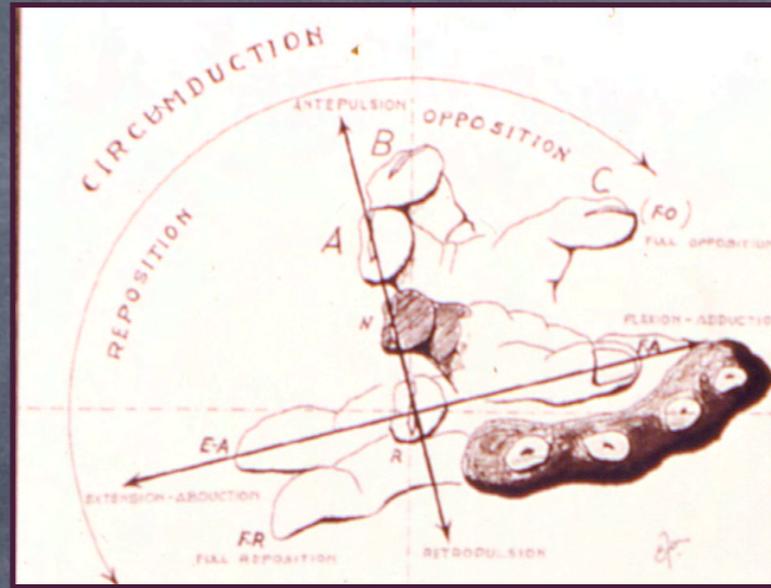


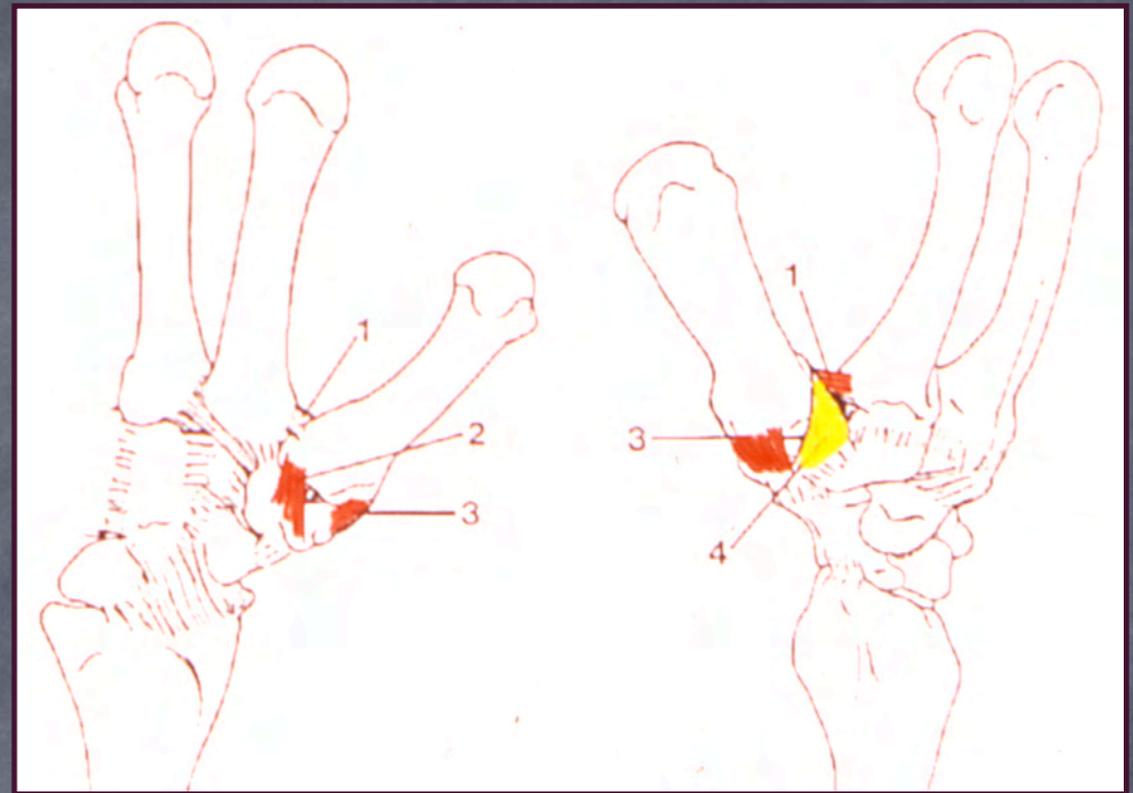
Sprains and dislocations of the thumb ray



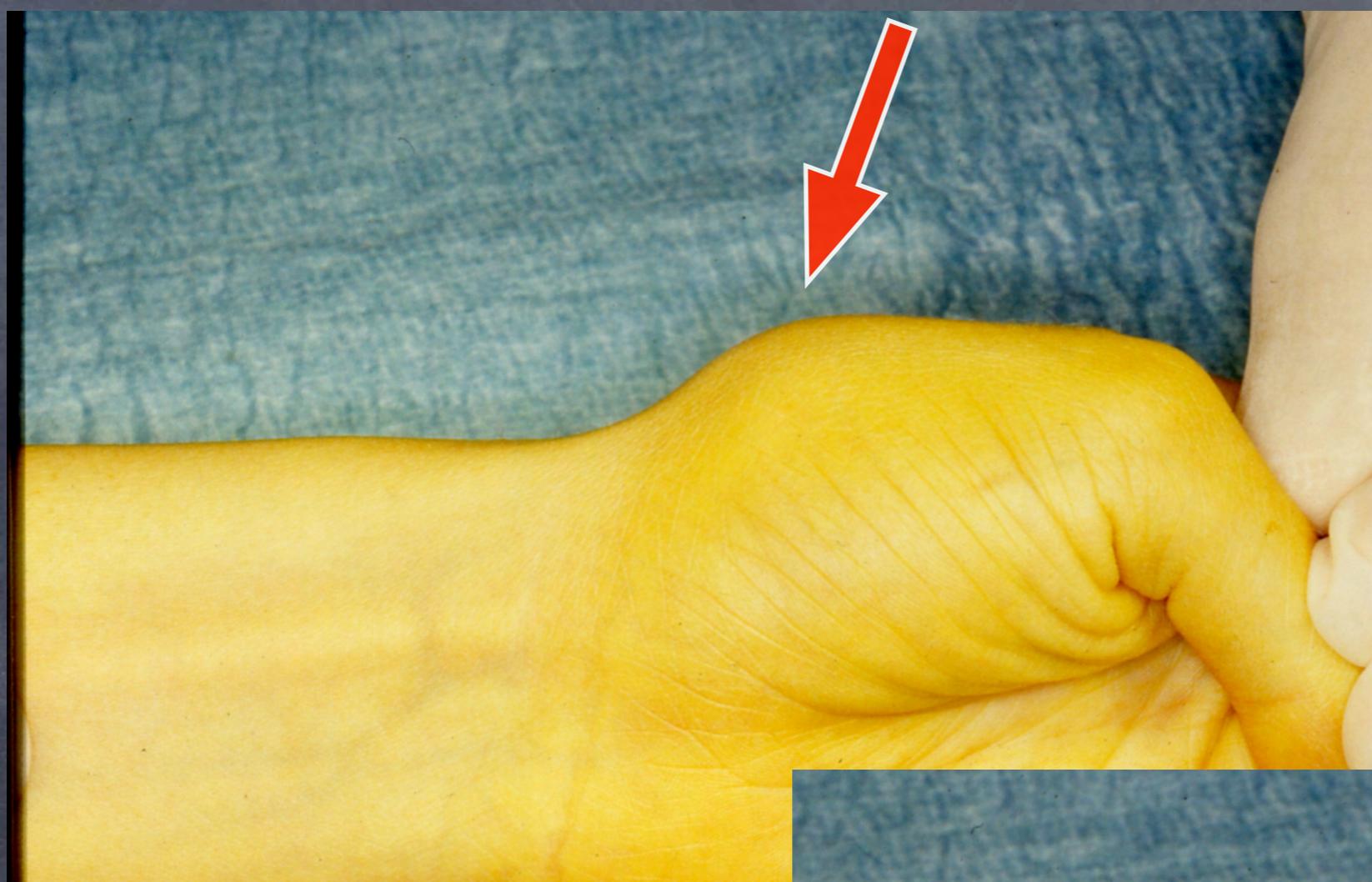
Christian Dumontier

Institut de la Main & hôpital St-Antoine,
Paris

TM joint



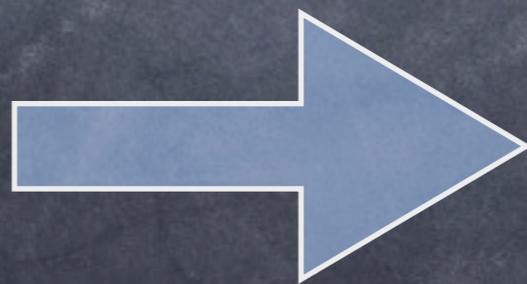
- Rare injuries
- Clinical diagnosis includes localized pain, swelling, and sometimes laxity in one or two planes or even a deformity
- Radiographs (Kapandji's) are mandatory to eliminate a Bennett's fracture, much more frequent





