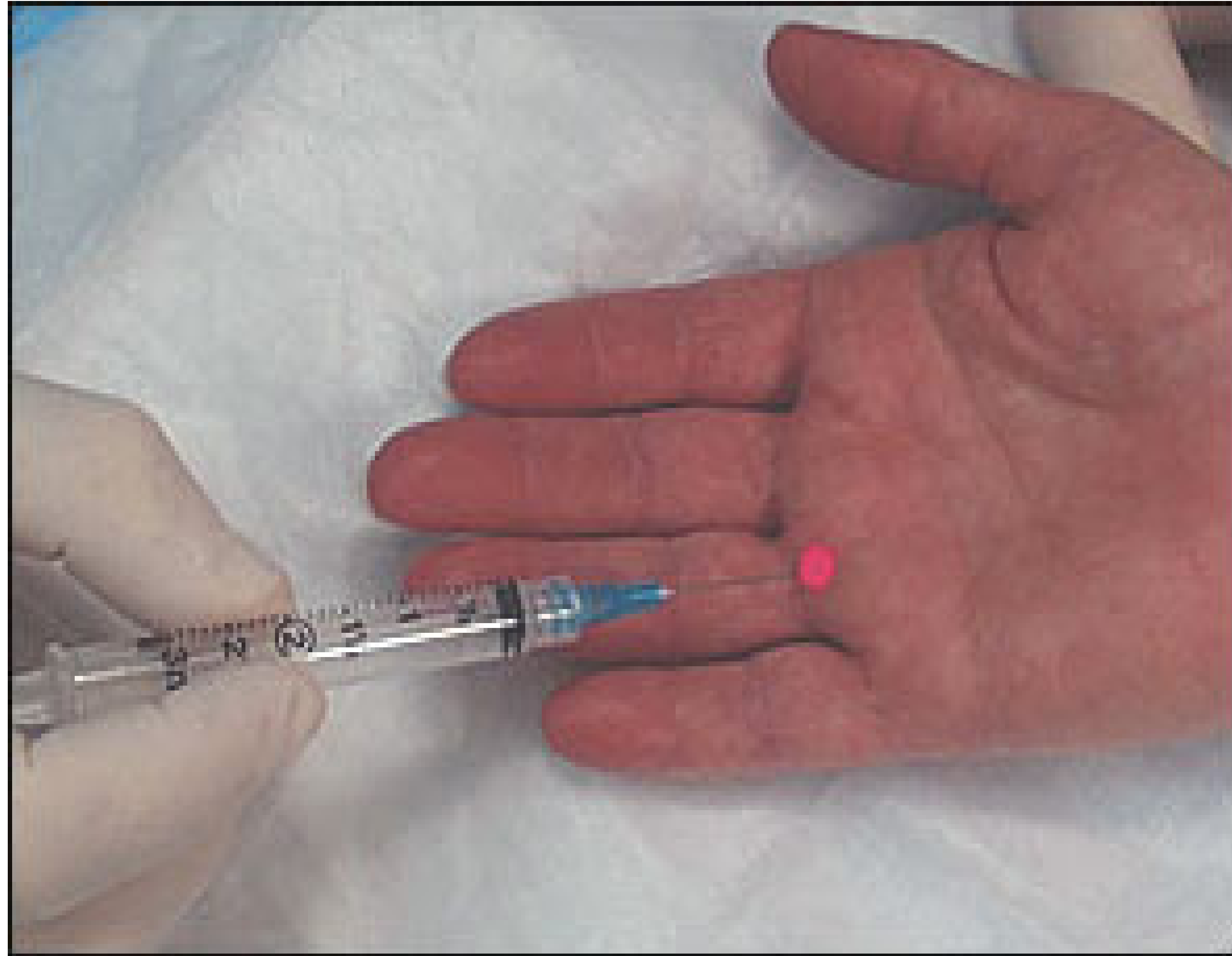
Anatomy



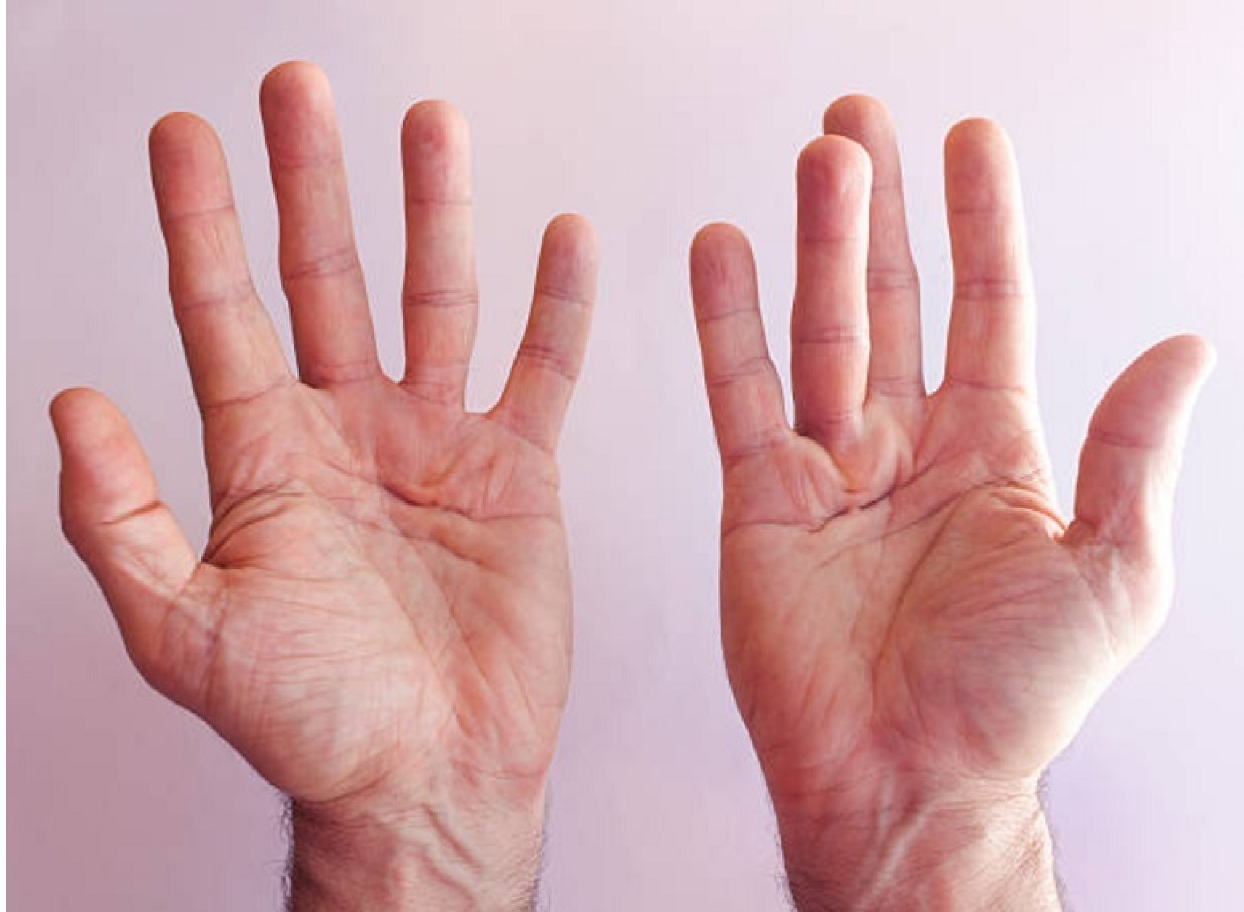
Treatment

- Based on severity
- Mild: extension splint at night, voltaren gel, hand physiotherapy
- Moderate-Severe: triggering, cortisone injection 10mg depomedrol, surgery any plastic surgeon.

