*2024 Primary Care Hawaii Conference*

# Common Problems of the Elbow, Wrist and Hand

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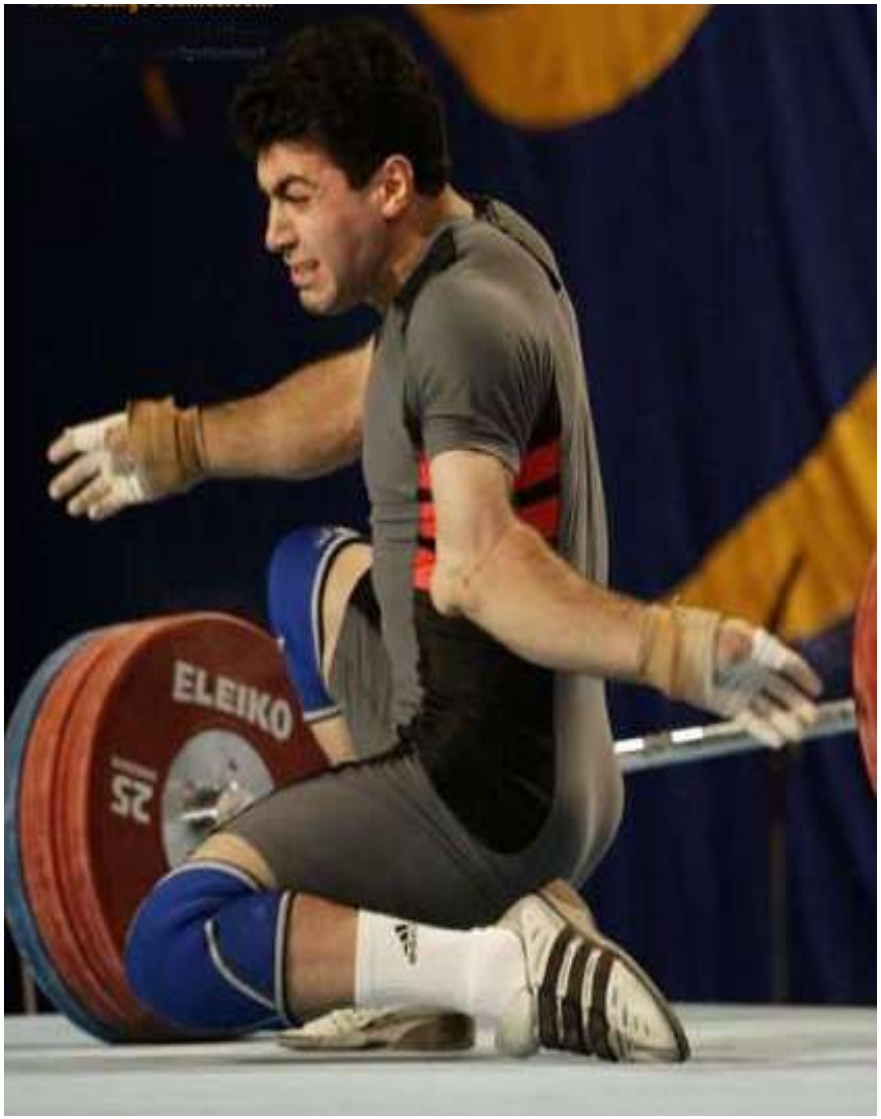
# Introduction

- Elbow, wrist and hand problems are common in primary care practice.
- May result from acute trauma or overuse in active & athletic patient.
- Tendency to minimize injury, since non-weight bearing and often not initially debilitating.
- Potential for significant disability if not appropriately diagnosed and treated.
- The majority of these problems can be effectively managed by primary care physician.


"And *you*, Johnson! You stick with your man and keep that hand in his *face*!"

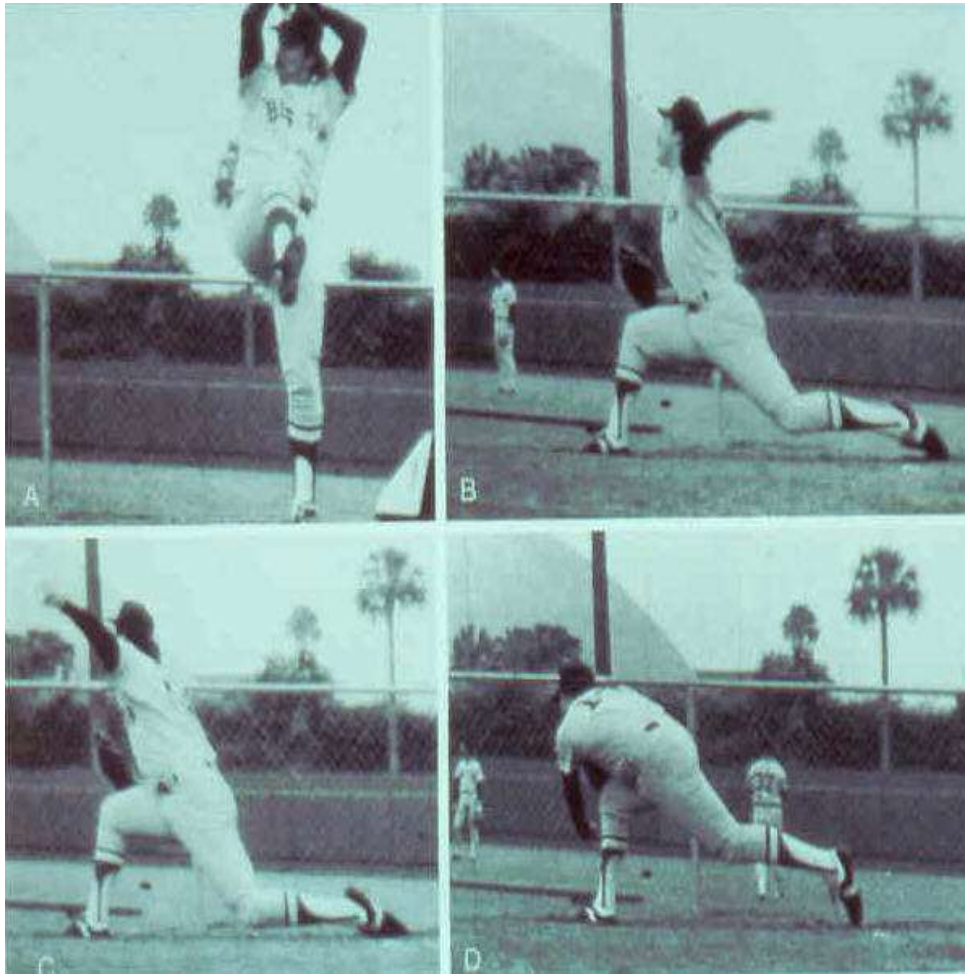
# Overview

- Review common problems seen in primary care practice involving the elbow, wrist and hand.
- Emphasis on diagnosis and management you can do in the office, along with indications for referral.
- Help you feel more confident in caring for these common problems.



# Elbow Pain with Throwing

- Acceleration Phase - valgus force greatest; causes medial tension stress and lateral compression stress.
- Release/Deceleration Phase - elbow flexors stressed.
- Follow-thru Phase - hyperextension jams Olecranon into fossa.



# Throwing Injuries to Elbow

- Throwing creates a valgus stress at elbow.
- Causes tensile forces at medial elbow (ulnar collateral ligament and epicondyle).
- Causes compression forces at lateral elbow (radiocapitellar joint).
- ***Greatest*** stress during acceleration phase of throw. Worse with sidearm throw.

# Ulnar Collateral Ligament Strain/Tear

- Caused by valgus stress of throwing.
- **<u>Symptoms/Exam:</u>** ***medial*** elbow pain, ***worse*** with valgus stress (done at 30°). May see ***laxity***. ***Milking*** maneuver helpful.
- **<u>Treatment:</u>** no throwing, ice and NSAID's until pain gone.
  - Rehab exercises.
  - Graduated throwing program.
  - *Surgery* is last resort.

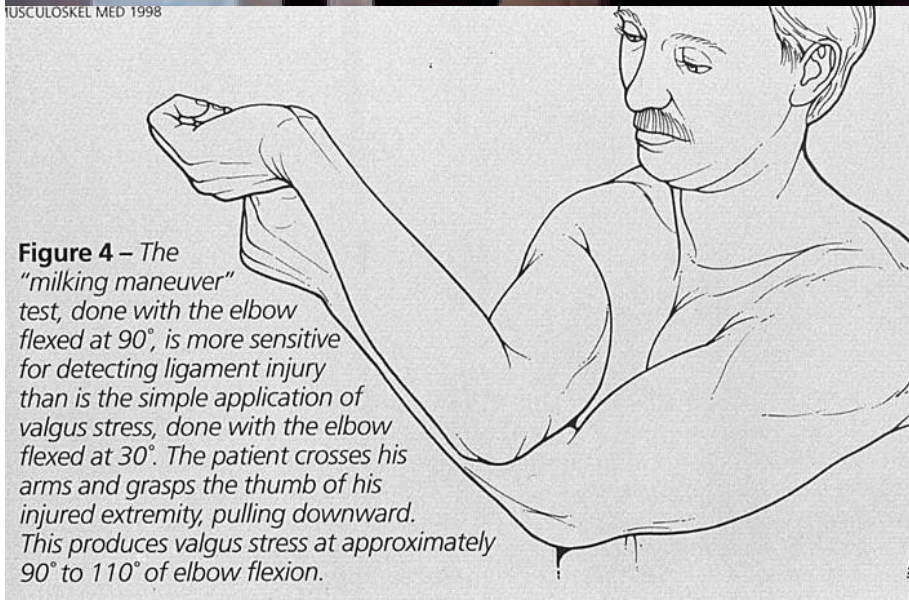



**Figure 4** – *The "milking maneuver" test, done with the elbow flexed at 90°, is more sensitive for detecting ligament injury than is the simple application of valgus stress, done with the elbow flexed at 30°. The patient crosses his arms and grasps the thumb of his injured extremity, pulling downward. This produces valgus stress at approximately 90° to 110° of elbow flexion.*