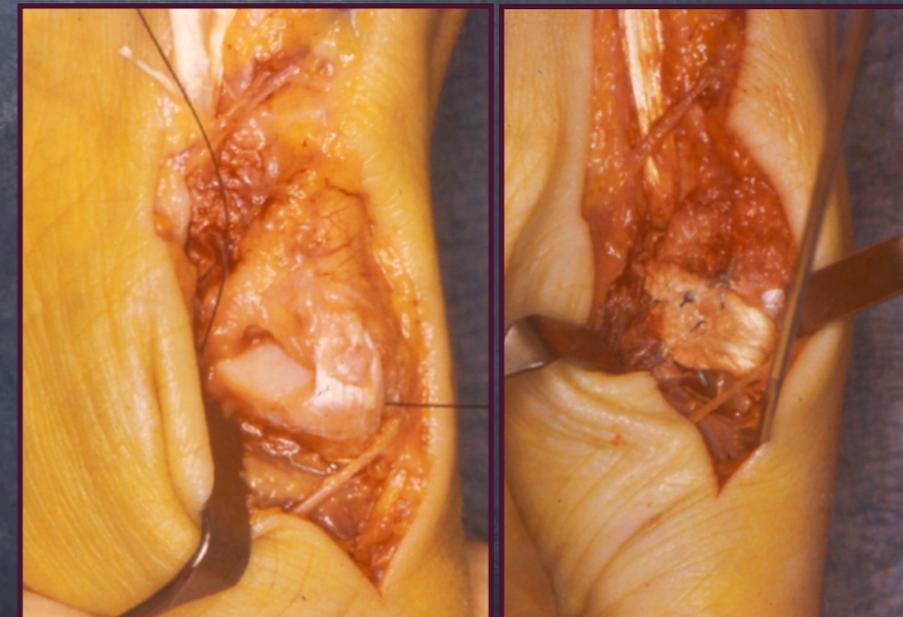
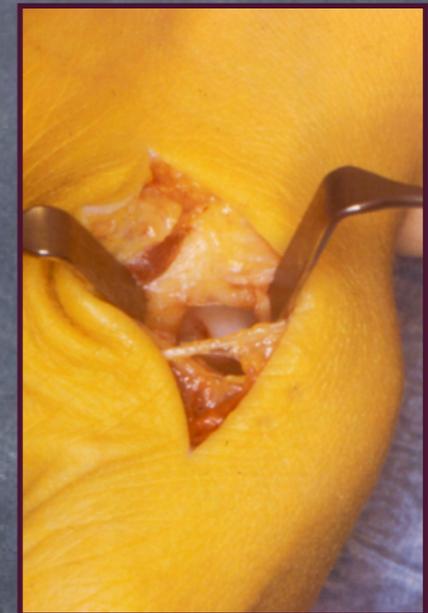
Radiographs are sometimes difficult to read, so in case of doubt

Stress radiographs



Treatment

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



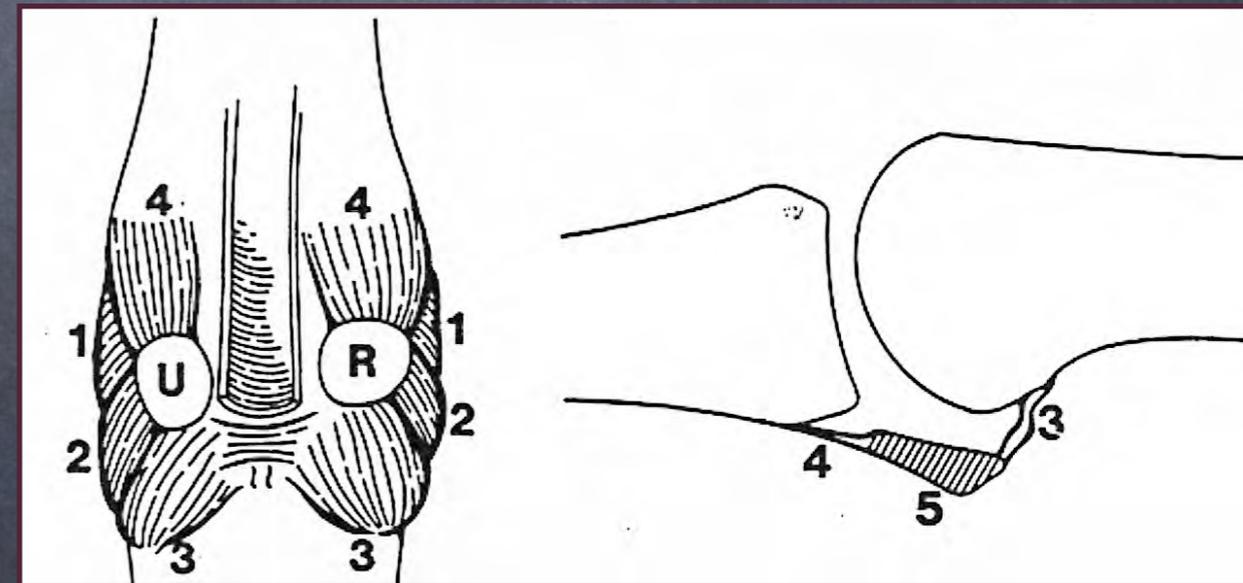
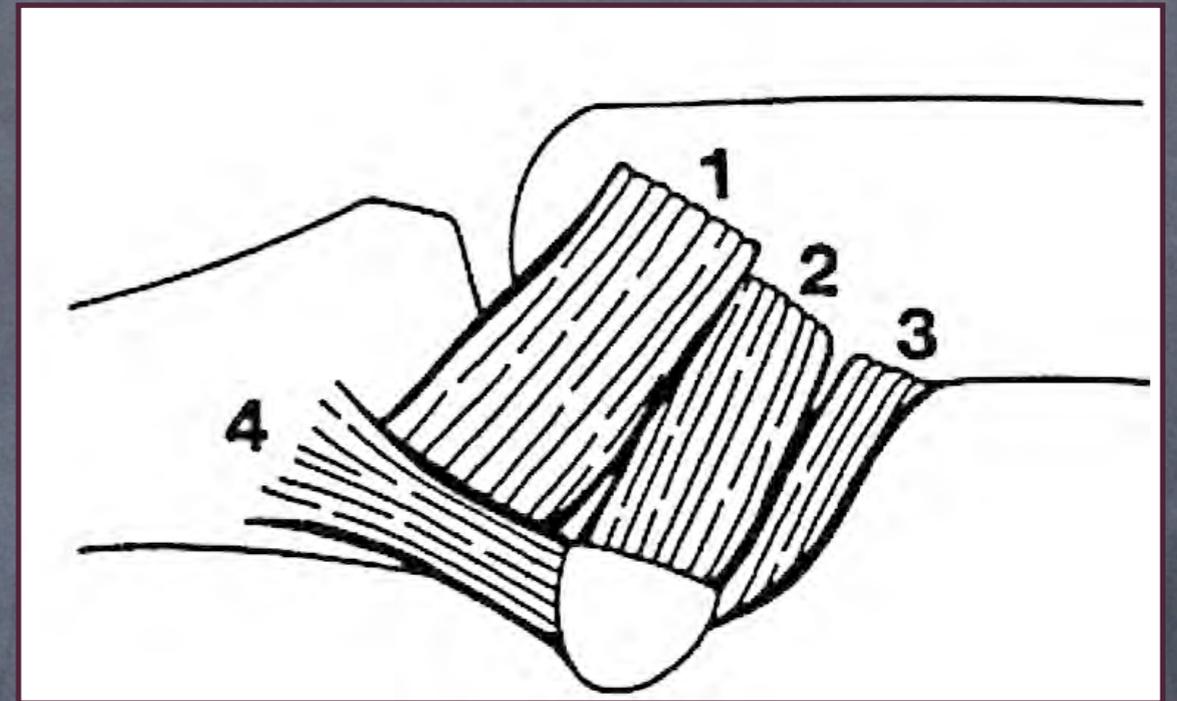
Thumb metacarpophalangeal injuries

