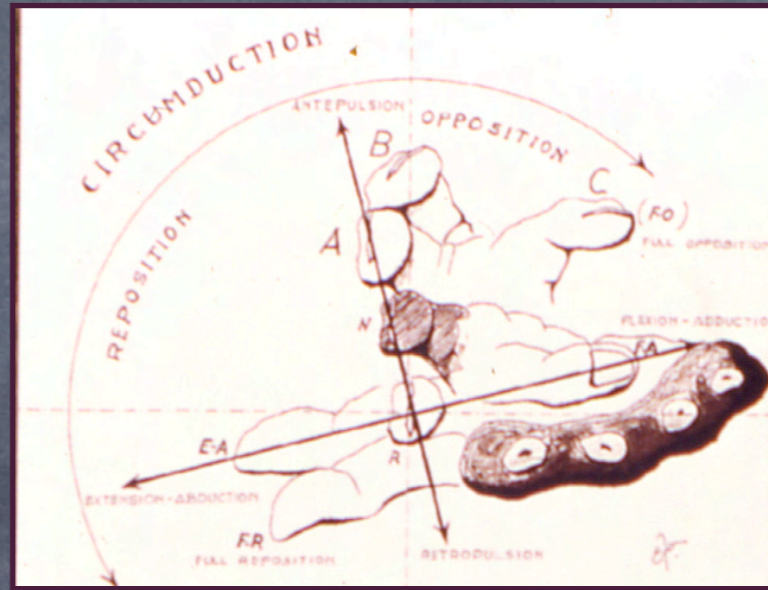


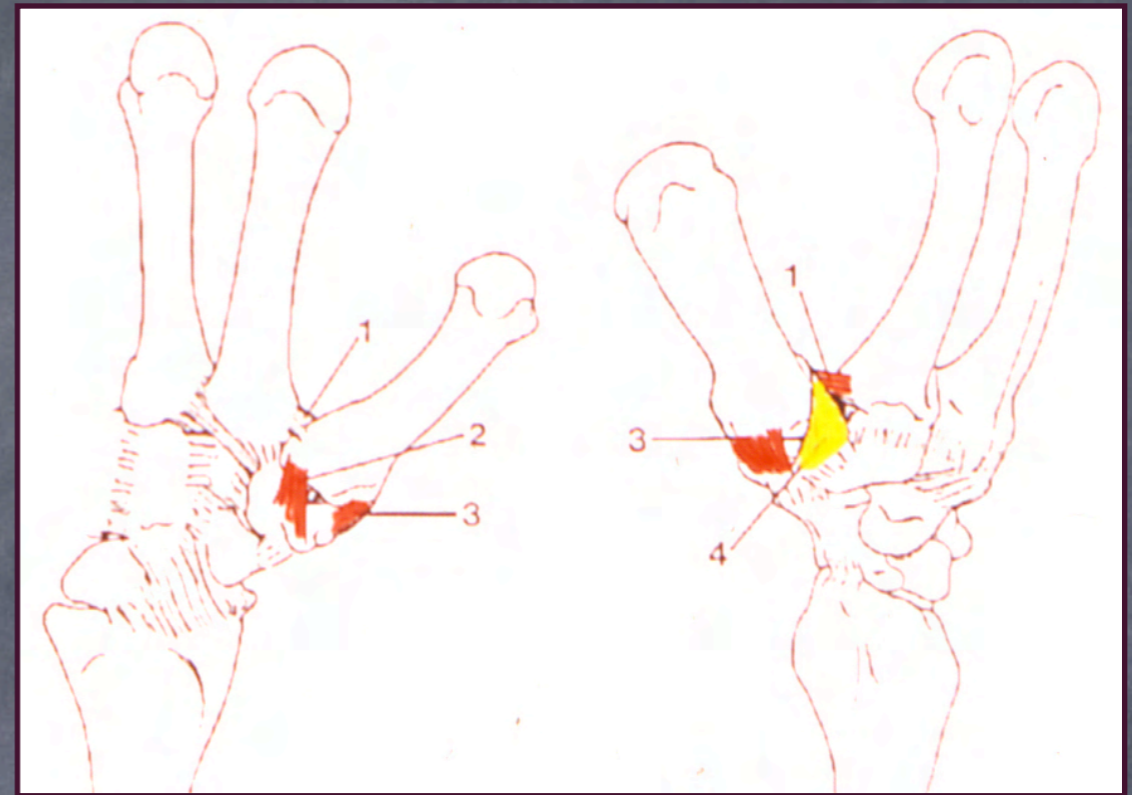
# Sprains and dislocations of the thumb ray



Christian Dumontier

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Paris

# TM joint



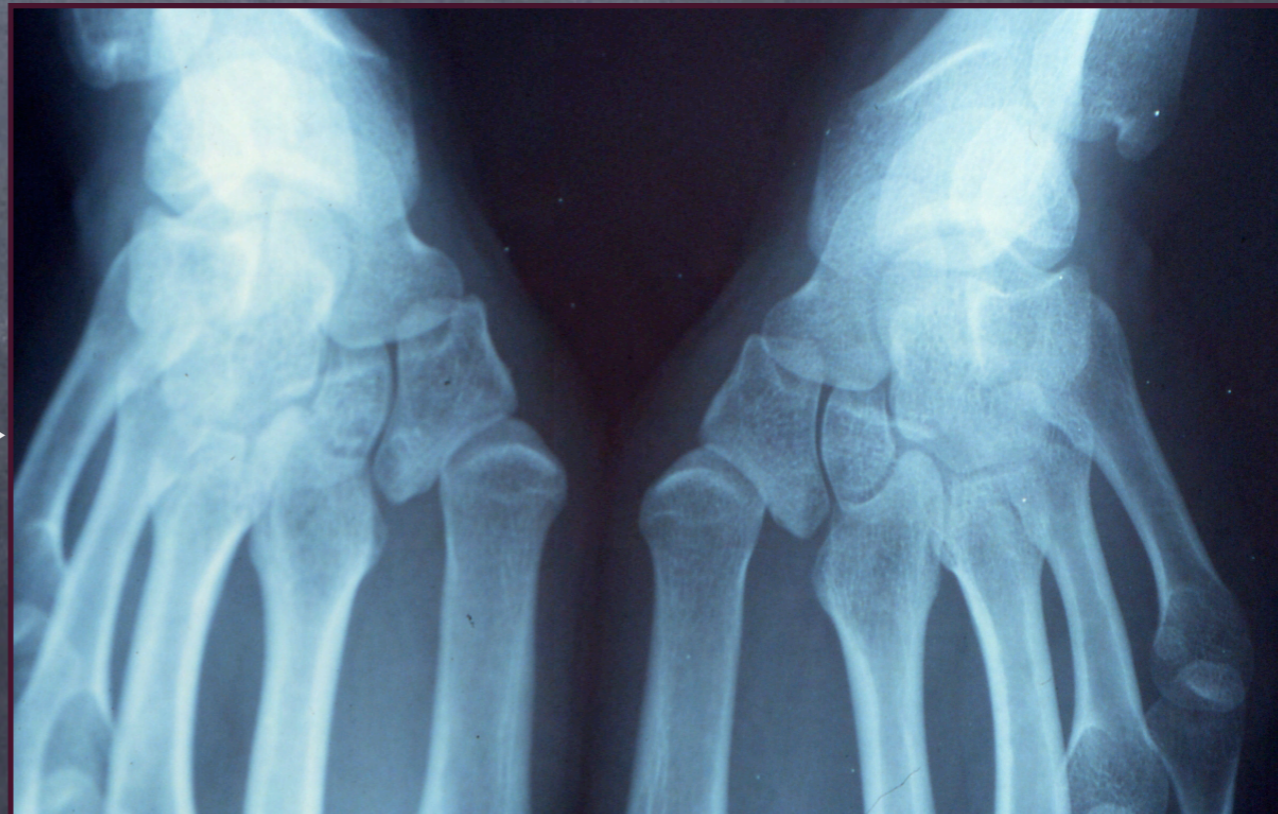
- Rare injuries
- Clinical diagnosis includes localized pain, swelling, and sometimes laxity in one or two planes or even a deformity
- Radiographs (Kapandji's) are mandatory to eliminate a Bennett's fracture, much more frequent