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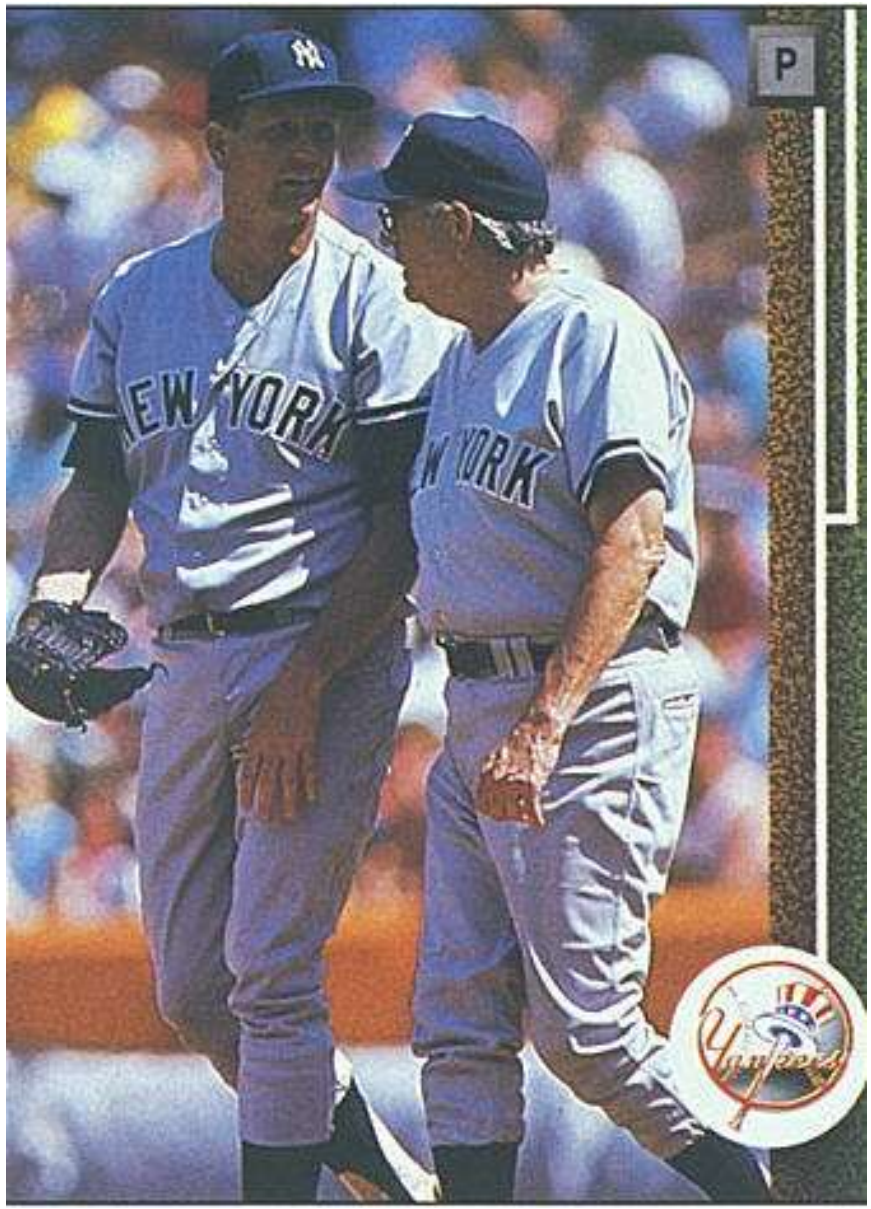
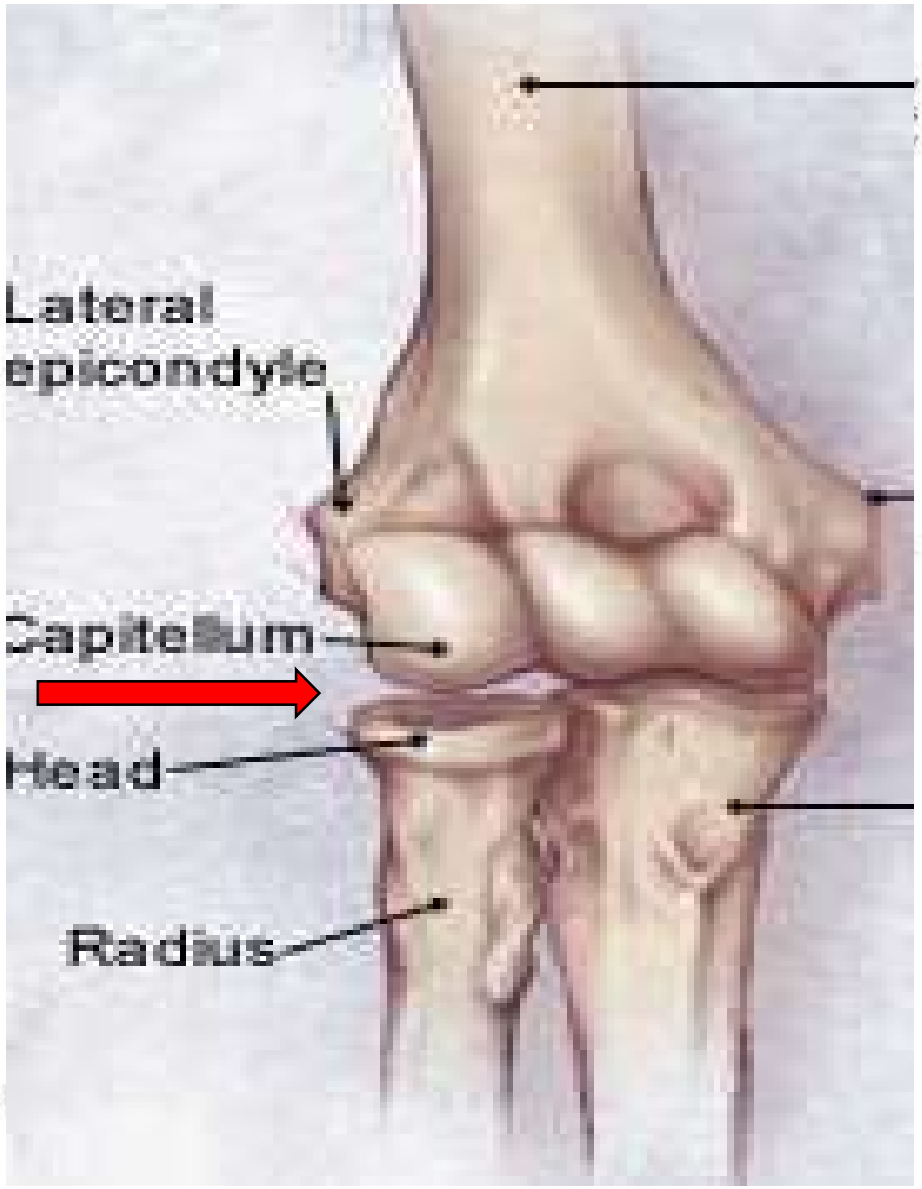


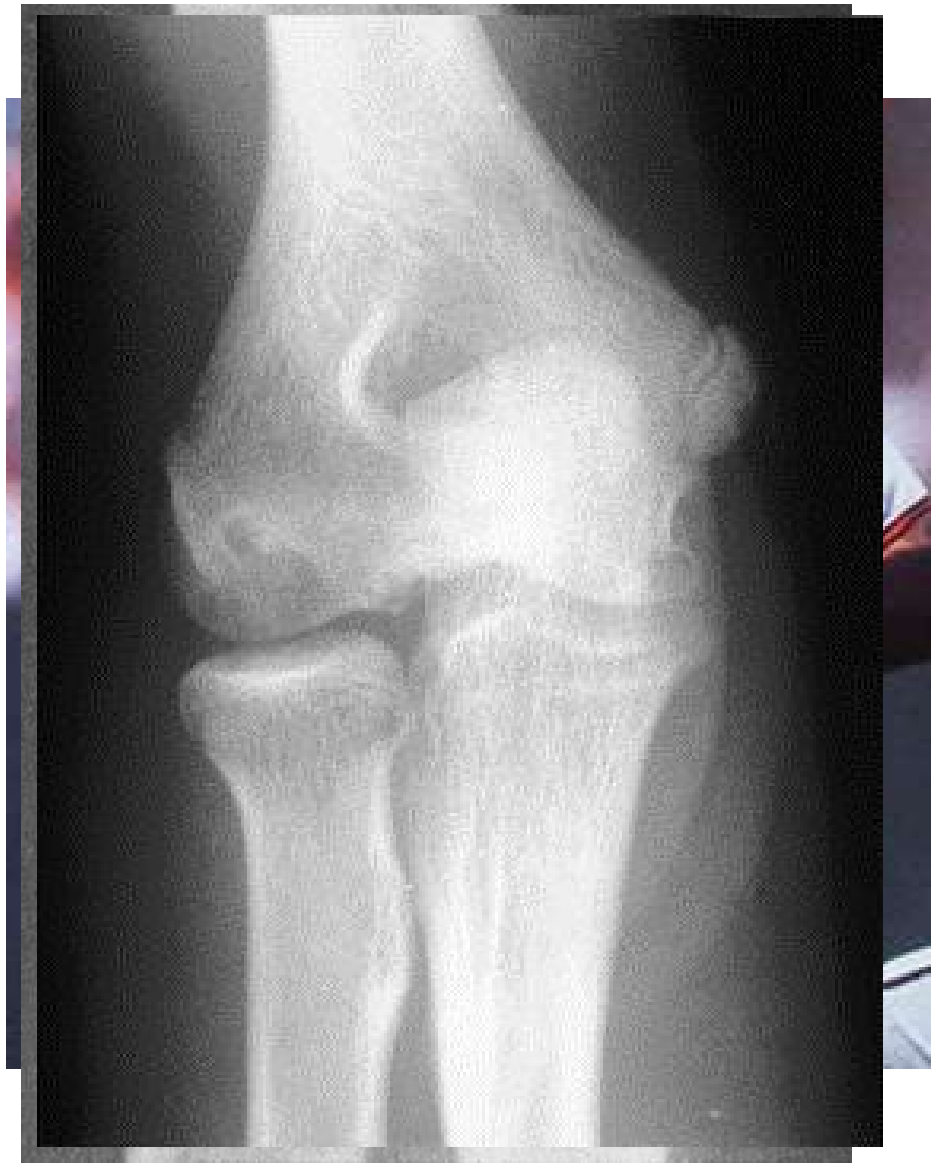
# Radiocapitellar Chondromalacia

- Due to compression forces created by valgus stress of throwing.
- **<u>Symptoms:</u>** ***lateral*** elbow pain; Can lead to OCD and loose bodies.
- **<u>Exam:</u>** tender at RC joint. Crepitus with sup/pronation.
- **<u>Treatment:</u>** same as for UCL injury.