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



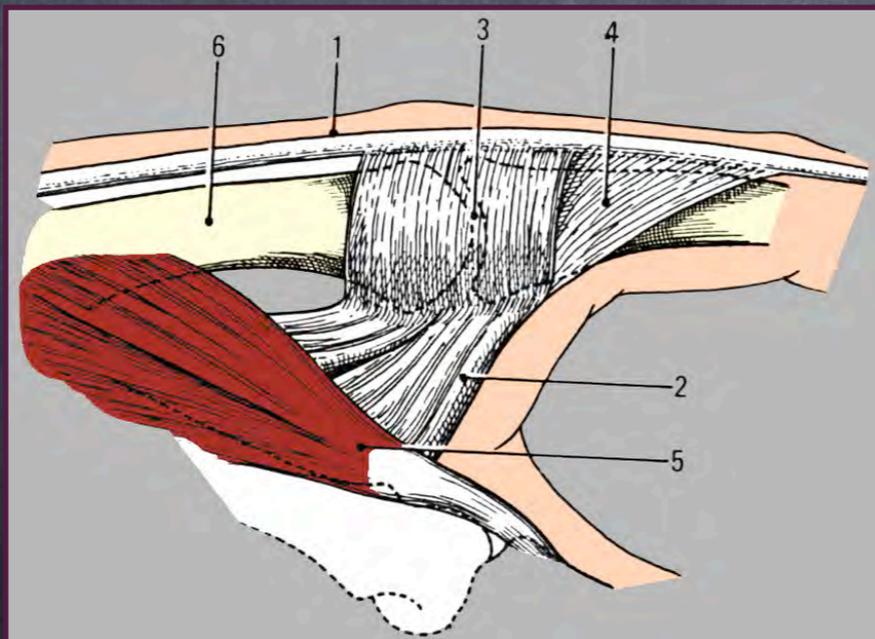
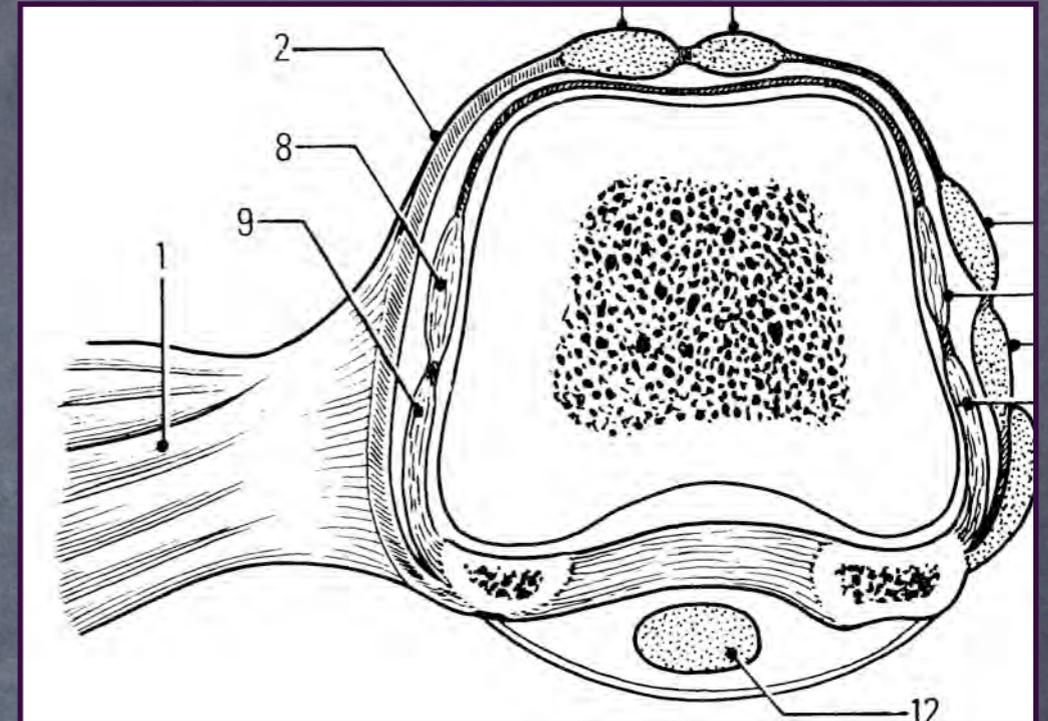
Anatomy of the MP joint