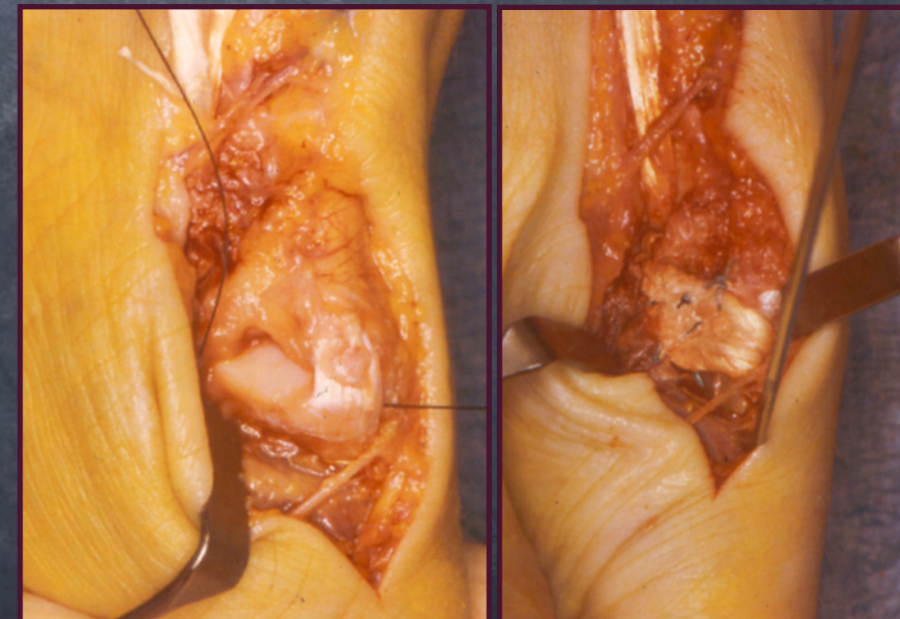
Radiographs are sometimes difficult to read, so in case of doubt

Stress radiographs



# Treatment

- Benign sprains: Strapping
- Severe sprains: thumb spica cast
- Dislocations:
  - Orthopedic reduction
  - Either K-wires fixation
  - Or ligamentous reconstruction



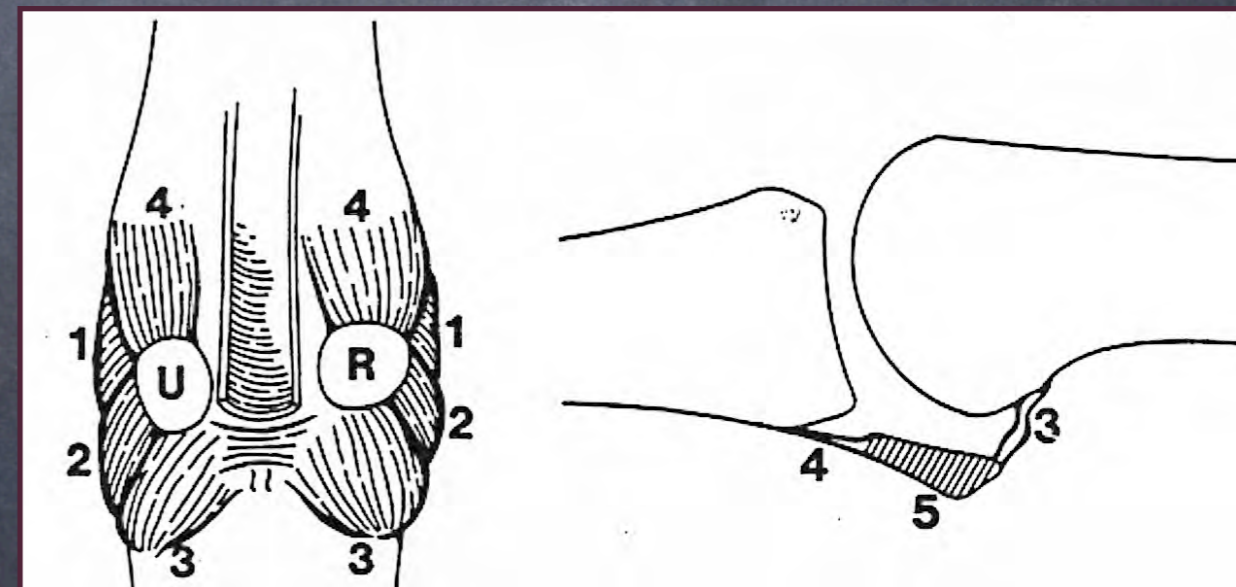
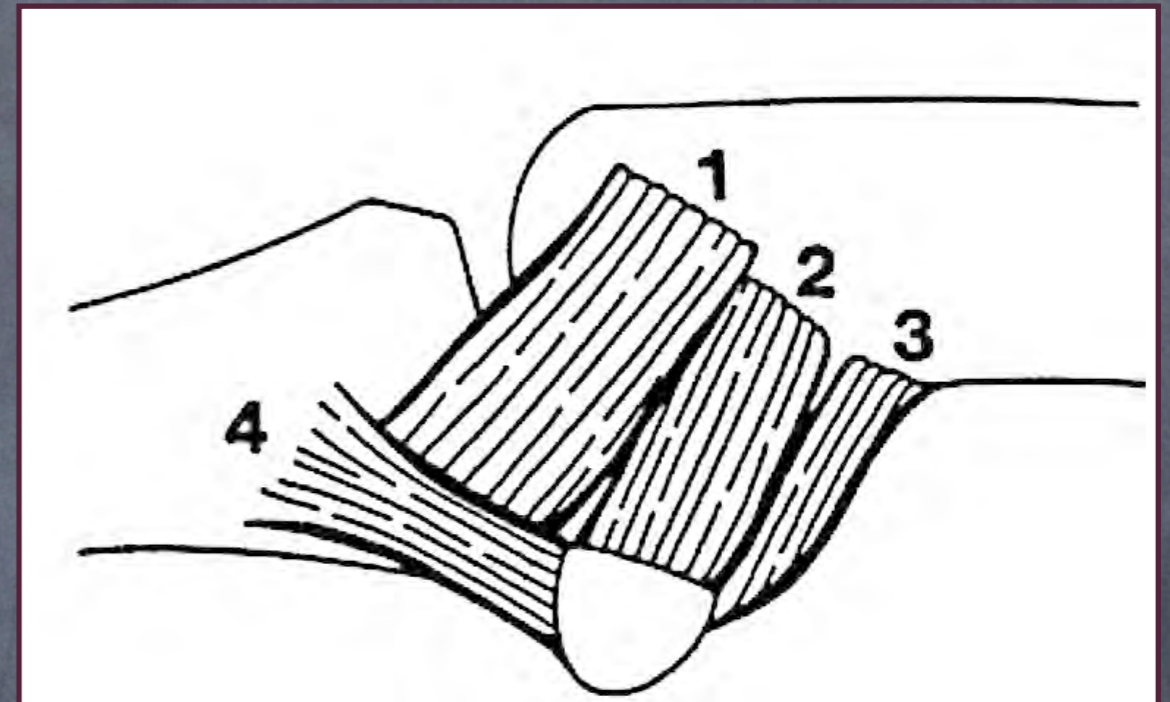
# Thumb metacarpophalangeal injuries

- Frequent injuries
- Clinical diagnosis is rather easy
- Do not miss the severe injuries which are surgical indications +++