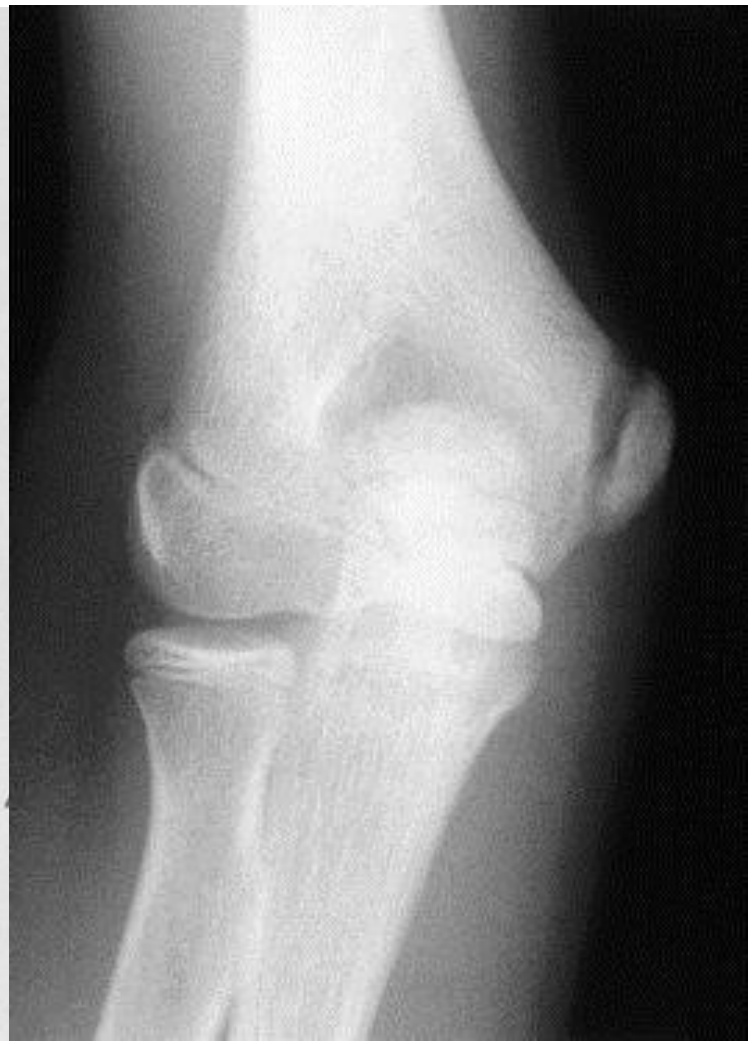
# Osteochondritis Dissecans Capitellum

- Result of chronic compression forces.
- **Symptoms:** lateral elbow pain, often with clicking or locking.
- **Exam:** tender at RC joint and with supination-pronation. Lack of extension.
- ***Xray***: flattening at capitellum, *crater* with loose body.
- **Treatment:** rest (6-18 mo). Last resort is drilling capitellar defect or remove loose body.



# Little League Elbow

- Traction at growth plate of medial epicondyle (weaker than UCL).
- **Symptoms:** insidious onset of medial elbow pain, often unreported.
- **Exam:** tender at epicondyle.
- ***X-rays*:** may show widening at growth plate (compare sides).
- **Treatment:** rest and ice. Graduated throwing after pain free 3-4 weeks or longer. Consider surgery if displaced.



# Lateral Epicondylitis (Tennis Elbow)

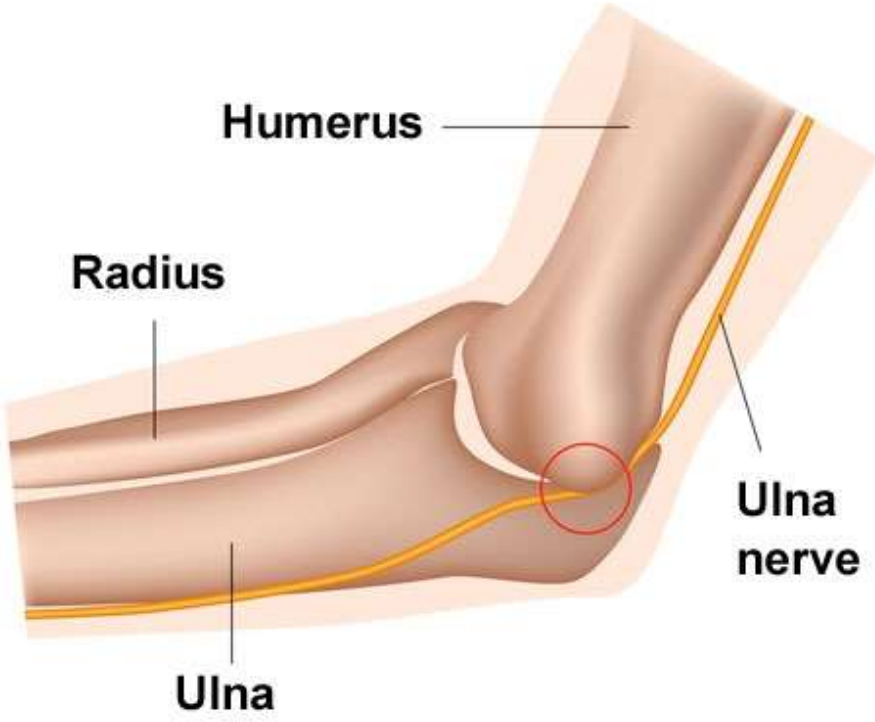
- Related to acute and chronic use of the wrist extensor and supinator muscles.
- **Symptoms:** pain at the lateral epicondyle.
- **Exam:** pain increased with resisted *extension/supination* or passive flexion/pronation (stretch tests). Also pain with resisted *long finger extension*.

# Lateral Epicondylitis Treatment

- Rest from the offending activity.
  - Ice or heat (whatever works best).
  - Stretching, then strengthening as pain resolves.
- Tennis specific:
  - 2-hand backhand.
  - Midsize racquet, less string tension, adjust grip (too large or small).
- ***Counter*** force brace and/or ***wrist*** splint as needed.
- If above fail, consider dry needling and/or Ntg patch (half .1mg/hr patch).
- Steroid injection proven ineffective.

# Medial Epicondylitis (Golfer's Elbow)

- Related to pull from wrist flexor/pronator muscles.
  - Less common than lateral.
  - See in elite tennis players.
- **<u>Symptoms/Exam:</u>** *tender* at medial epicondyle. Pain with resisted wrist flexion or pronation and *extension* stretch. May see ulnar nerve irritation.
- **<u>Treatment:</u>** same as lateral epicondylitis.

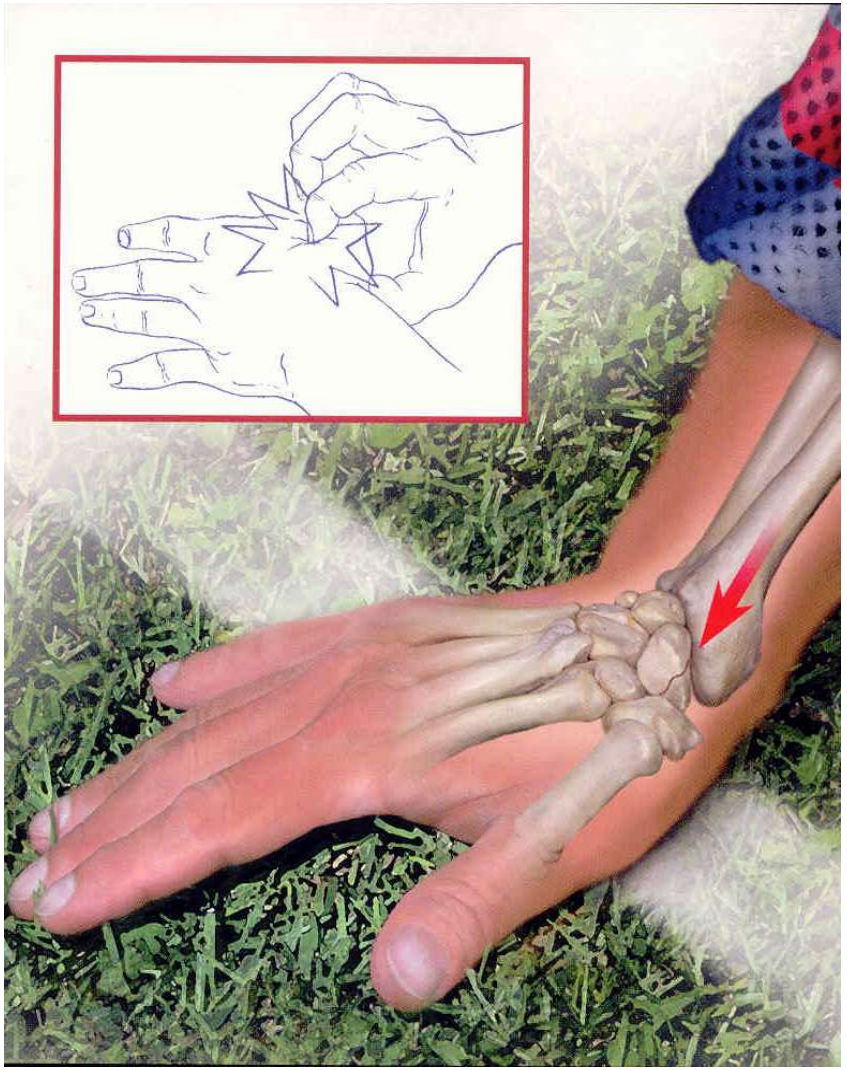



# Wrist Sprain

- Often caused by FOOSH injury. Must rule-out Scaphoid or distal radius fracture.
- **Symptoms/Exam:** diffuse wrist pain, and often limited ROM. Minimal swelling and no point bony tenderness.
- **Treatment:** RICE and NSAID's, along with a ***wrist*** splint. Early ROM.