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



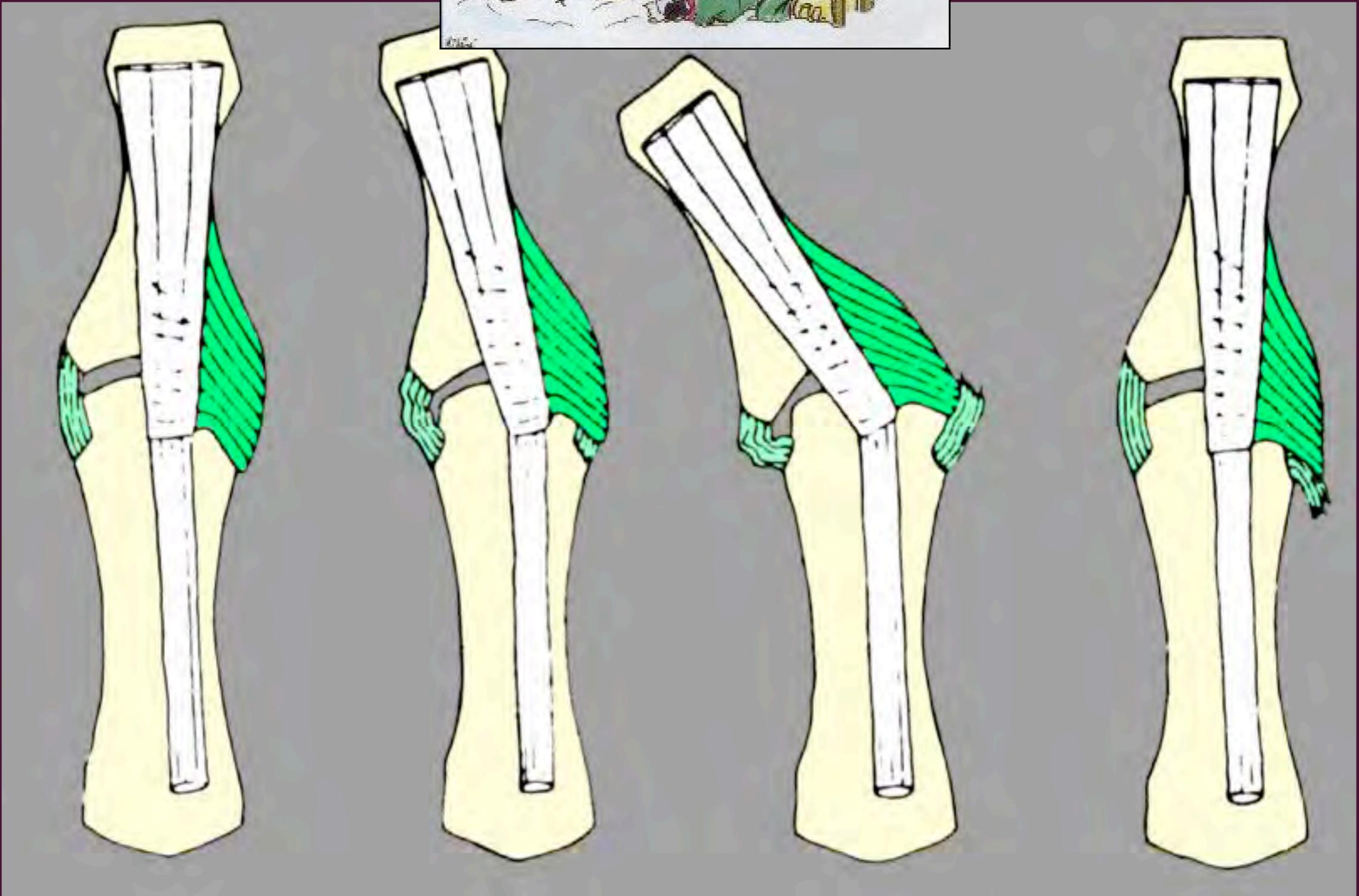
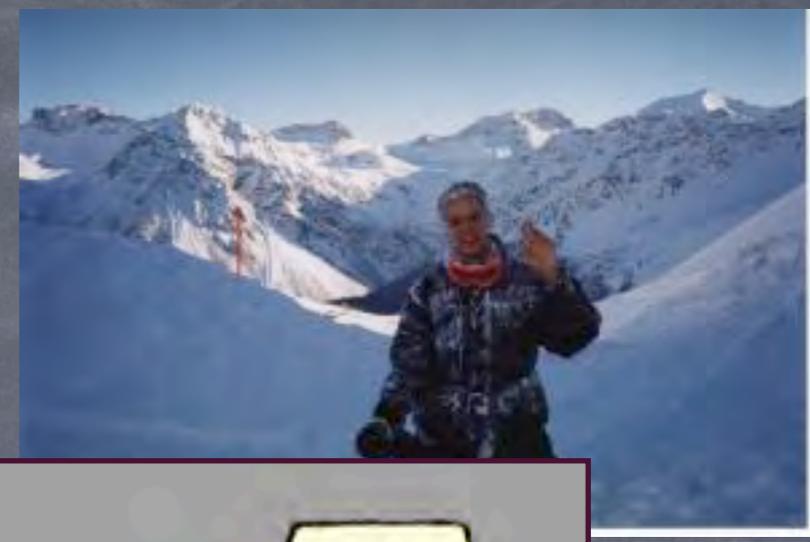
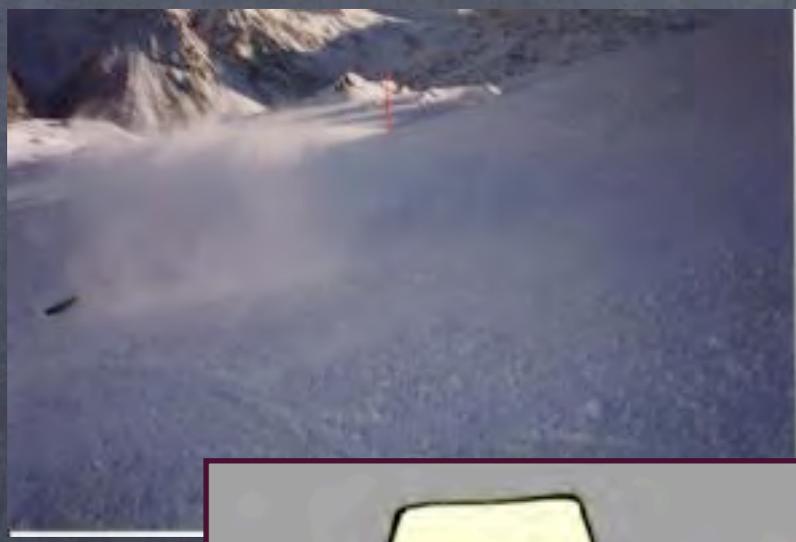
The medial side

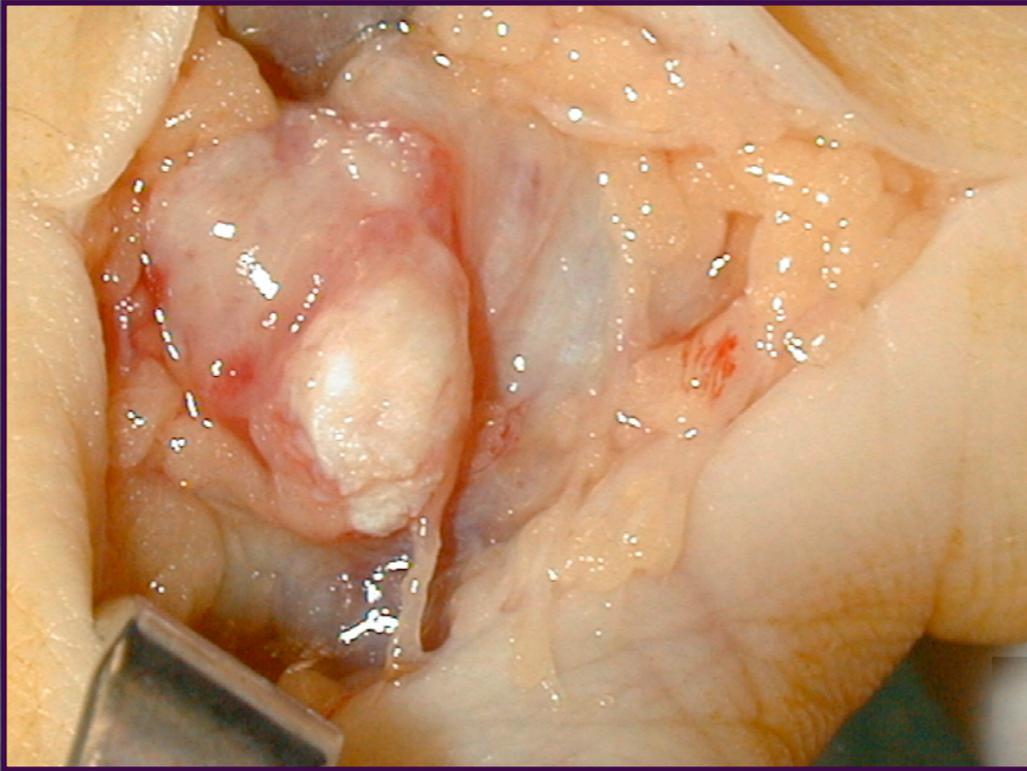
- The medial collateral ligament has two bands
- That are covered with the dorsal expansion of the adductor pollicis