Injections



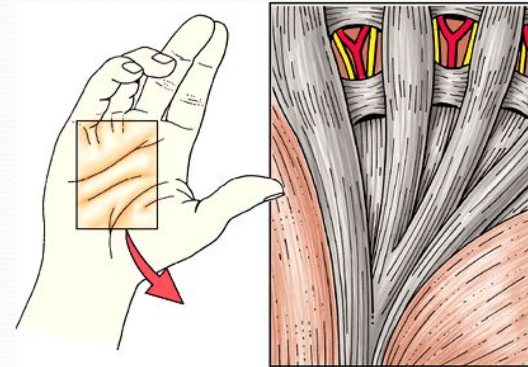
Dupuytren Contracture



Anatomy

Dupuytren Contracture of Palmar Fascia

- Dupuytren contracture is a disease of the palmar fascia resulting in progressive shortening, thickening, and fibrosis of the palmar fascia and aponeurosis.



(A)

(B)

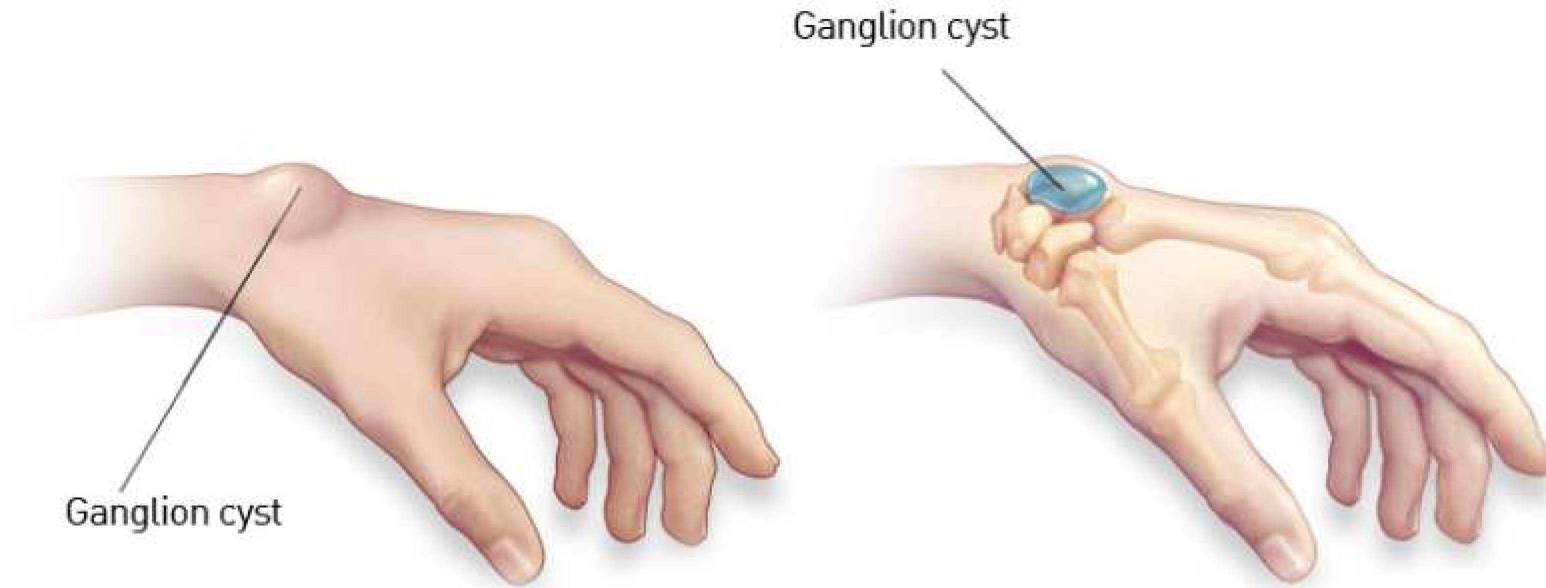
Pathophysiology

- Thickening of palmar fascia
- Scandinavian have higher risk
- Bilateral, multiple sites affected.