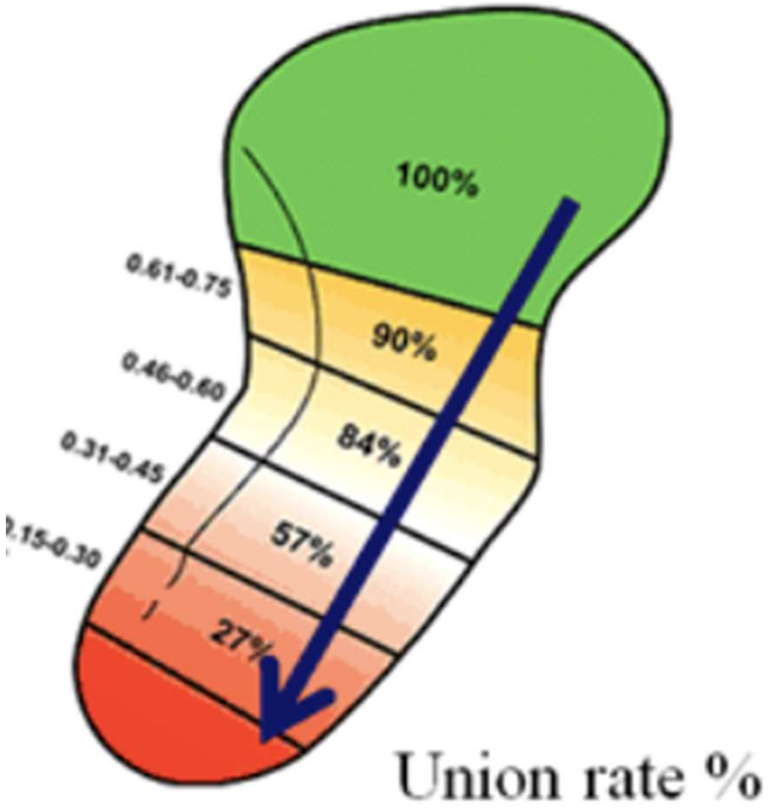
# Scaphoid Fracture

- Typically caused by FOOSH injury. High rate of non-union.
- **Symptoms/Exam:** tender in anatomic snuff box; Painful ROM. X-ray often negative.
  - CT, MRI or Bone scan may help confirm.
- **Treatment:** if suspected clinically, treat with thumb spica cast/splint (may need long arm) for 2 wks, then re-examine and X-ray (consider MRI or CT ).



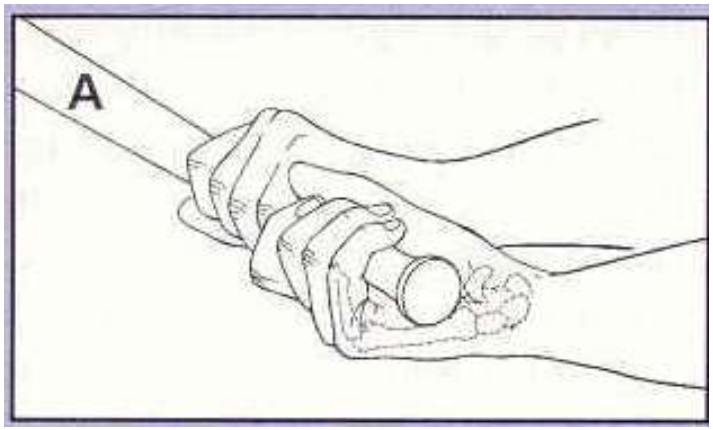
# Scaphoid Fracture (Treatment)

- The more proximal the fracture, the worse the prognosis.
- *Immobilize* in long arm thumb spica cast; Length of time depends on fracture location:
  - Distal pole: 6-8 weeks.
  - Waist: 12-16 weeks.
  - Proximal pole: 16-20 weeks.



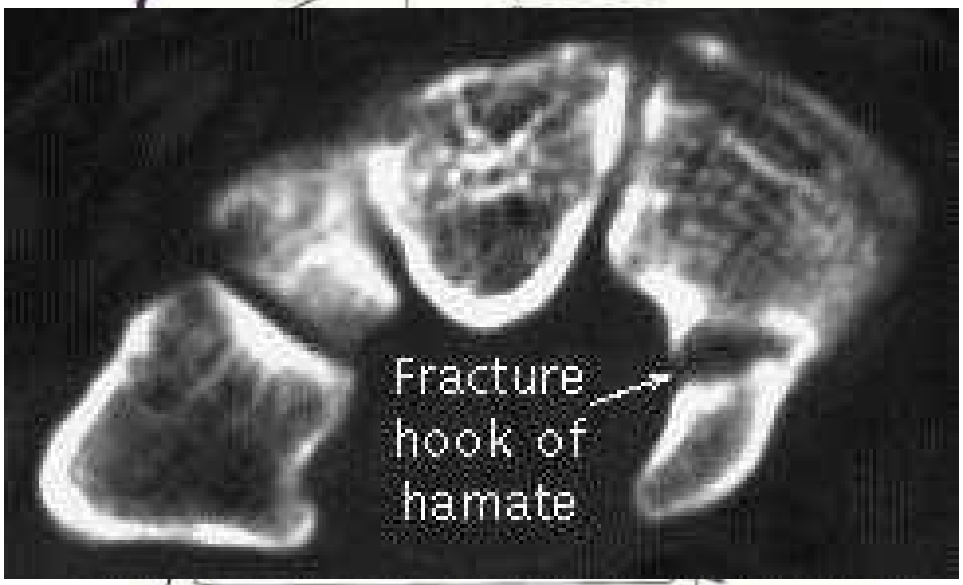
# Hook of Hamate Fracture

- Need high index of suspicion, often overlooked.
- From direct blow or swinging golf club, racquet or bat. May be stress fracture.
- **<u>Symptoms:</u>** pain over ulnar side of palm (often referred dorsally), aggravated by grasp. Ulnar nerve symptoms common.

# Hook of Hamate Fracture

- **<u>Exam:</u>** tender and swollen over hamate in hypothenar area. Pain with resisted DIP flexion at 4th & 5th fingers.
- **<u>X-ray</u>**: need *carpal tunnel view*. ***CT*** often helpful.
- **<u>Treatment:</u>** SA cast 4-6 weeks if non-displaced. Consider excision if displaced or non-union.