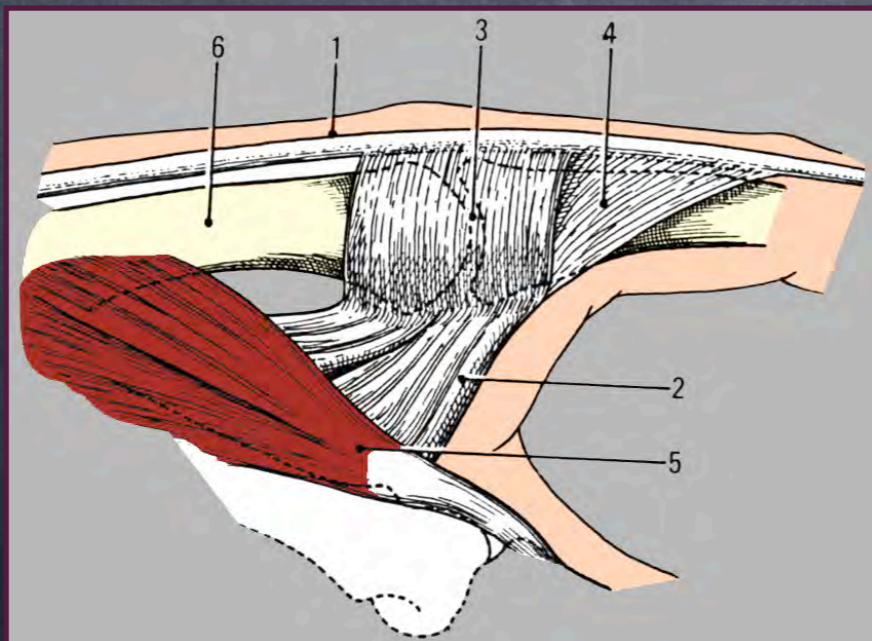
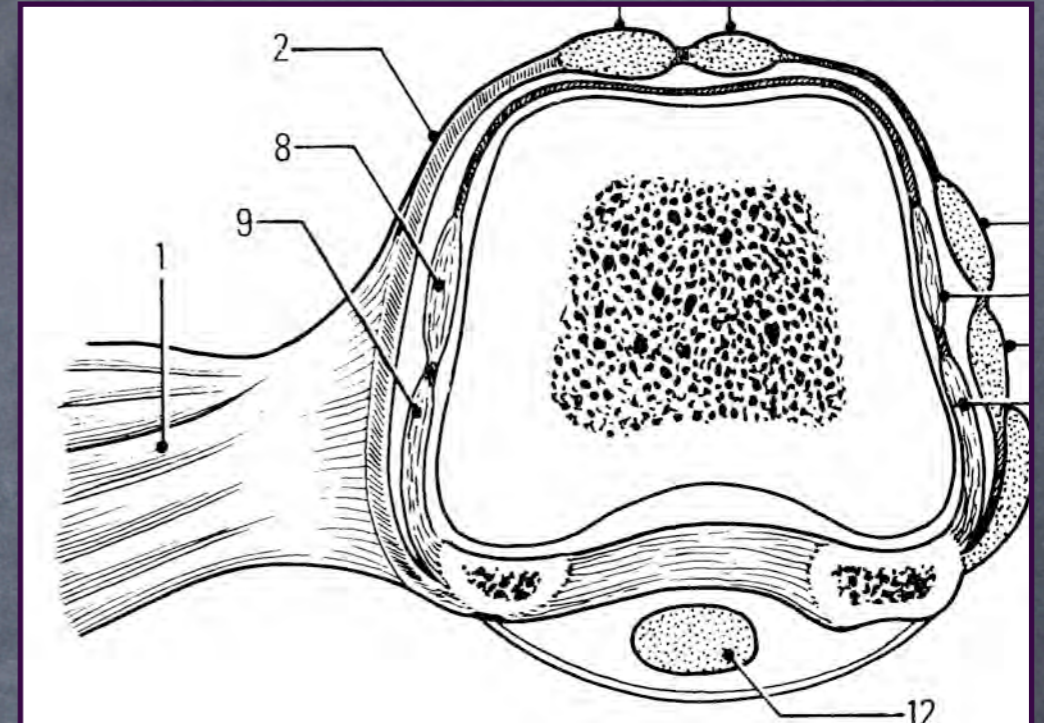
# Anatomy of the MP joint

- Medial side
- Lateral side
- Anterior (volar plate)



# The medial side

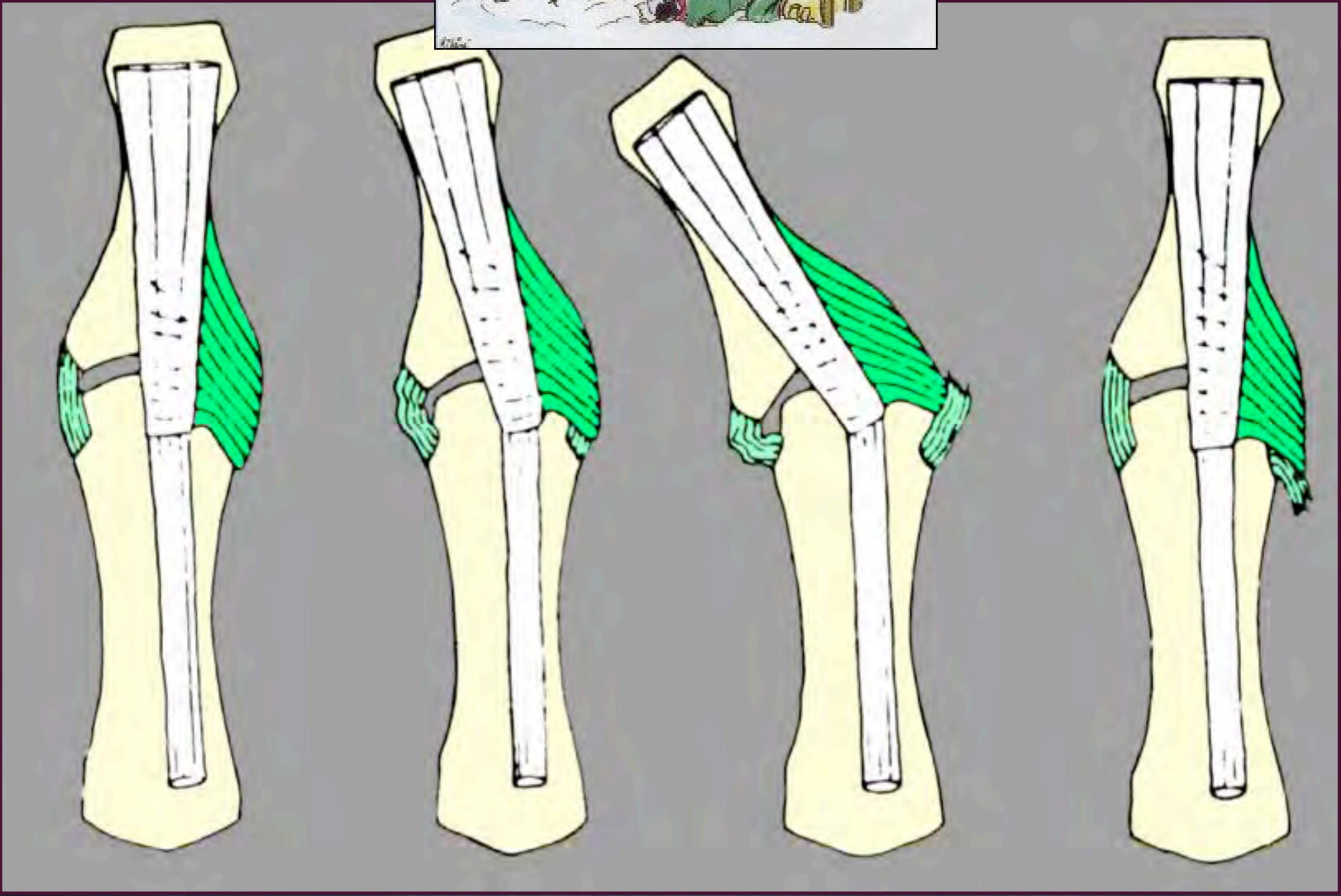
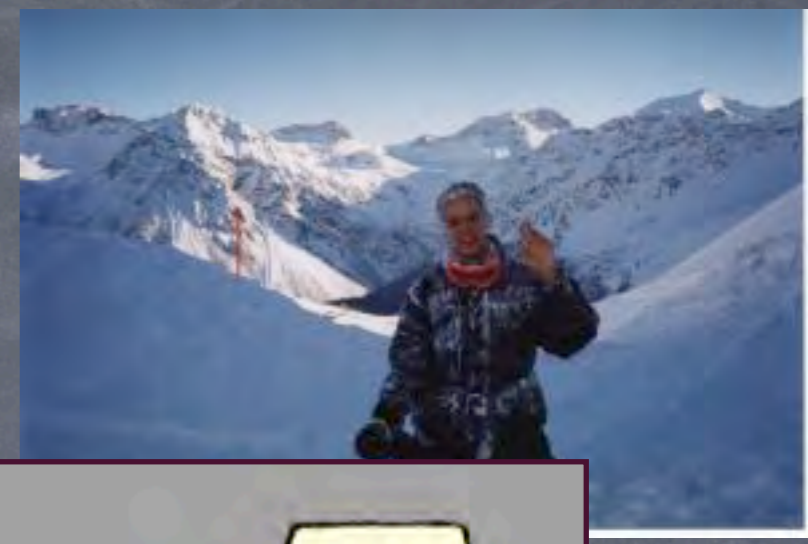
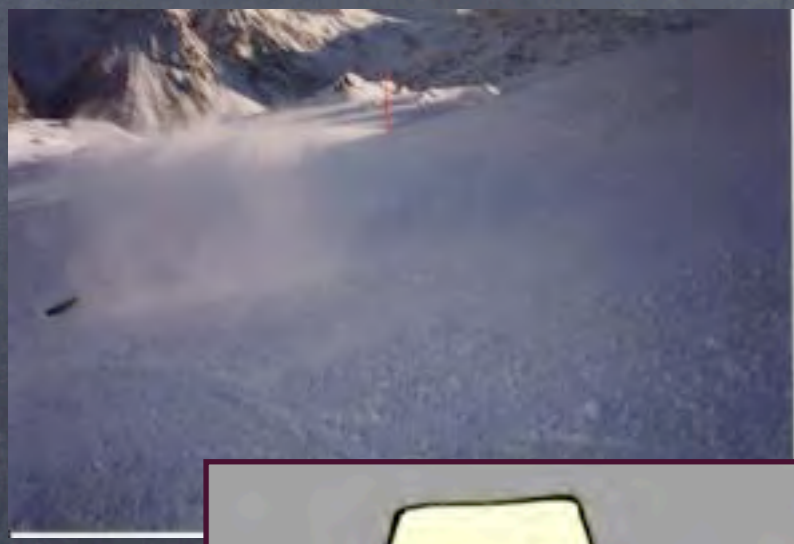
- The medial collateral ligament has two bands
- That are covered with the dorsal expansion of the adductor pollicis