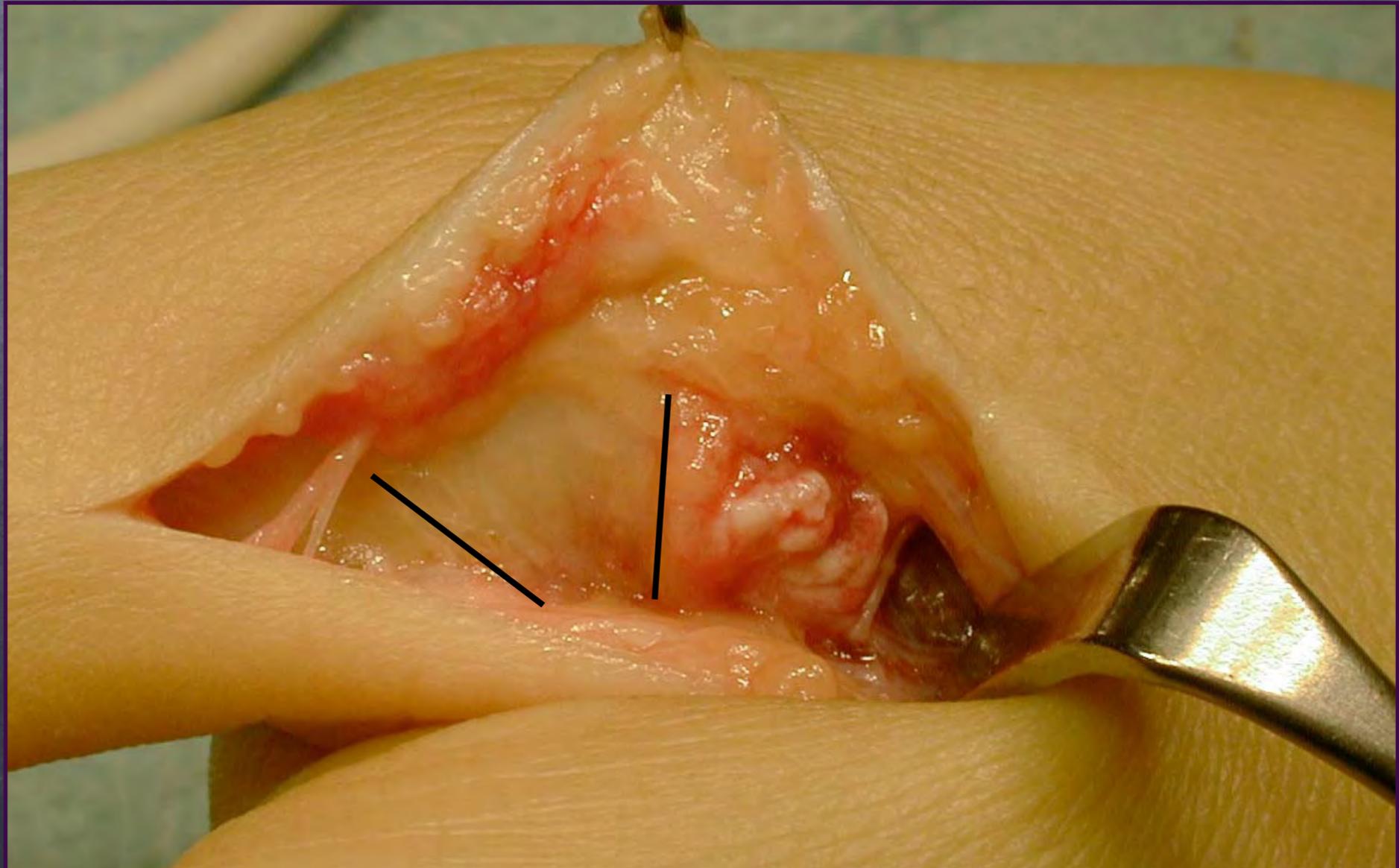
The medial MP sprain: is there a Stener's lesion ?

- 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



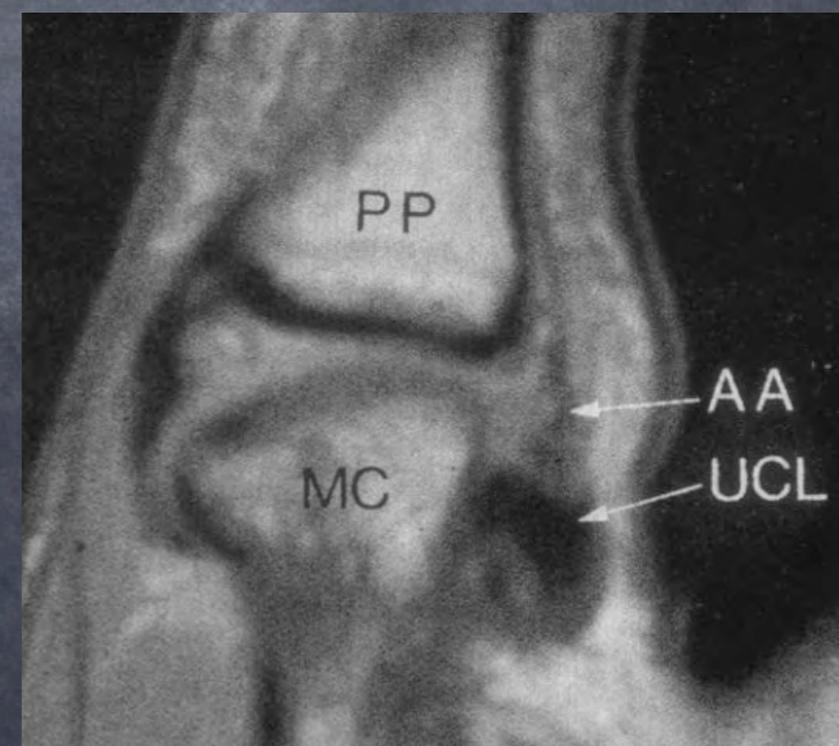
Radiographs

- 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 ?

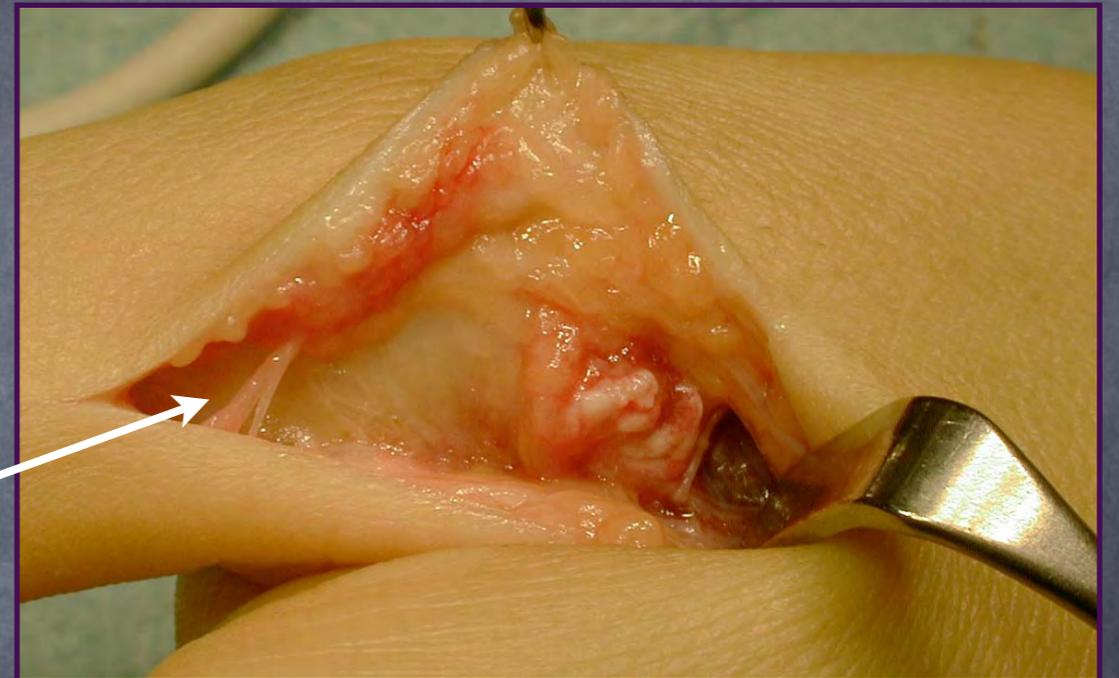


- Benign injury: Nothing or a 10 days strapping for pain relief
- More severe injury (without) Stener's lesions: 45 days in a thumb spica cast
- Severe laxity (or in case of doubt) = Surgery +++