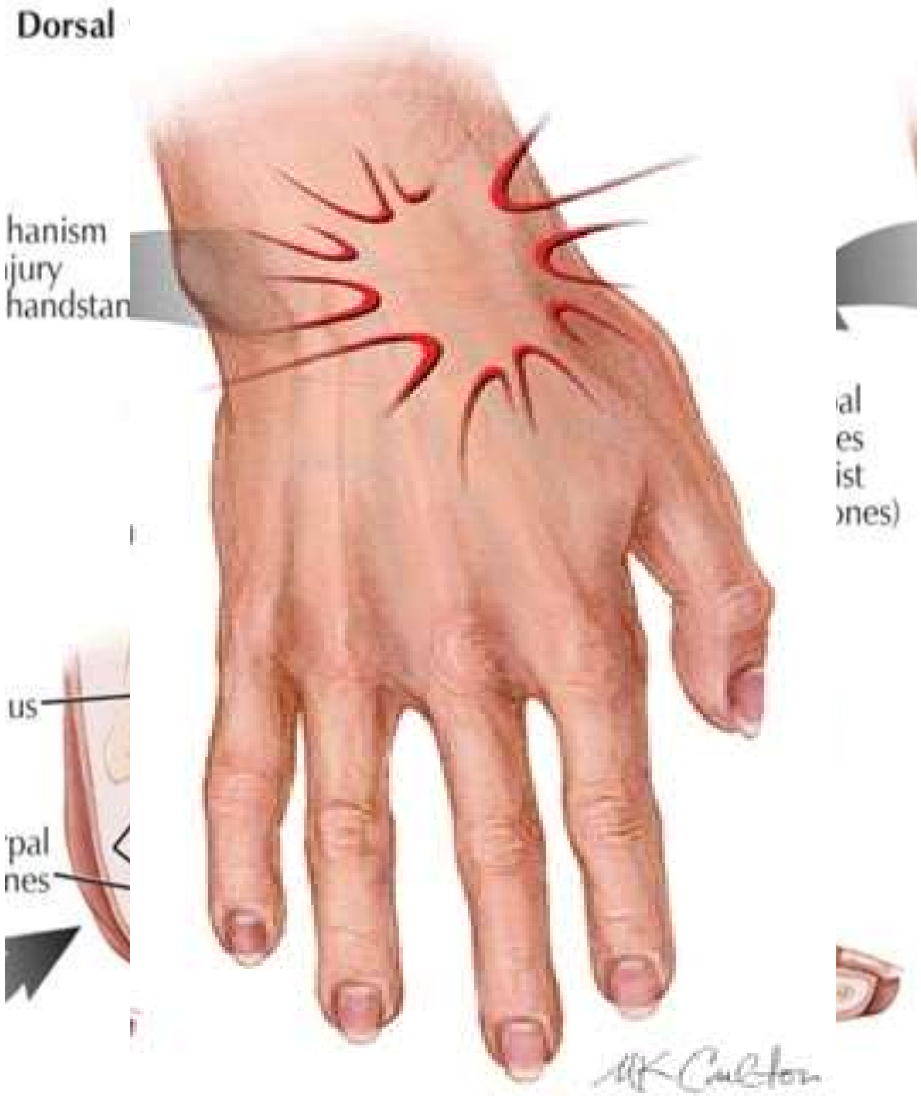



# Ulnar Nerve Entrapment at Wrist (Cyclist's Palsy)

- Seen in cyclists who lean on handlebars putting pressure on ulnar aspect of wrist.
- **Symptoms:** ***tingling*** and numb at 4th & 5th digits. Burning pain.
- **Exam:** weak hand intrinsics (weak thumb pinch).
- **Treatment:** avoid pressure.
  - Wrist splint and NSAID's prn.
  - Surgical decompression is last resort.

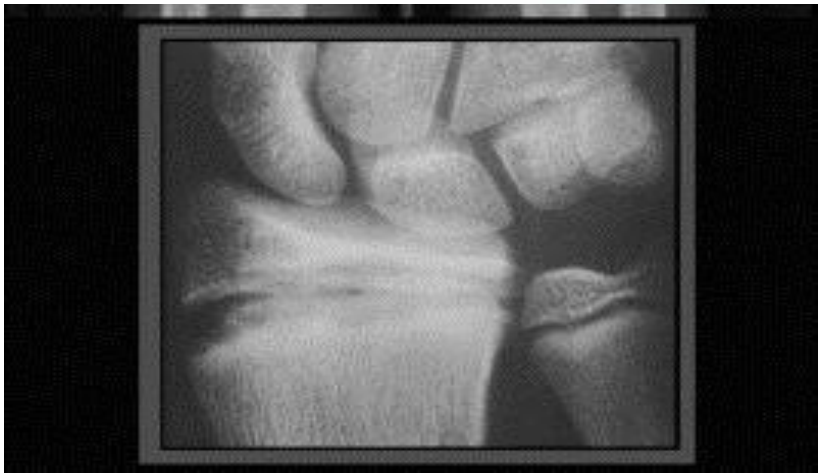
# Gymnasts Wrist

- Repetitive weight bearing hyperextension at wrist with tumbling etc, can lead to chronic pain.
- **<u>Symptoms:</u>** ***pain*** at dorsum of wrist, worse with loading in extension.
- **<u>Exam:</u>** *TTP diffusely* over dorsum at mid-carpal area. Pain worse at extremes of wrist motion.



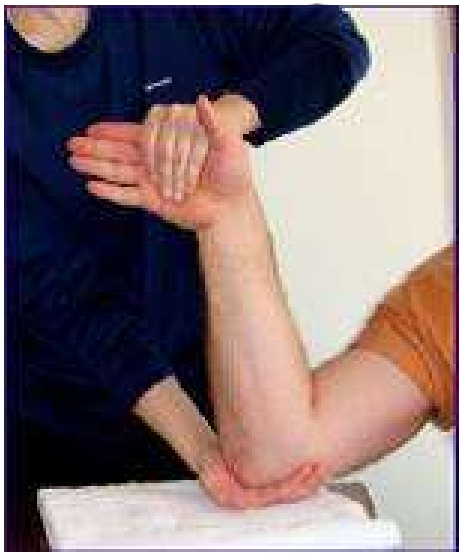
# Gymnasts Wrist

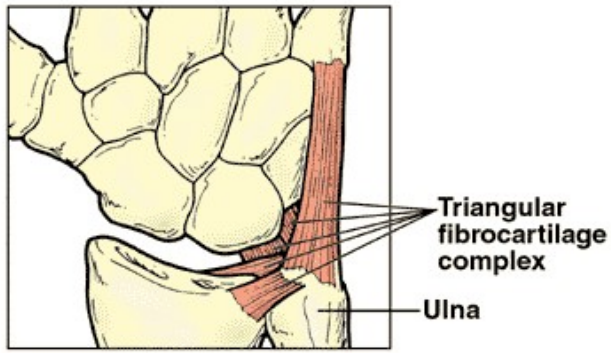
- **X-rays:** radius growth plate closes, ulna remains open causing abnormal wrist development (*positive ulnar variance*).
- **Treatment:** icing and rest with wrist splinting or cast. Check technique. ROM & rehab with gradual return. Ulnar shortening with osteotomy is last resort

# Triangular Fibrocartilage Complex (TFCC) Injury

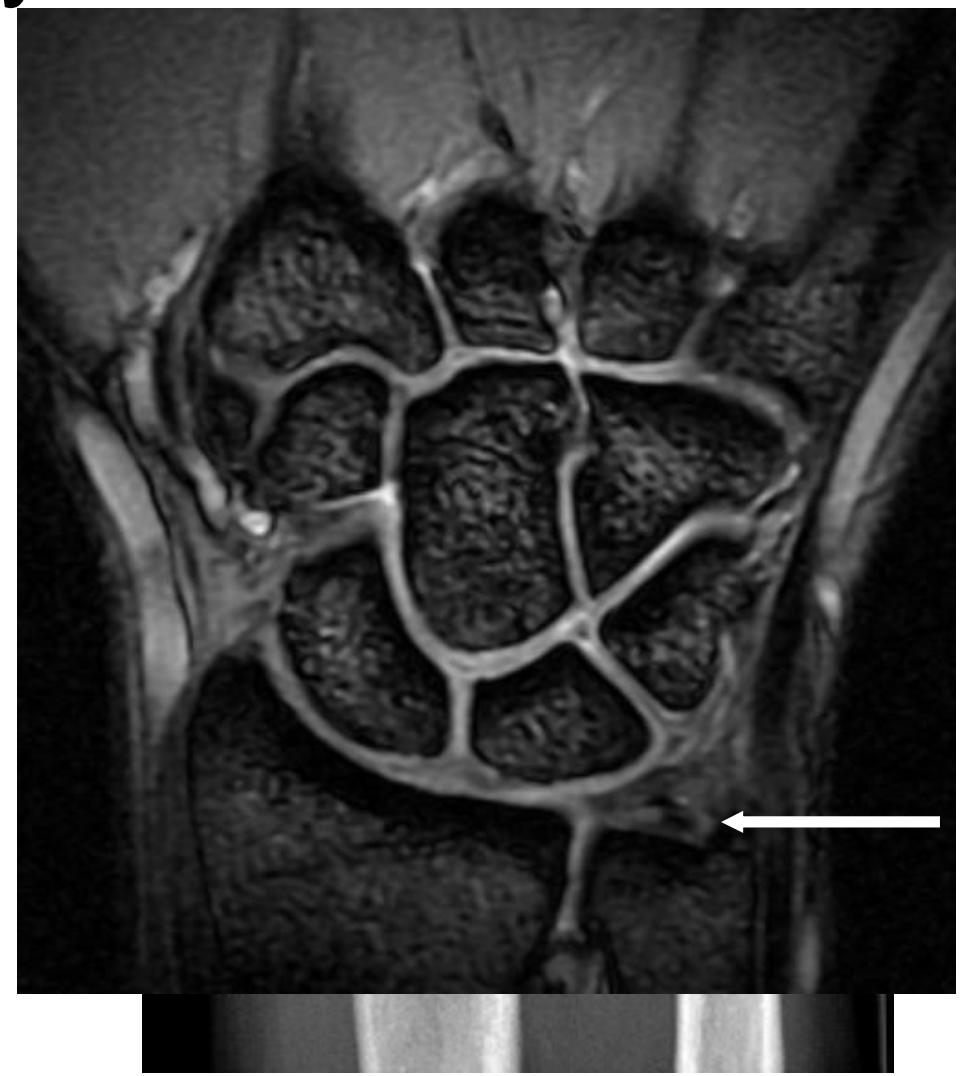
- Small cartilage distal to ulna can be injured by fall, twist or swinging bat or racquet.
- **Symptoms:** pain with clicking or catching just distal to ulna.
- **Exam:** TTP distal to ulnar styloid. Pain *aggravated* by wrist hyperextension combined with ulnar deviation.