Treatment

- Needs Cortisone for pain
- Special injection Dr. Clark ?
- Surgery Plastic surgery or Dr. Clark/March

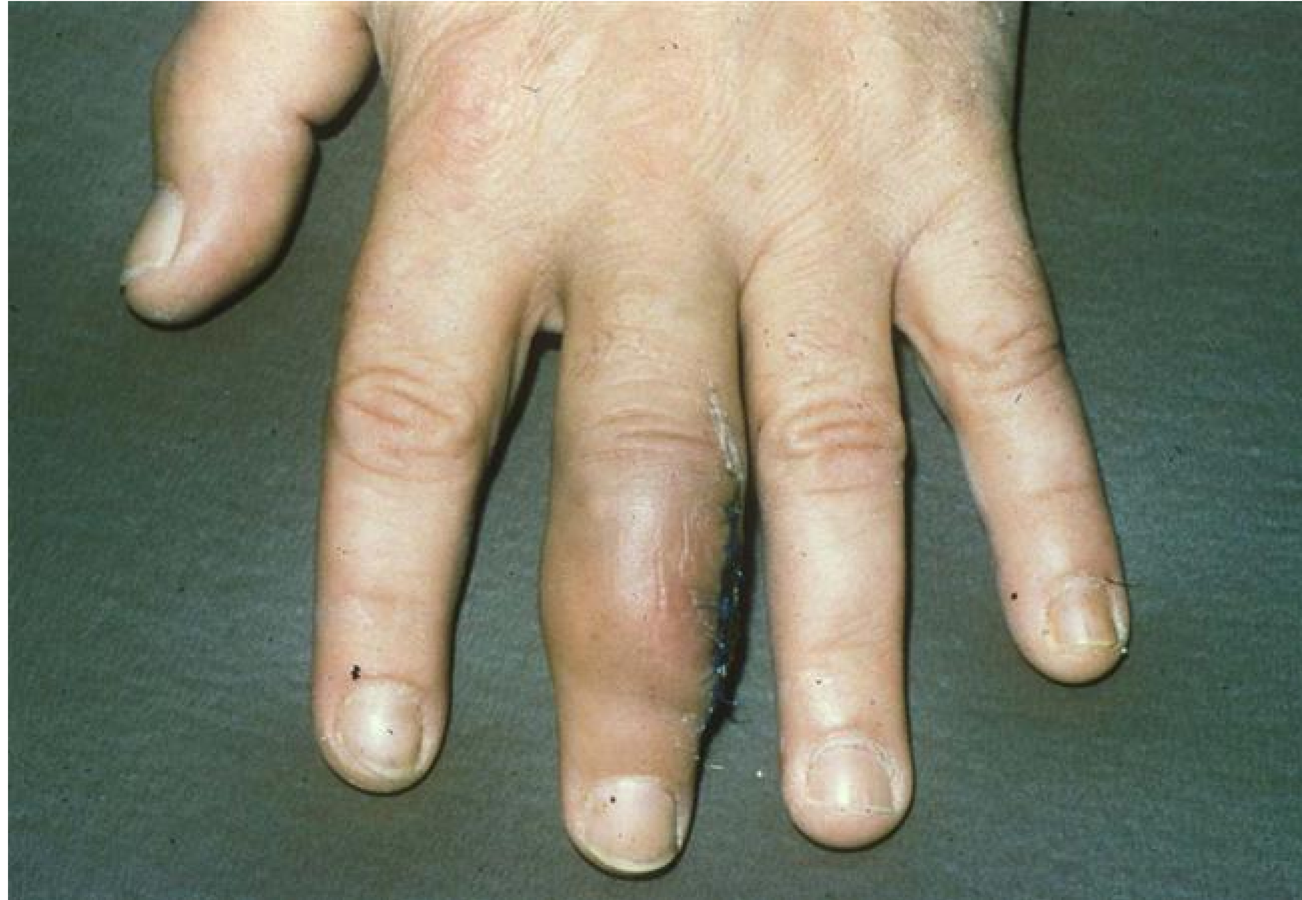
Ganglion



Management

- Benign
- Usually as a result of some sort of irritation of the wrist fall or repetitive duties
- Never recommend surgery, treat the underlying irritation first, voltaren gel, reassurance hand physiotherapy , activity modification, aspiration, cortisone if dequevain for example
- Need to remove all of it in surgery or comes back
- Mri is elective if no response and considering surgery

Hand and Wrist Neoplasms



History

- Rare, never seen one
- Atypical history, history of cancer, melanoma, rapidly progressing /changing
- Hard nodule non mobile not tender, spidy sense, call radiologist and get urgent mri, or if not CT scan at the very least, also xray
- Blood work,
- Refer