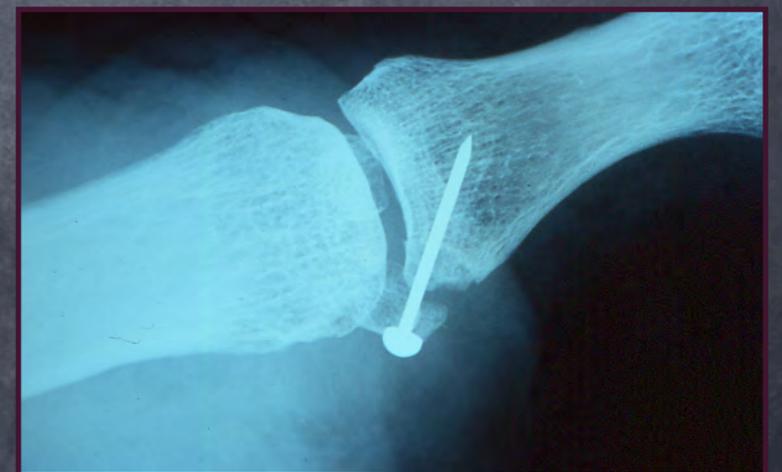
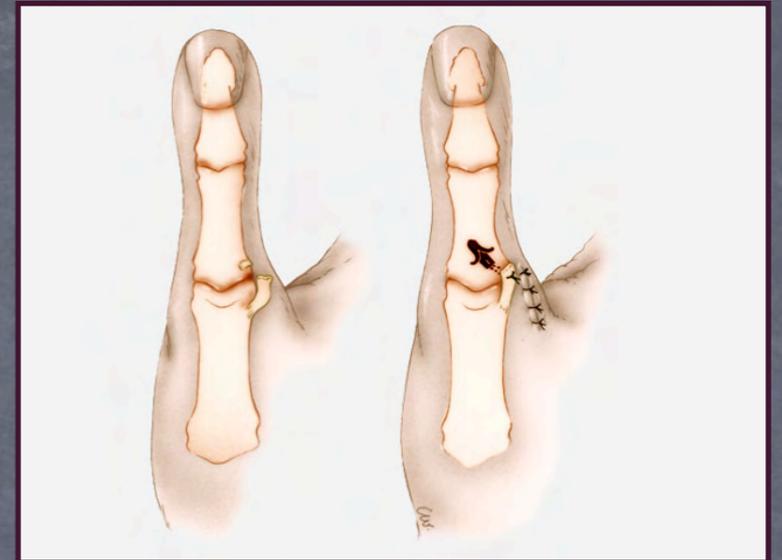


Surgical technique

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

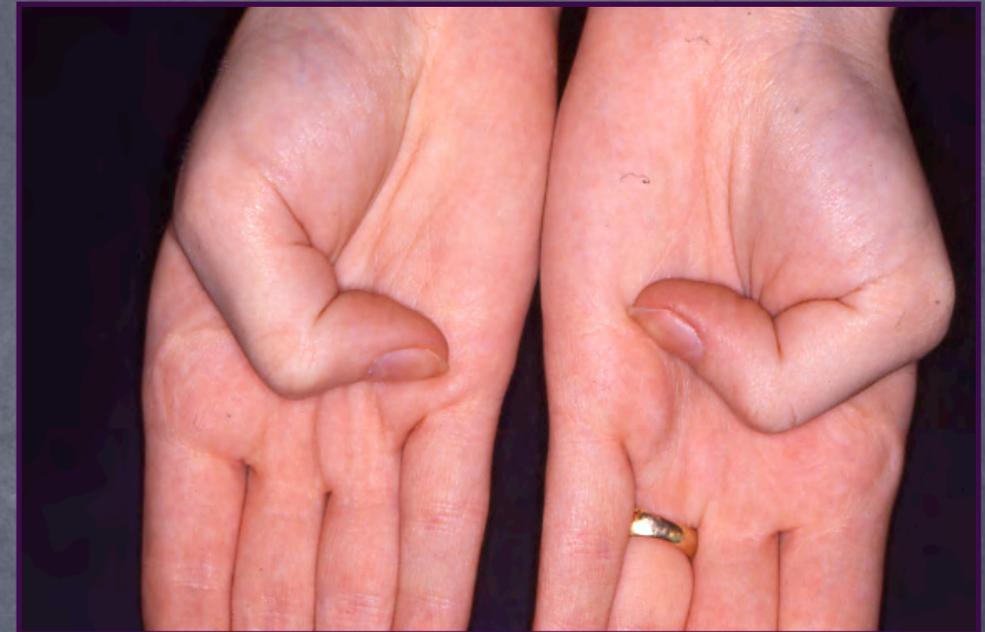


- Reinsertion of the medial ligament on the phalanx (periosteal suture, anchors,...)
- A small bony piece is excised, otherwise fixed
- The dorsal aponeurosis is closed over the ligament
- Cast immobilization for 1 month, then rehabilitation



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

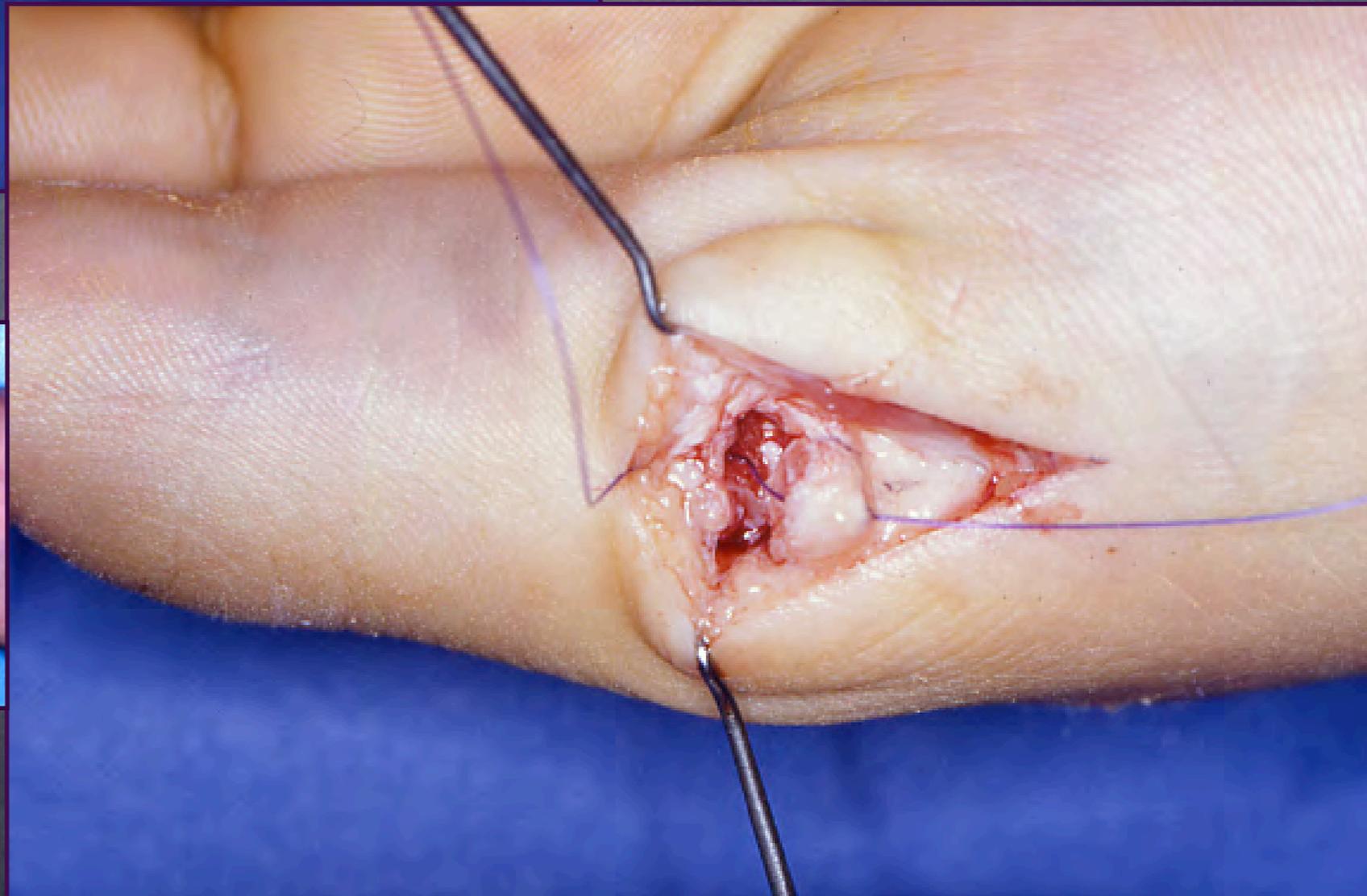
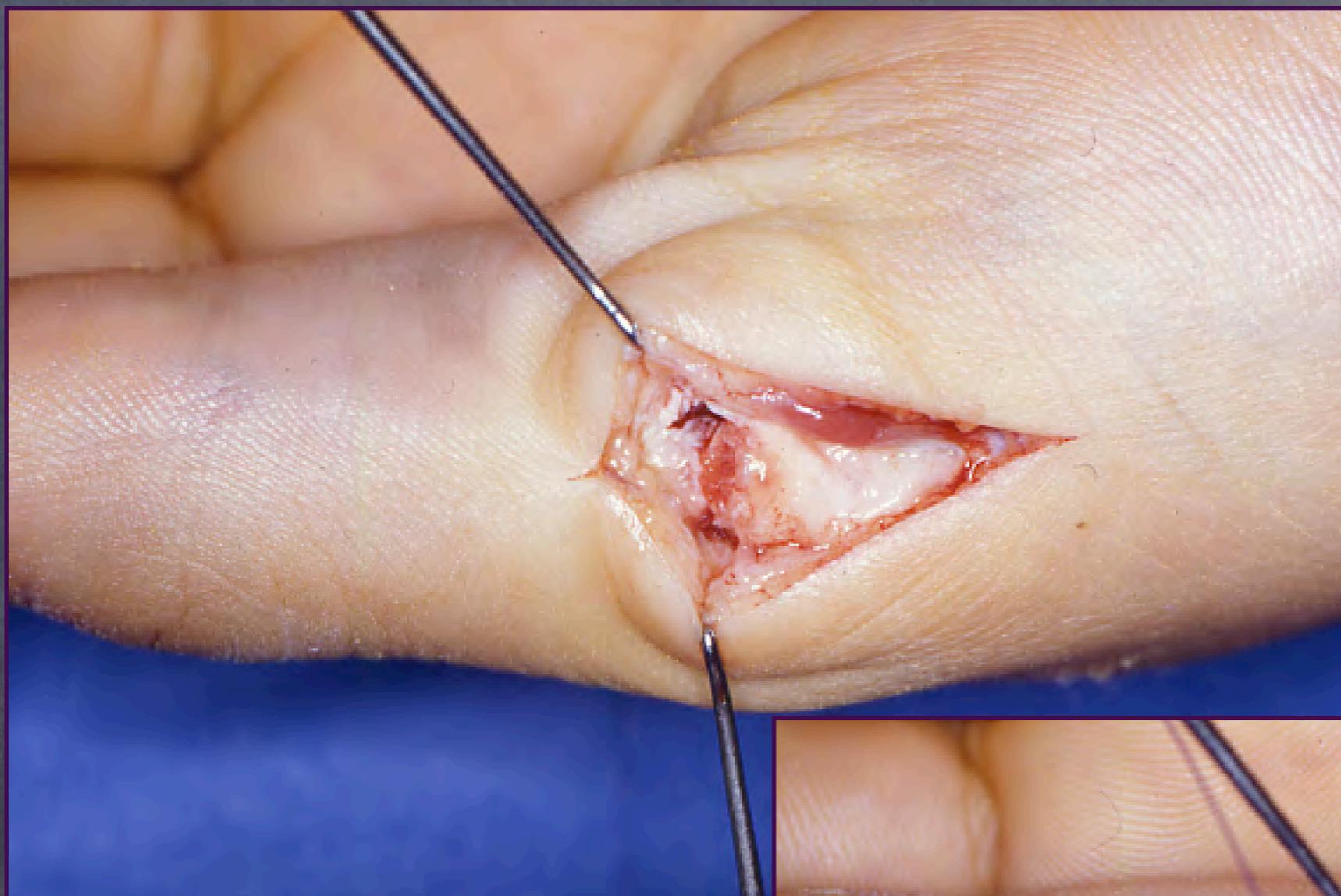