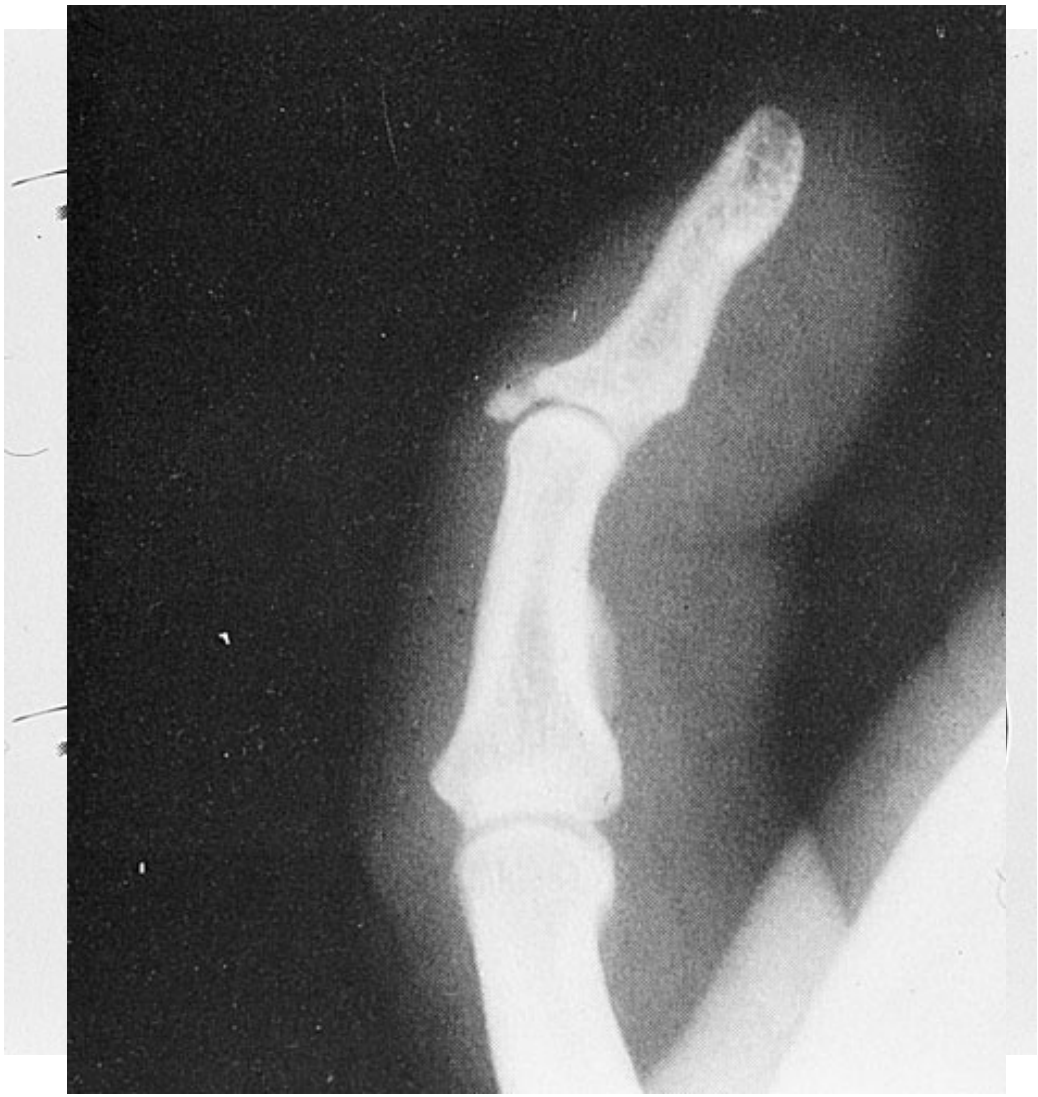
# Triangulofibrocartilage Complex (TFCC) Injury

- **X-ray**: to rule out fracture. ***MRI*** best to show injury.
- **Treatment:** rest with splint or cast. Ice and NSAID's. ROM and rehab exercises. Cortisone and surgery are last resort.



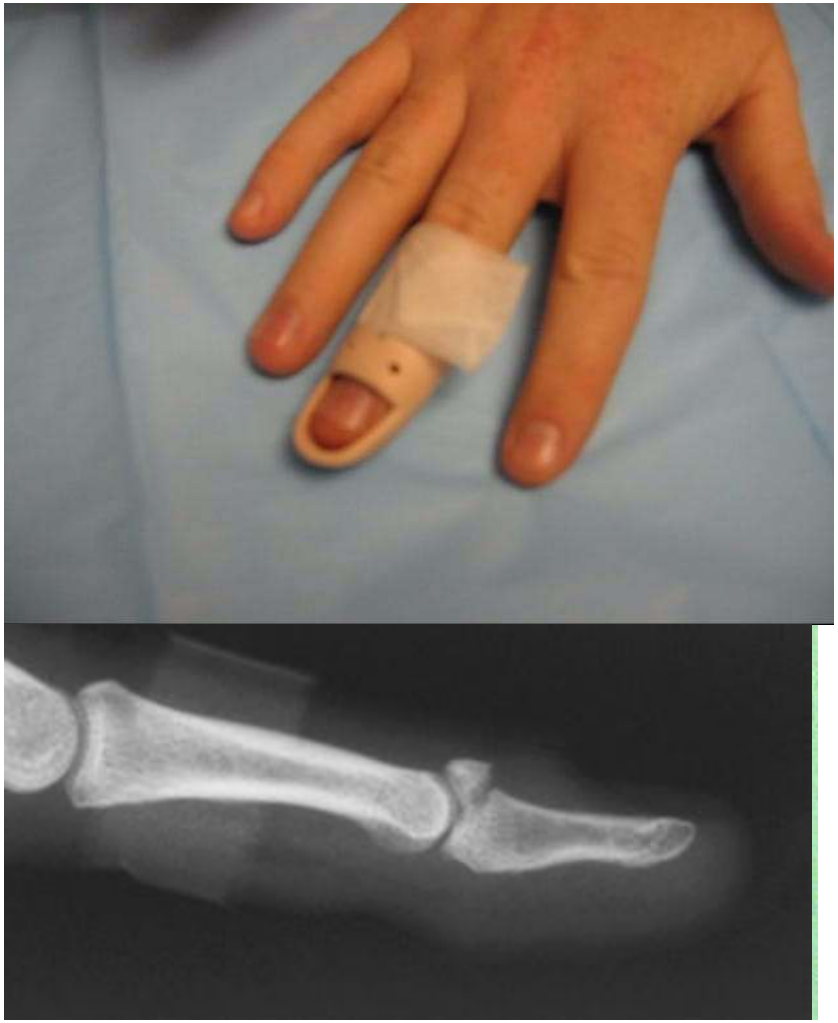
# Mallet Finger (Baseball finger)

- Rupture or avulsion of extensor tendon from base of distal phalanx. Caused by forceful flexion of DIP joint.
- **Symptoms/Exam:** unable to actively extend distal phalanx.
- ***X-ray*** to rule-out bony avulsion.



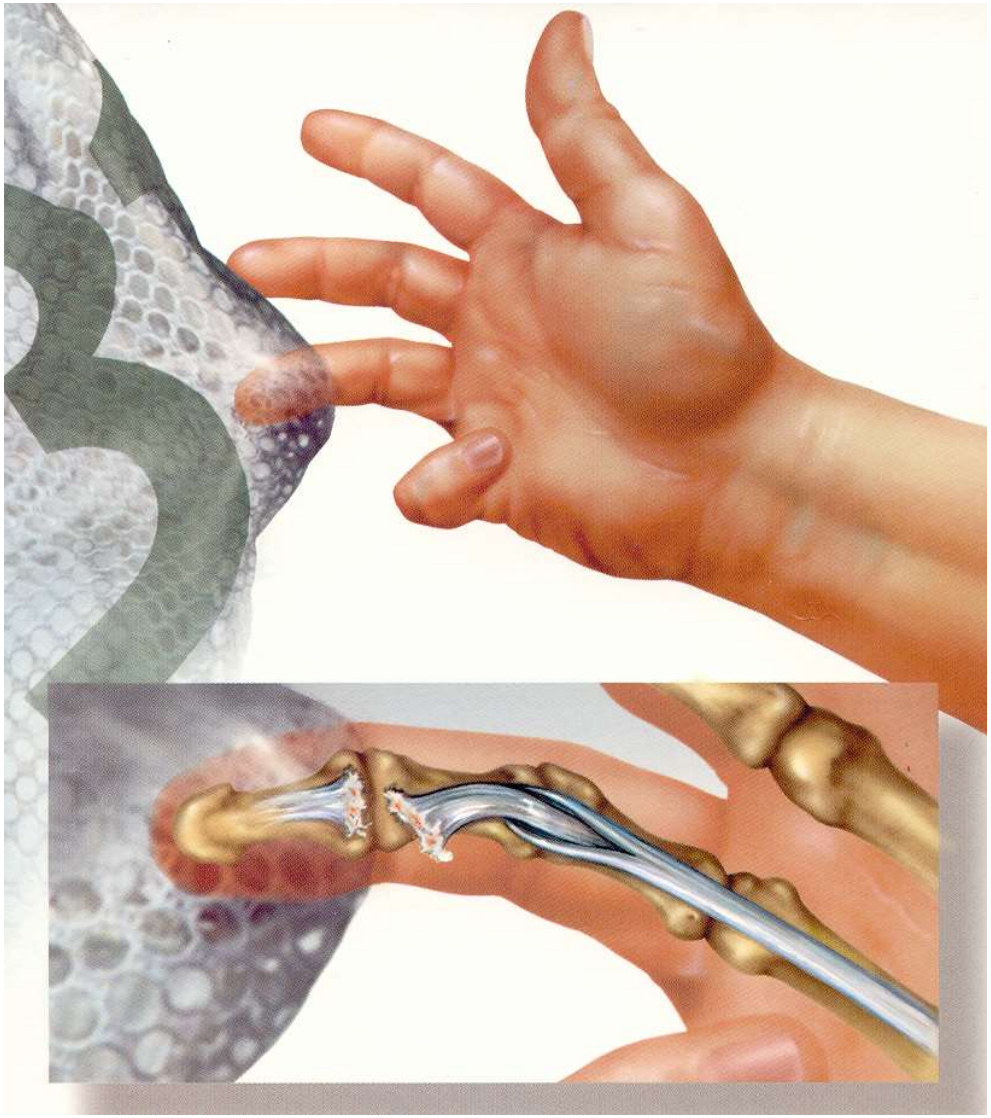
# Mallet Finger (Treatment)

- Immobilize DIP in extension (stack splint); 4 wks if avulsion, 6-8 wks if no fracture.
- ***Be*** careful removing spint.
- Start guarded active flexion, and protect during activity and at night another 2-4 wks.
- *Surgery* if avulsion involves >1/3 of joint surface, or if delayed treatment. (rarely causes functional impairment)