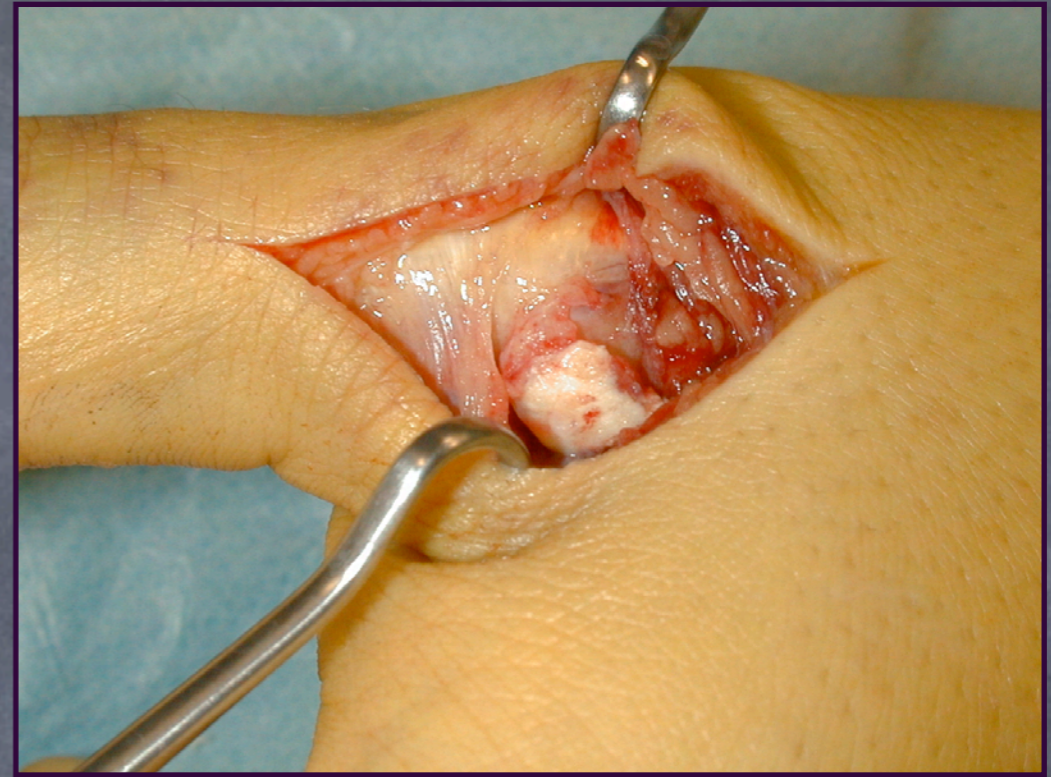
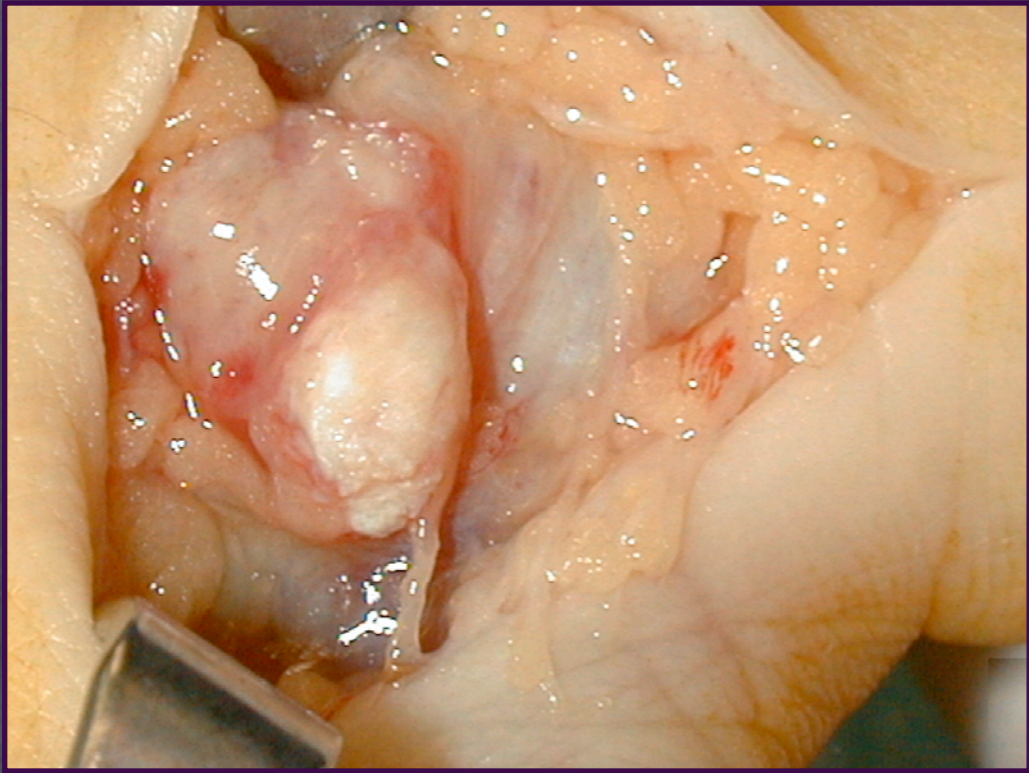




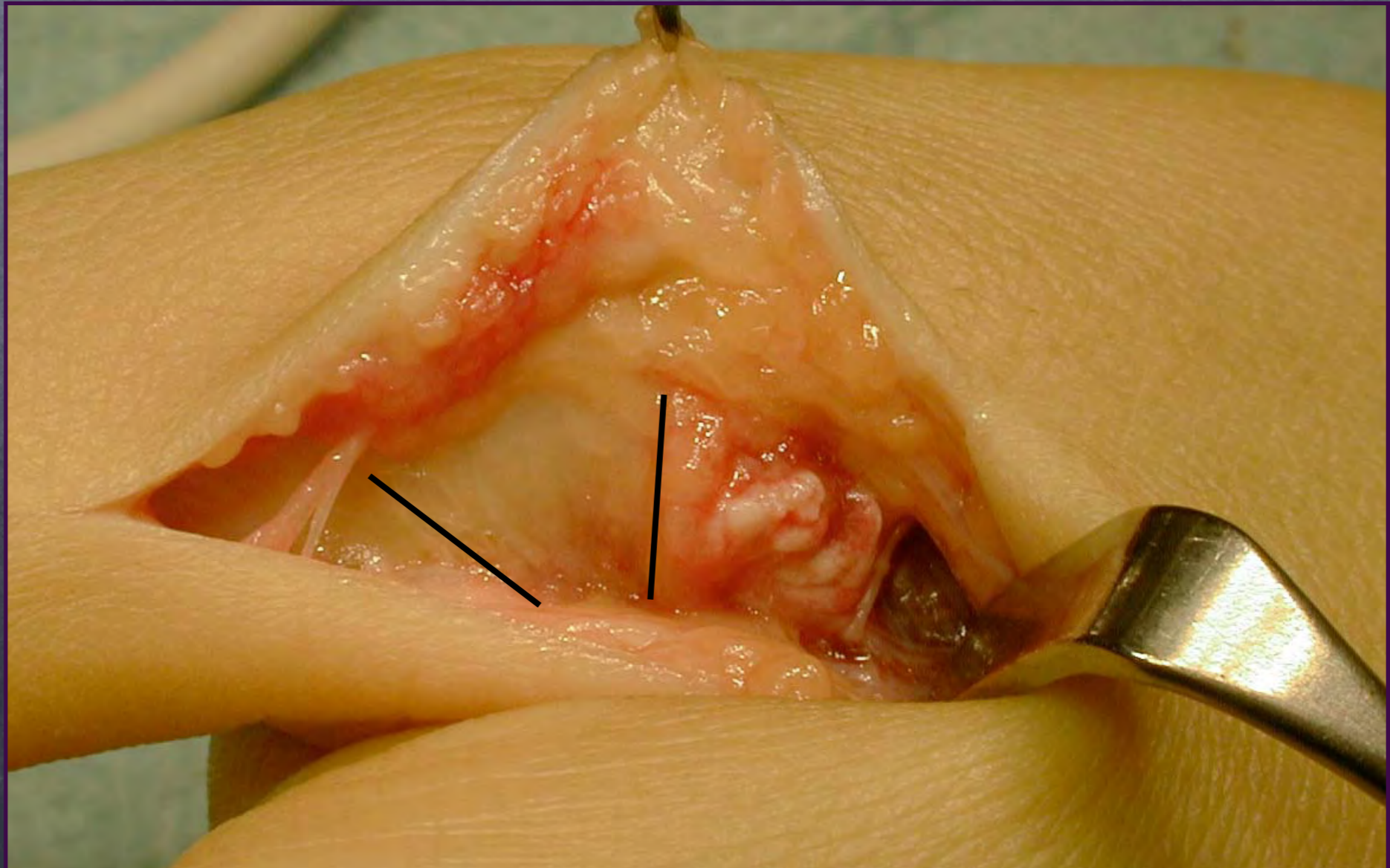
# The medial MP sprain: is there a Stener's lesion ?