Lateral ligament injuries

- 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

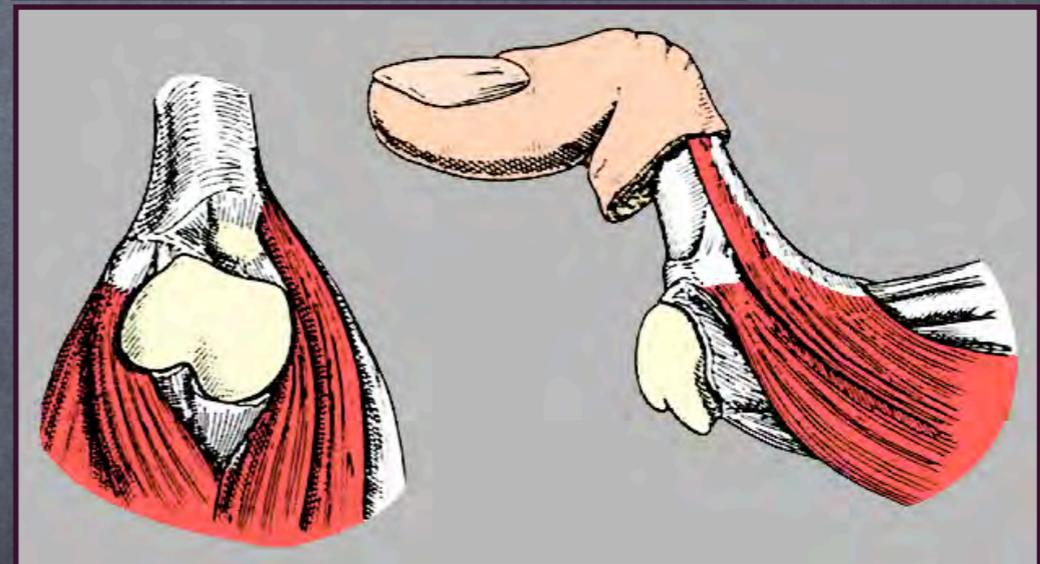


Surgical principles and techniques are similar



Posterior MP dislocation

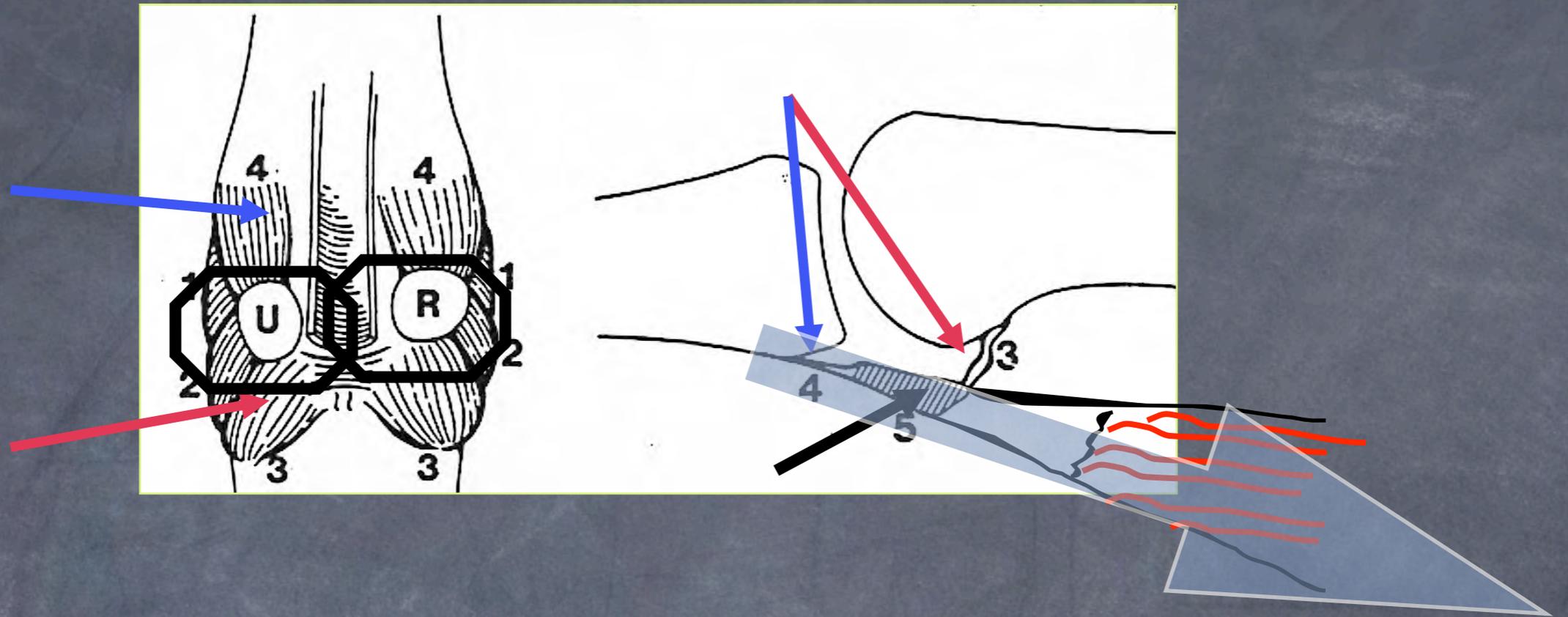
- Clinical diagnosis is easy
- Radiological classification are useless
- Two difficulties:
 - The reduction maneuver
 - Surgical indications