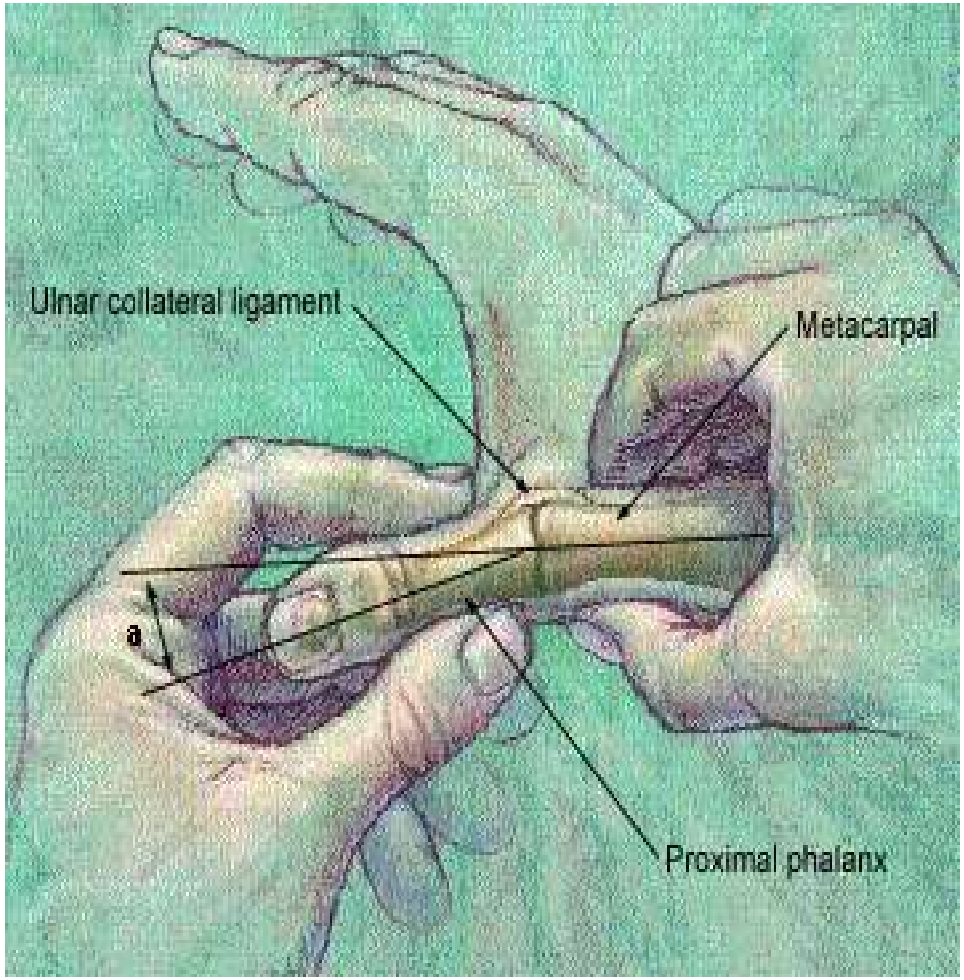
# Jersey Finger

- Avulsion or rupture of the DIP flexor tendon.
  - Ring finger most commonly involved (followed by 5th finger).
- **<u>Symptoms/Exam:</u>** unable to actively flex DIP joint (PIP flexion in tact). Tender over DIP or PIP area (tendon retracts).
- **<u>Treatment:</u>** prompt surgery required.



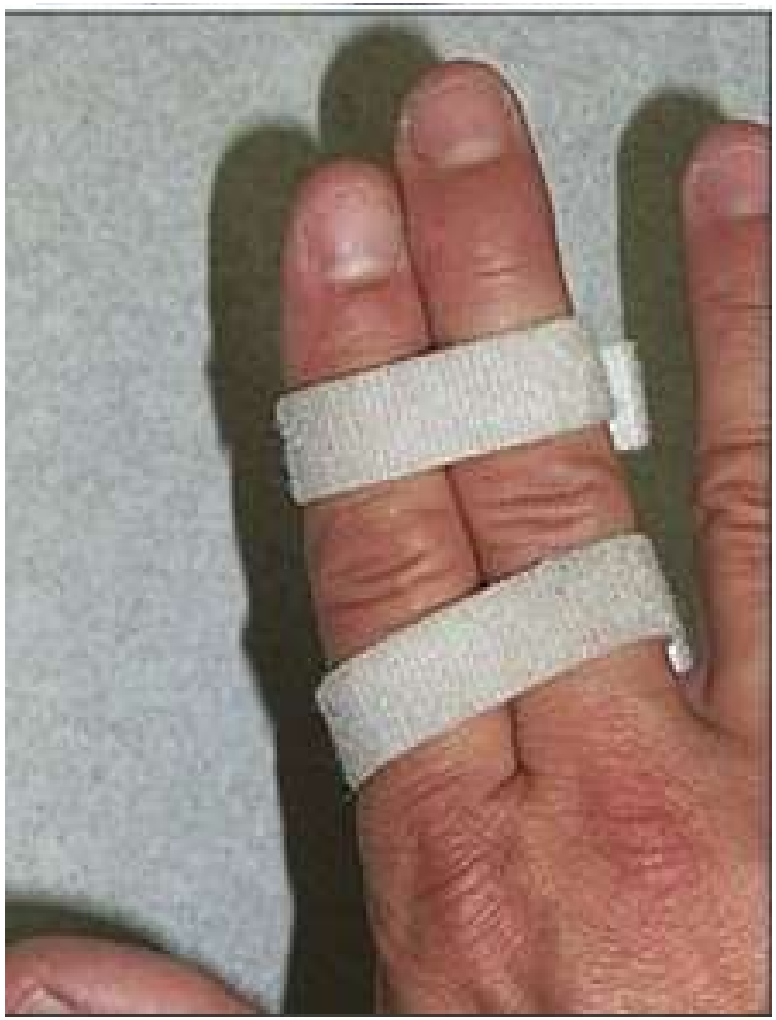
# Ulnar Collateral Ligament Injury (Skier's Thumb)

- Caused by forced abduction of 1st MCP joint.
- **Symptoms:** weak pinch, with ***pain*** at ulnar aspect of 1st MCP.
- **Exam:** ***stress*** test ligament for pain or laxity.
- **X-ray:** to rule out avulsion.
- **Treatment:** SA thumb spica splint x 3-6 wks. Surgery for complete rupture (Stener lesion) or displaced avulsion.



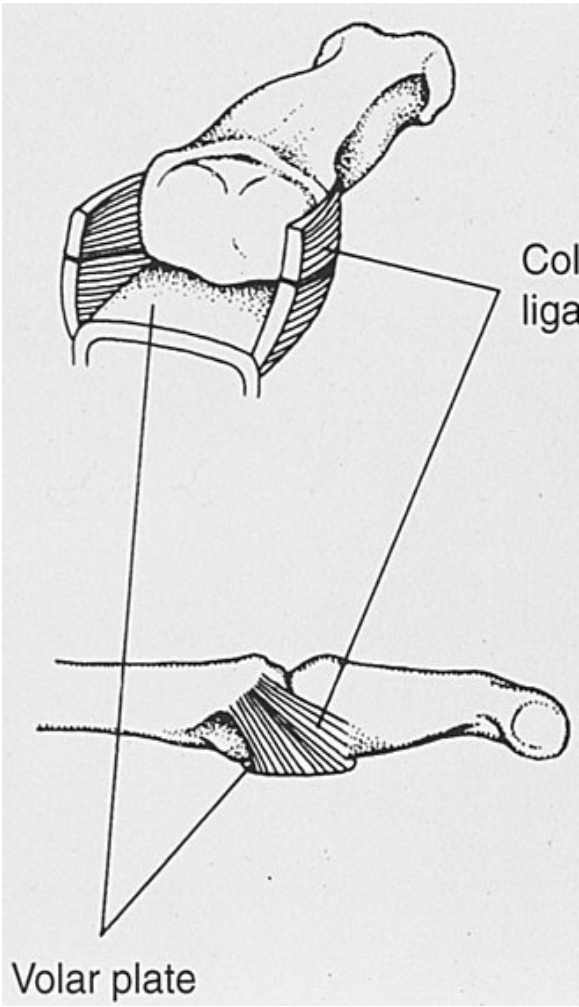
# Finger Collateral Ligament Tears (Jammed Finger)

- Varus or valgus stress at PIP (or DIP) joint injures ligaments.
- **Symptoms/Exam:** tender over side of joint. Stress test ligament to look for laxity. Check stability with active ROM.
- **Treatment:** ***buddy*** tape for 2-3 wks, and during activity another 3 wks. May need surgery if unstable with ROM.