- During a fall (with a stick), the thumb is forced in valgus and flexion
- The medial ligament is divided distally in 90% of cases
  - When the thumb goes back in extension, the dorsal aponeurosis interposes between the two ends of the ligament which cannot heal +++
  - Real frequency is unknown (at least > 50% cases)



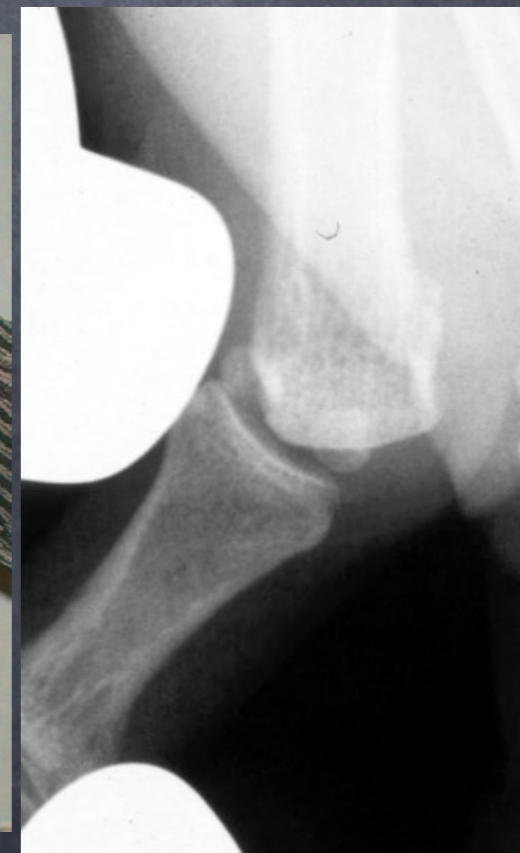


Stener's lesion



# Stener's lesion

- Clinical diagnosis is rather easy
  - (If X-Rays are normal +++)
  - Obvious instability during testing
- The bottle test ++
- $> 25^\circ$  of valgus instability compared to the controlateral side



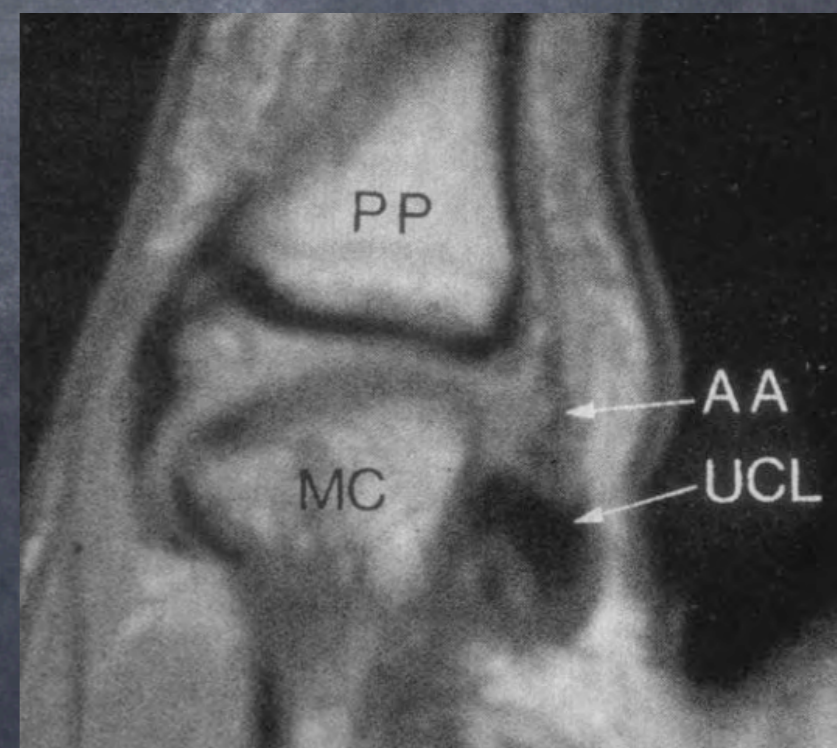
# Radiographs

- Most often normal
- Indirect signs of severity
  - Spontaneous joint opening
  - Anterior subluxation
- Direct signs of the ligamentous injury (Bony avulsion)



# Other imaging techniques

- Sonography :
  - Sensibility 88%, specificity 83-91%
- MRI
  - Sensibility 63-100%, specificity 50-100%
  - Not available everywhere, operator-dependant techniques
  - Therapeutic interest ?





# What to do ?

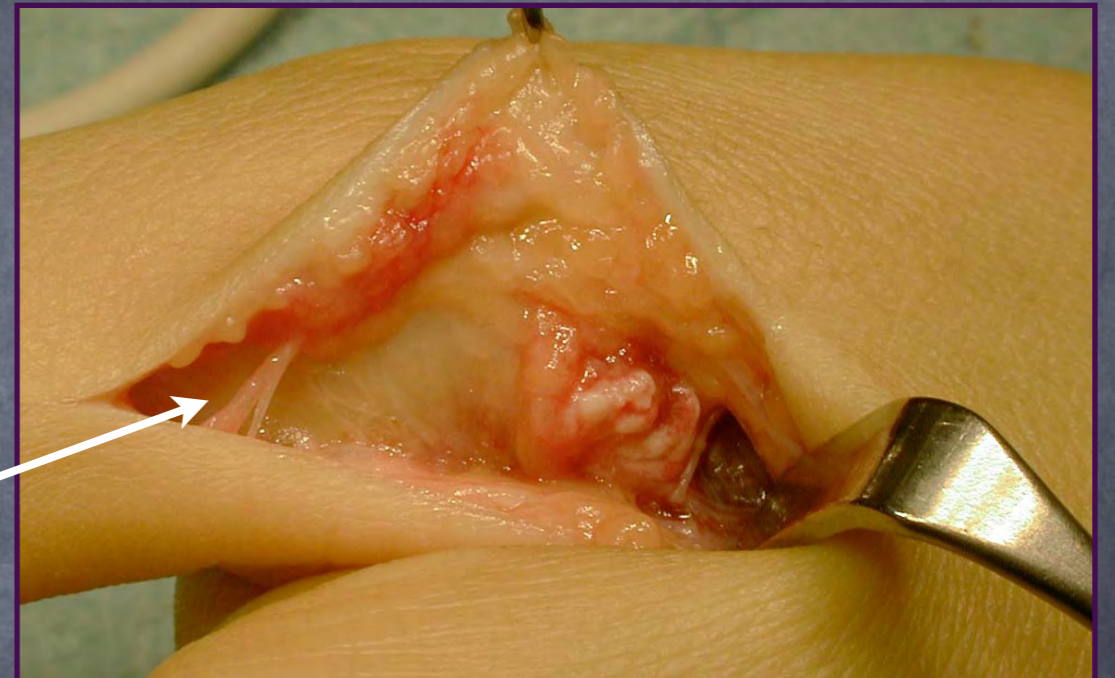


- Benign injury: Nothing or a 10 days strapping for pain relief
- More severe injury (without) Stener's lesions: 45 days in a thumb spica cast
- Severe laxity (or in case of doubt) = Surgery +++



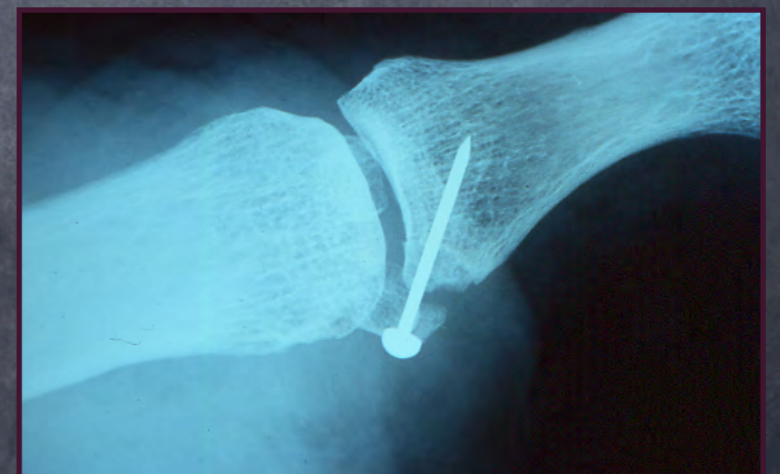
# Surgical technique

- Local or regional anesthesia
- V type incision
- Respect the dorsal sensory branch
- Incise the dorsal aponeurosis close to the EPL tendon



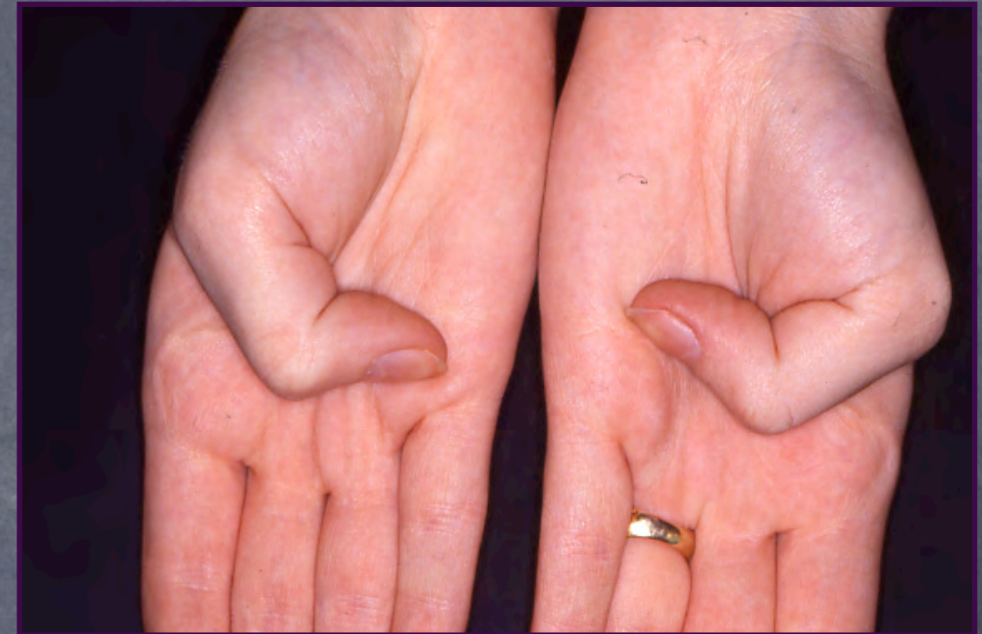


- Reinsertion of the medial ligament on the phalanx (periosteal suture, anchors,...)
- A small bony piece is excised, otherwise fixed
- The dorsal aponeurosis is closed over the ligament
- Cast immobilization for 1 month, then rehabilitation



# Results

- 80-90% are pain-free after 6 months
- Loss of motion of 5-10% (Kapandji 9-10)
- 60-70% regain normal grip and pinch strength
- The MP is enlarged definitively



# Is surgery an emergency ?

- YES
- Clinical results decline after 8 days
- After 3 weeks, a ligamentous suture may not be possible and a ligamentoplasty may be needed

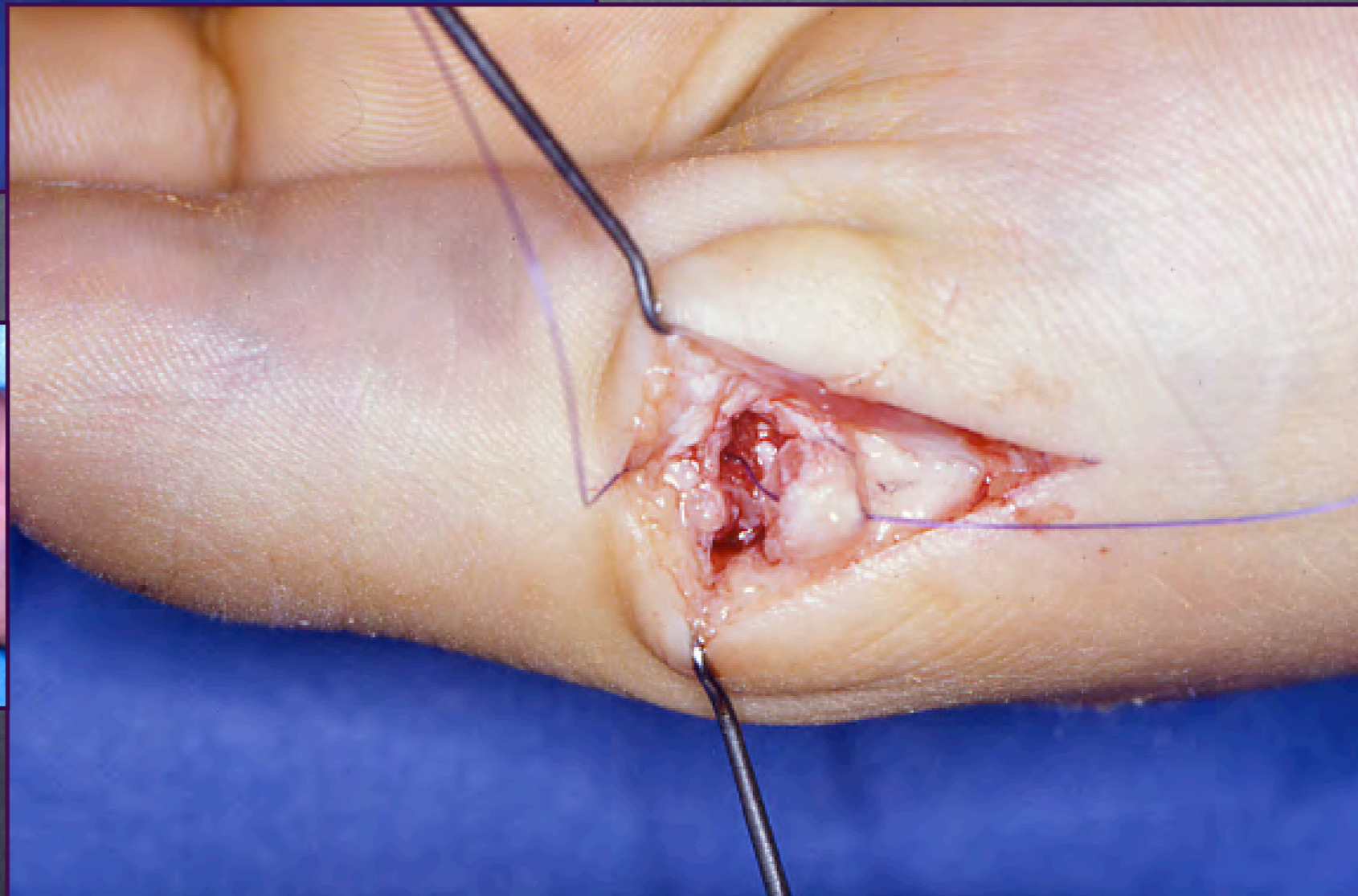


# Lateral ligament injuries

- 10 times less frequent
- No Stener's lesion
- Postero-lateral (rotatory) instability
  - Less impressive clinically
  - Very poorly tolerated
- Surgical treatment is mandatory in severe injuries