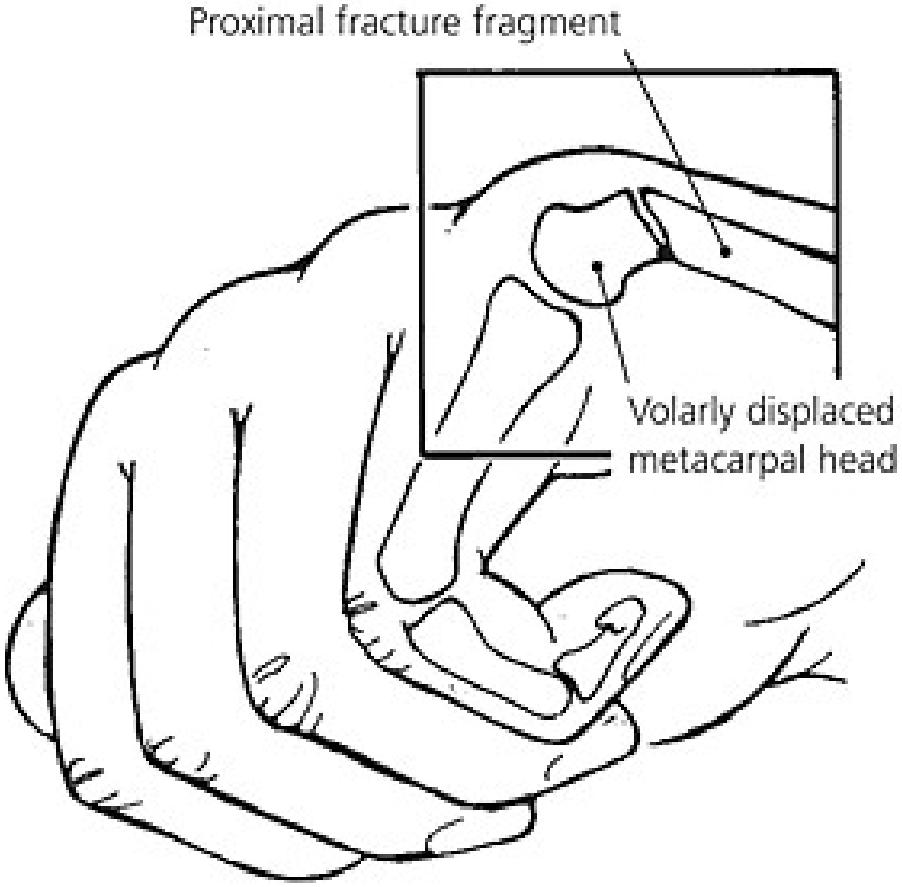
# Dorsal PIP Dislocations

- Caused by hyperextension injury at PIP that disrupts *volar plate*.
  - Rare at DIP or MCP.
  - Rare to see volar dislocation.
- **<u>Symptoms/Exam:</u>** visible deformity; Middle phalanx rides dorsally over proximal. **X-ray** for avulsion fracture.
- **<u>Treatment:</u>** digital block and ***closed*** reduction (exam for hyperextension laxity). ***Extension*** block splint in 20-30$^{o}$ flexion x 3-4 wks, then buddy tape.



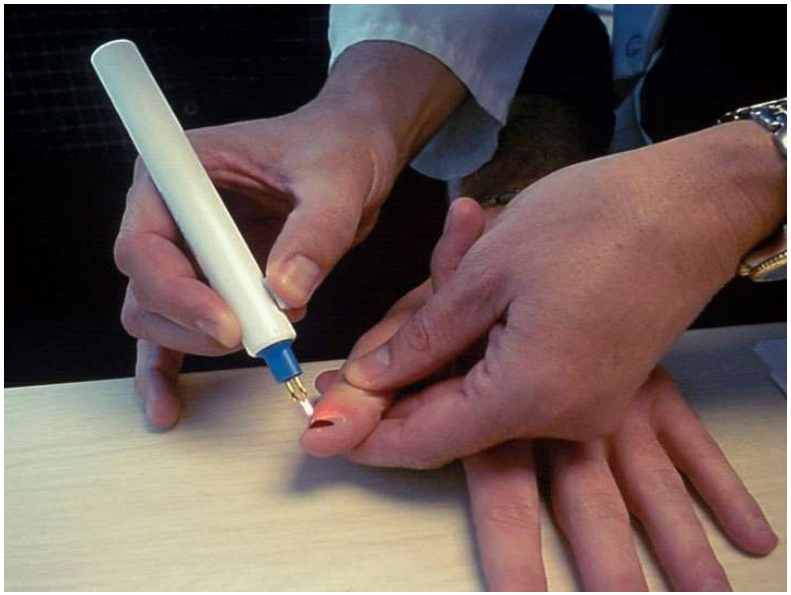
# 5th Metacarpal Neck Fracture (Boxer's Fracture)

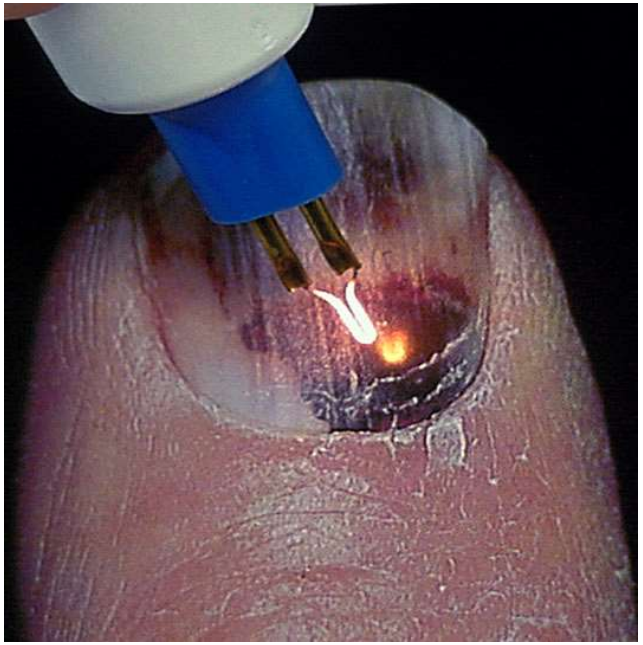
- Often caused by punch with closed fist.
- **Symptoms/Exam:** pain, swelling and tenderness at 5th knuckle. May lose knuckle. Beware bite injury.
- **Treatment:** immobilize with ulnar gutter splint for 4 wks. May accept up to 30° angulation (or more).



# Subungual Hematoma

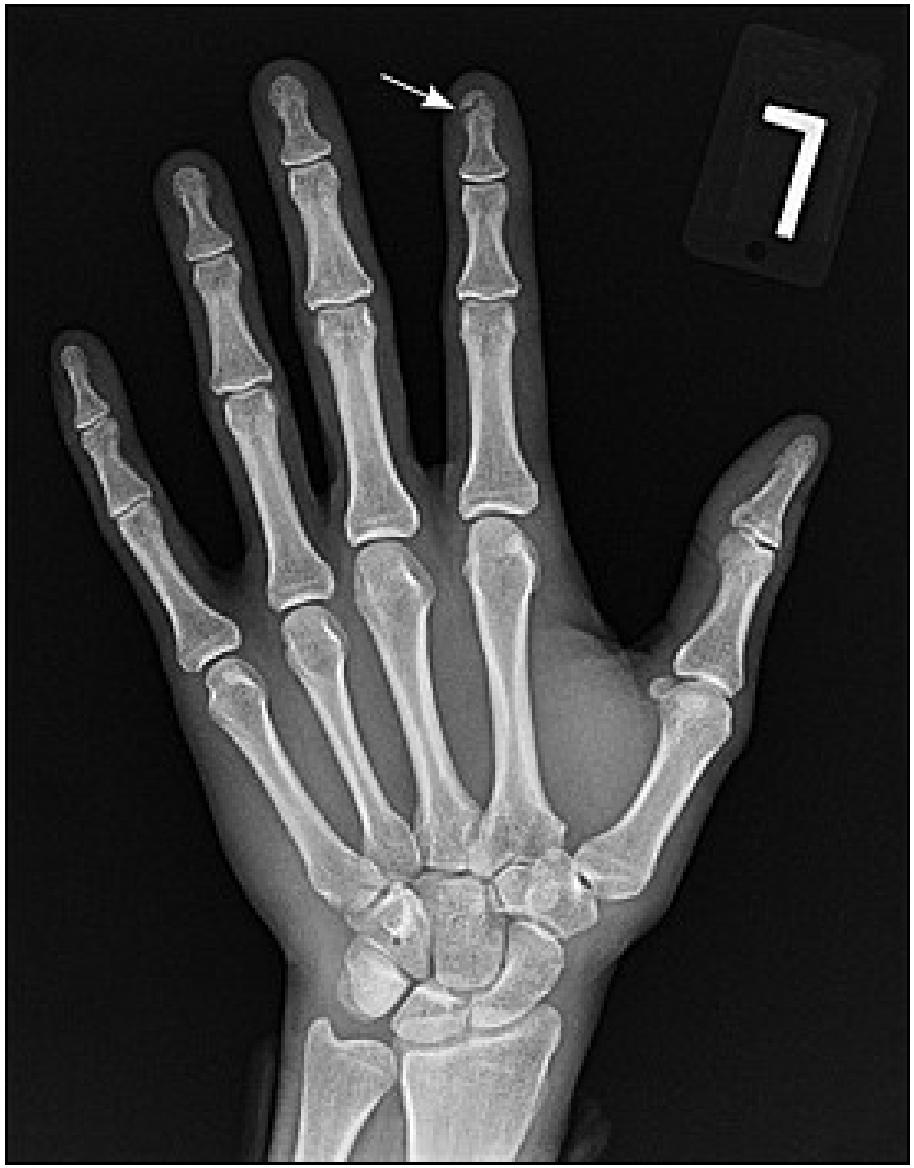
- Bleeding under the nail related to trauma. Pain related to increased pressure.
- **Symptoms/Exam:** visible hematoma under nail; Very tender. Check for avulsion of nail plate. X-ray for fracture.
- **Treatment:** drain as needed to relieve pain, using hot cautery. Hematoma >50% may indicate a nail bed laceration that needs repair.





# Tuft Fracture of Finger

- Usually from crush type injury at tip of finger.
- **Symptoms/Exam:** pain and swelling at tip of finger; Often subungual hematoma.
- **Treatment:** splint distal phalanx and DIP; Avoid tight circumferential taping. Drain associated hematoma as needed. Often painful for months.



# Summary

- Majority of sports related problems involving the elbow, wrist and hand can be effectively managed by primary care.
- Key to diagnosis is thorough history and physical exam, along with X-ray when significant injury is suspected.
- Keep in mind the potential for poor outcome with many of these injuries.

# Thank You!