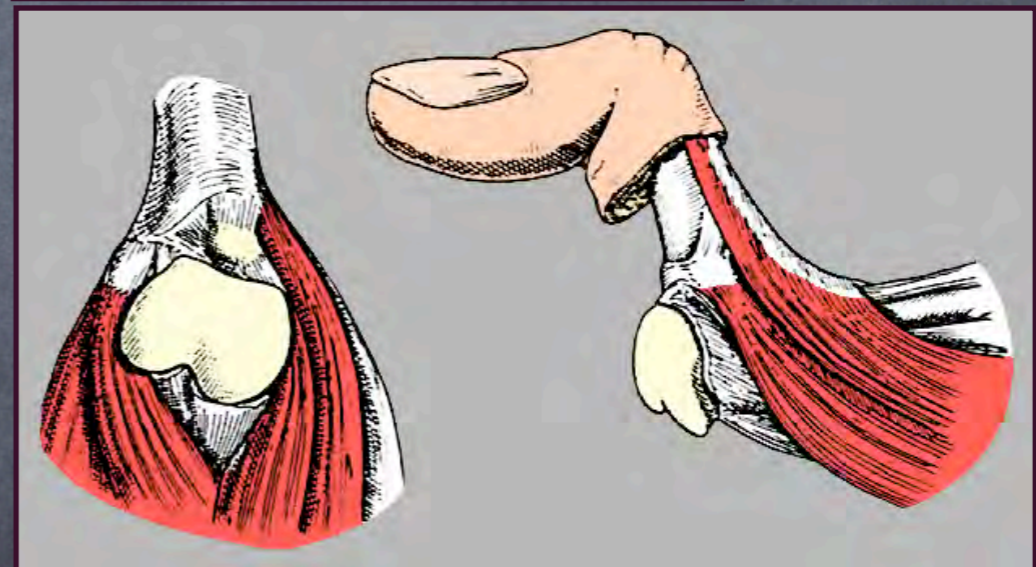


Surgical principles and techniques are similar



# Posterior MP dislocation

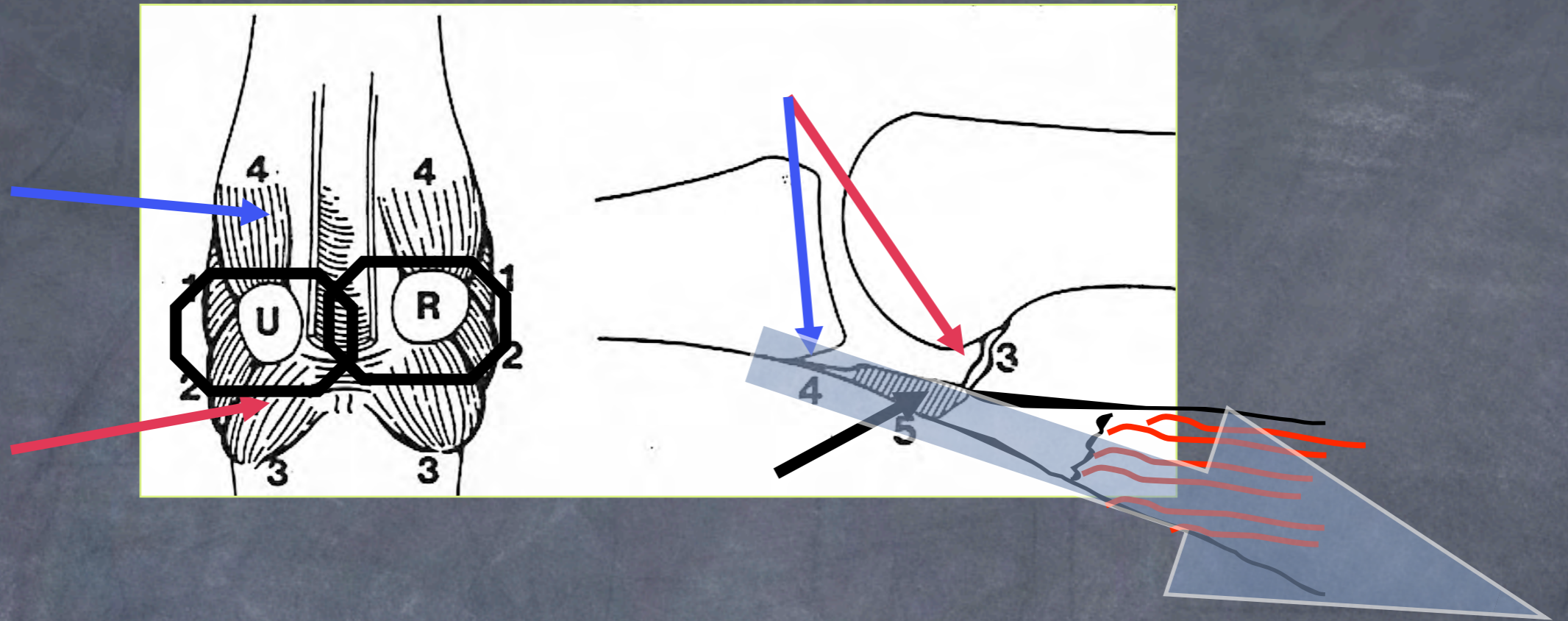
- Clinical diagnosis is easy
- Radiological classification are useless
- Two difficulties:
  - The reduction maneuver
  - Surgical indications



# The reduction maneuver

- NO TRACTION
- Under anesthesia
- Described by Farabeuf
- Increase the deformity and push the phalanx against the metacarpal in order to prevent irreducibility





# Functional anatomy of the volar plate

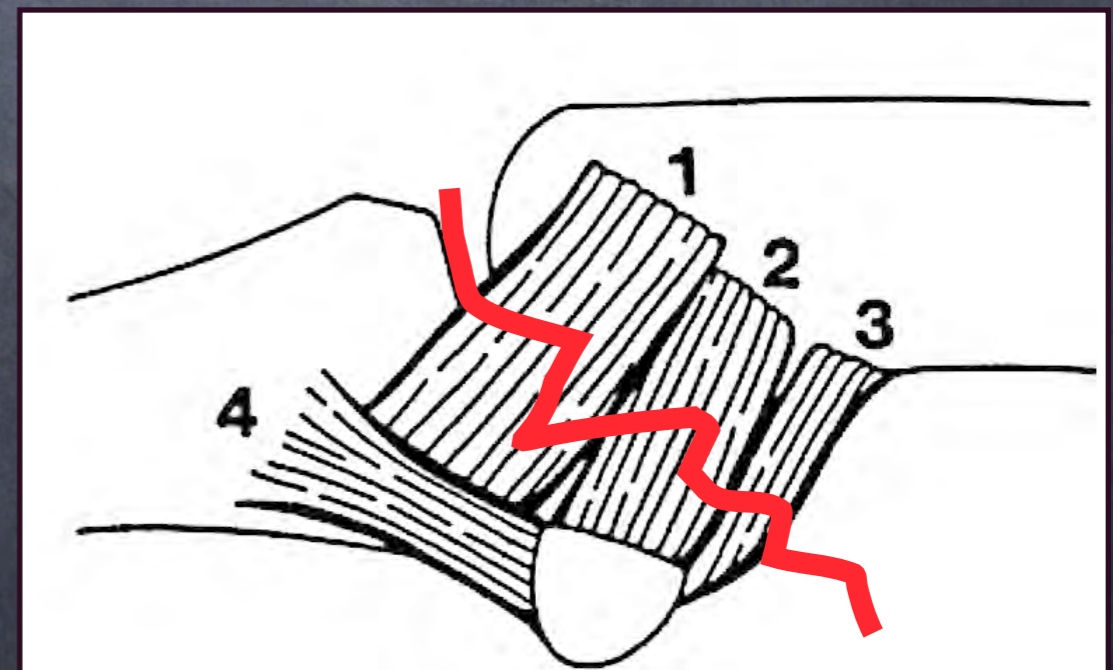
- Passive restraints
  - Metacarpophalangeal lgt
- Active restraints
  - Sesamoido-phalangeal lgt
  - Sesamoids
  - Thenar muscles



# Indications



- Depend of the ligamentous injuries
- That must be tested under anesthesia with a radiological evaluation
  - If there is a lesion of one of the collateral ligament
  - Surgery is indicated




# Metacarpo-phalangeal ligament

- The most frequent injury (> 80%)
- Stable after reduction
- During extension, the sesamoids stay with the phalanx
- Orthopedic treatment (cast) for 1 month




# If

- Rupture of the sesamoido-phalangeal ligament
- Fracture of a sesamoid bone
- Rupture of the flexor pollicis brevis tendon



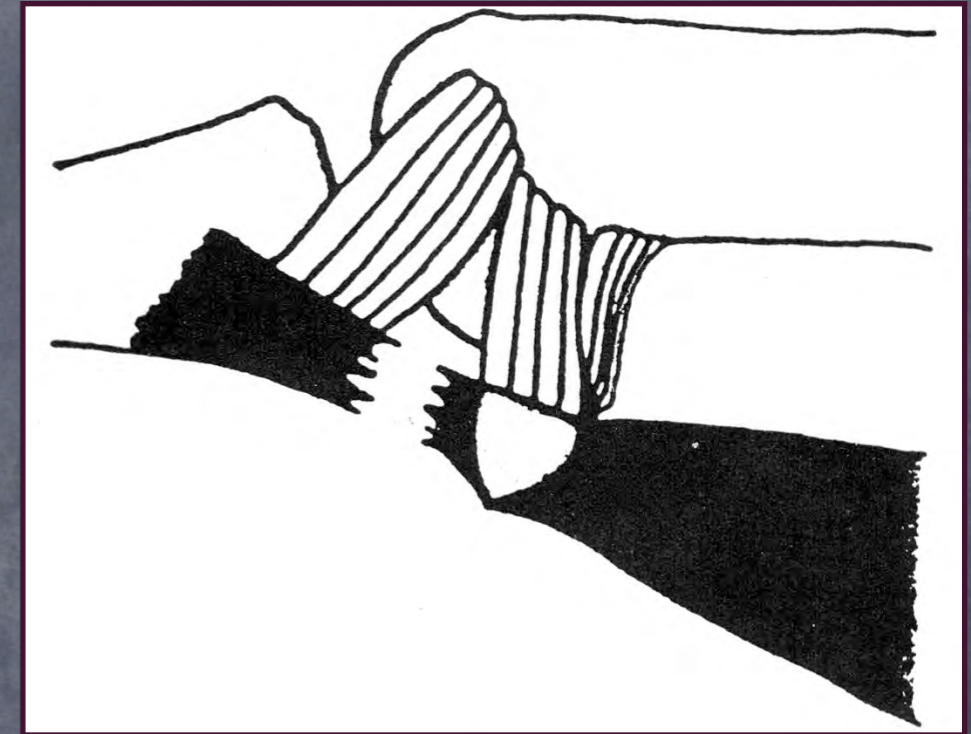
- Rupture of the active restraints



- Surgical treatment

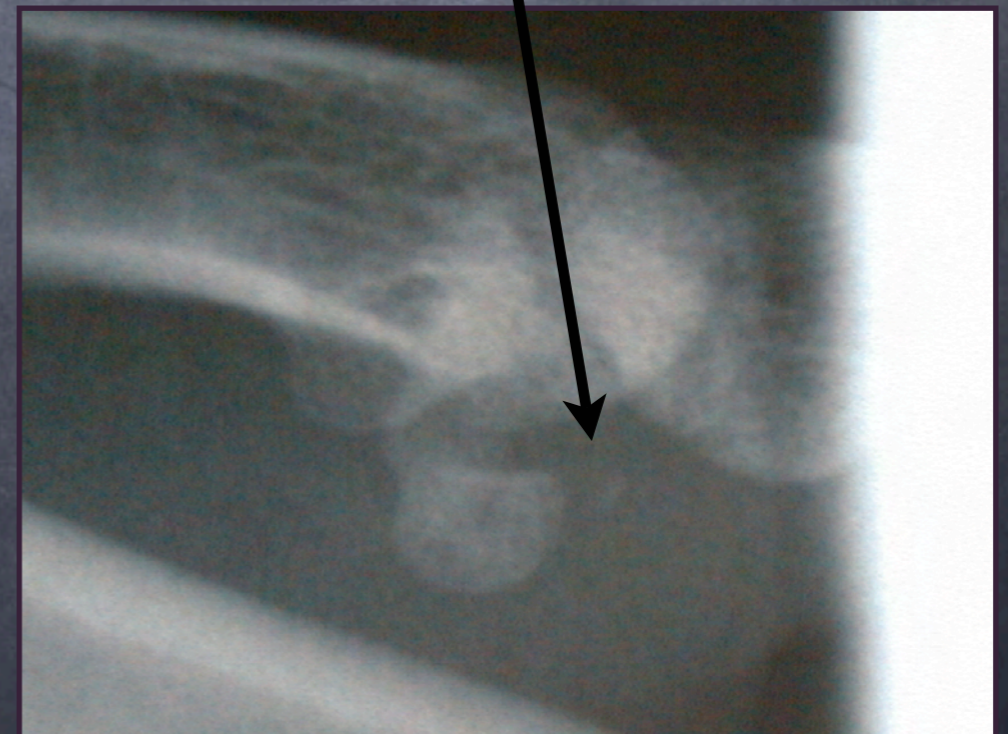
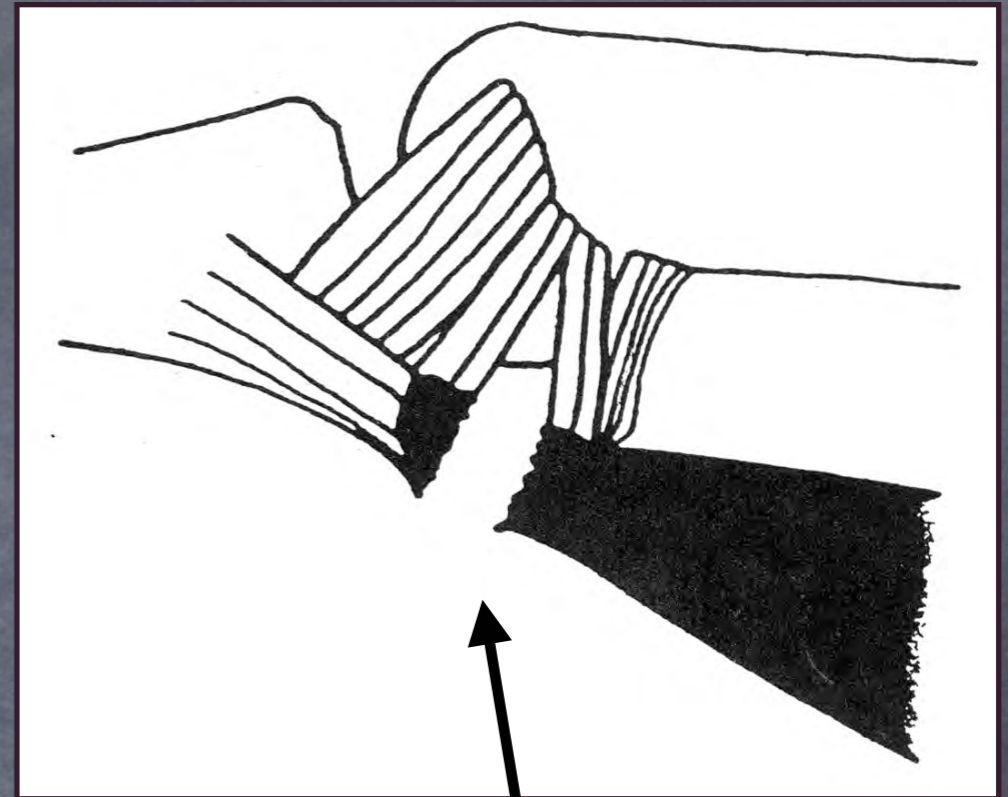
# Diagnosis of a rupture of the active restraints

- The sesamoid bones do not follow the phalanx during extension
- Rupture of the sesamoido-phalangeal ligament



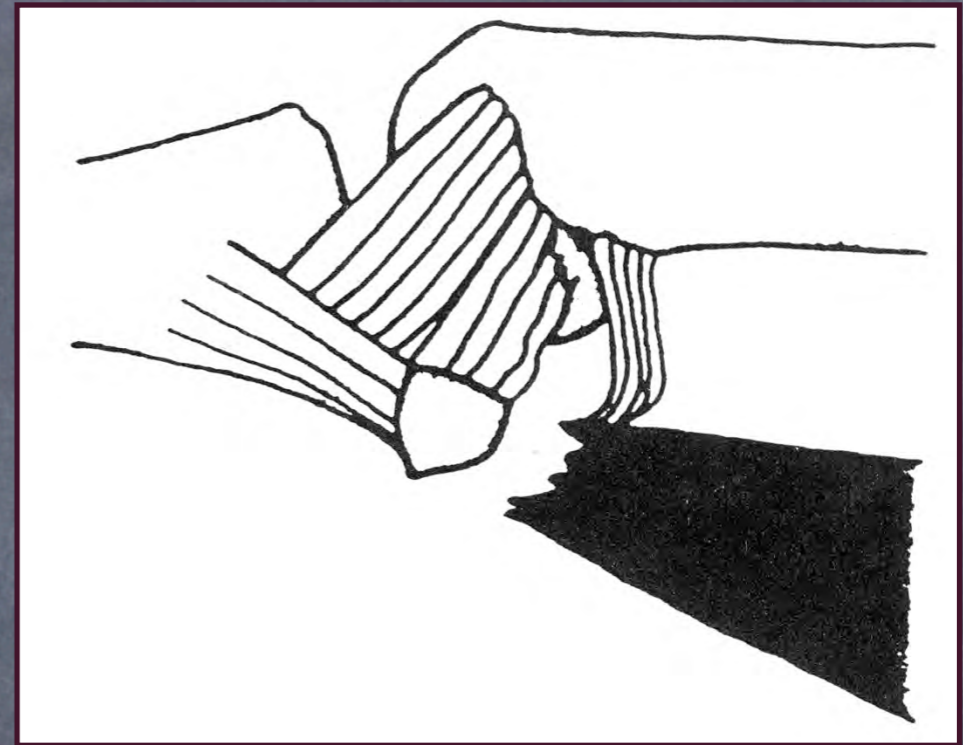
## Diagnosis of a rupture of the active restraints (2)

- Fracture of the sesamoid bone
- Difficult to see



# Diagnosis of a rupture of the active restraints (3)

- Rupture of the flexor pollicis brevis tendon
- Hematoma, proximal pain, increased pain during resisted flexion if seen late



# Conclusion



- Rare injuries
- Severe injuries must be treated surgically
- A thorough clinical examination with a meticulous ligamentous testing is the key to a good treatment option
- Sequelae are very disabling for the sportsmen