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





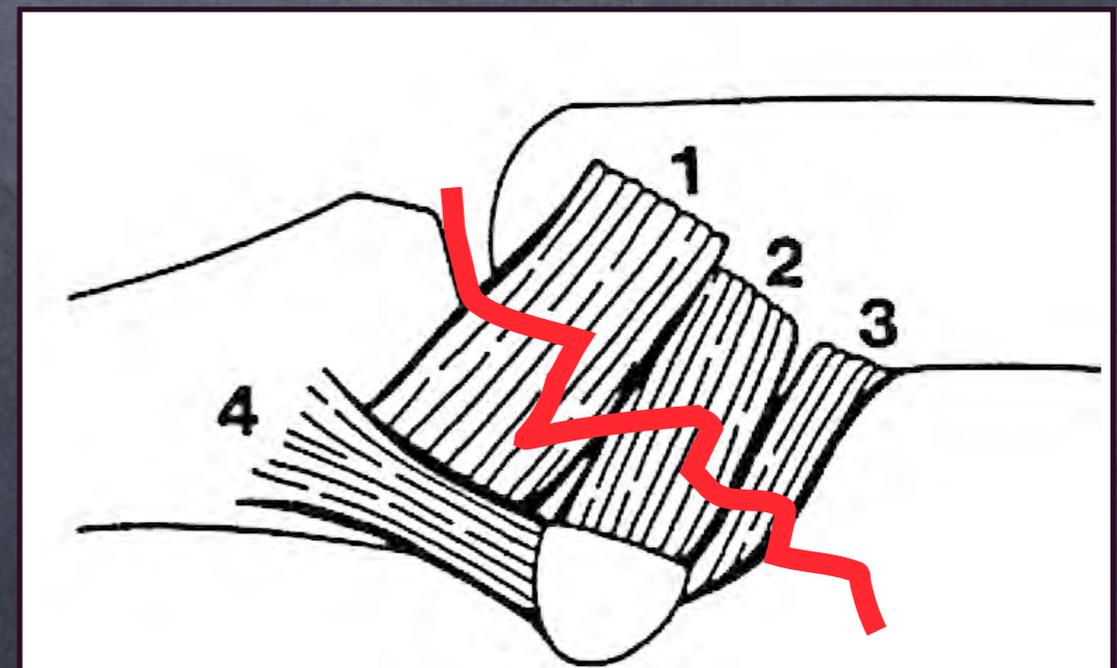
Functional anatomy of the volar plate

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

Indications

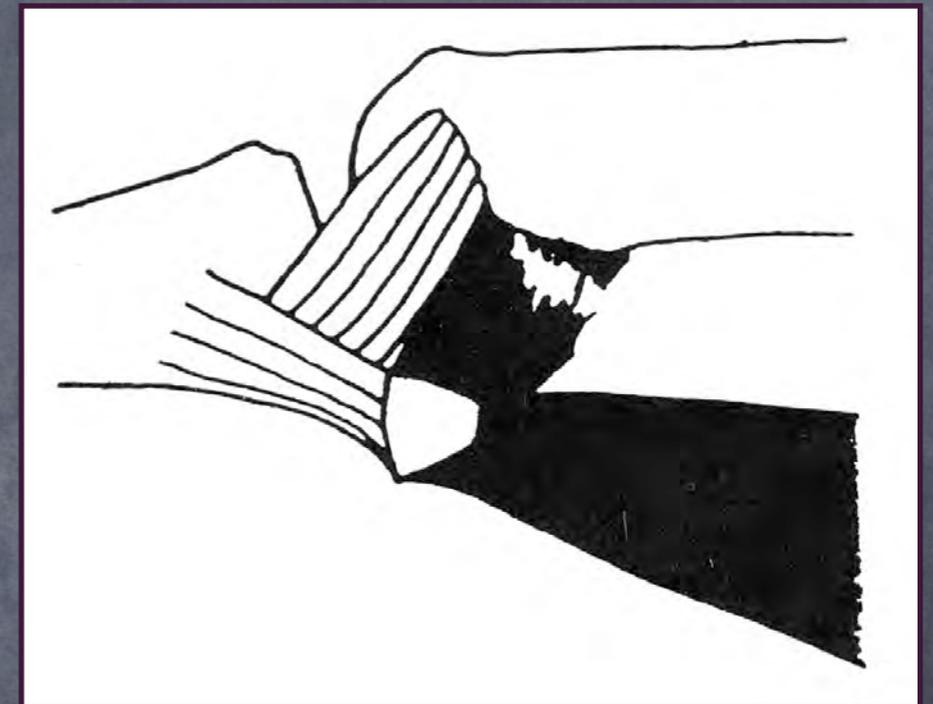


- Depend of the ligamentous injuries
- That must be tested under anesthesia with a radiological evaluation
 - If there is a lesion of one of the collateral ligament
 - Surgery is indicated



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



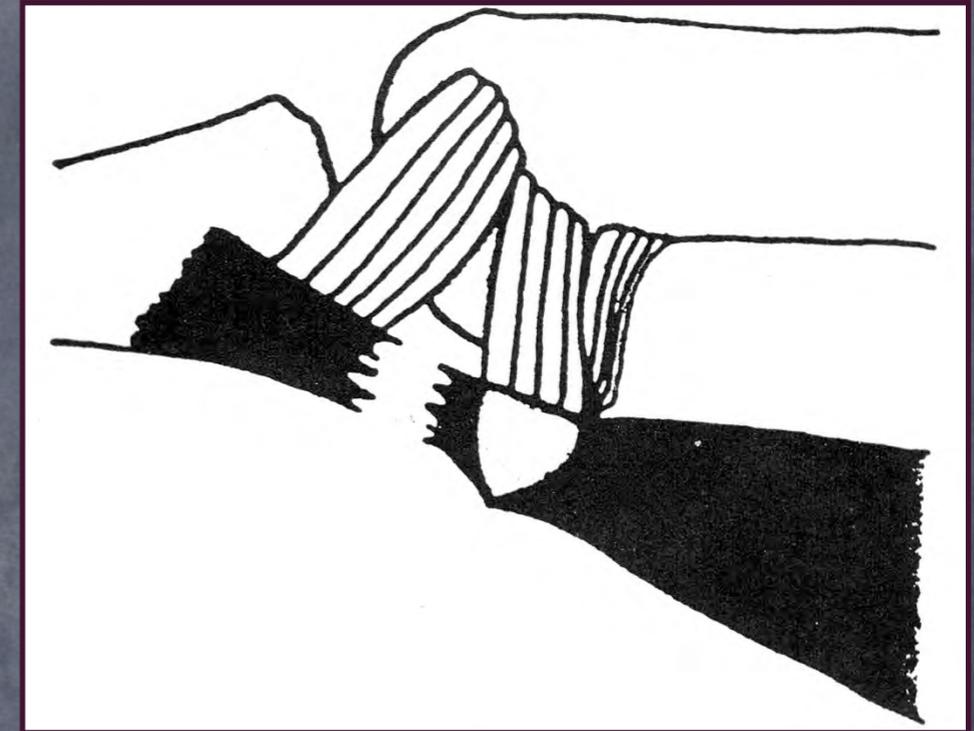
- Rupture of the active restraints



- Surgical treatment

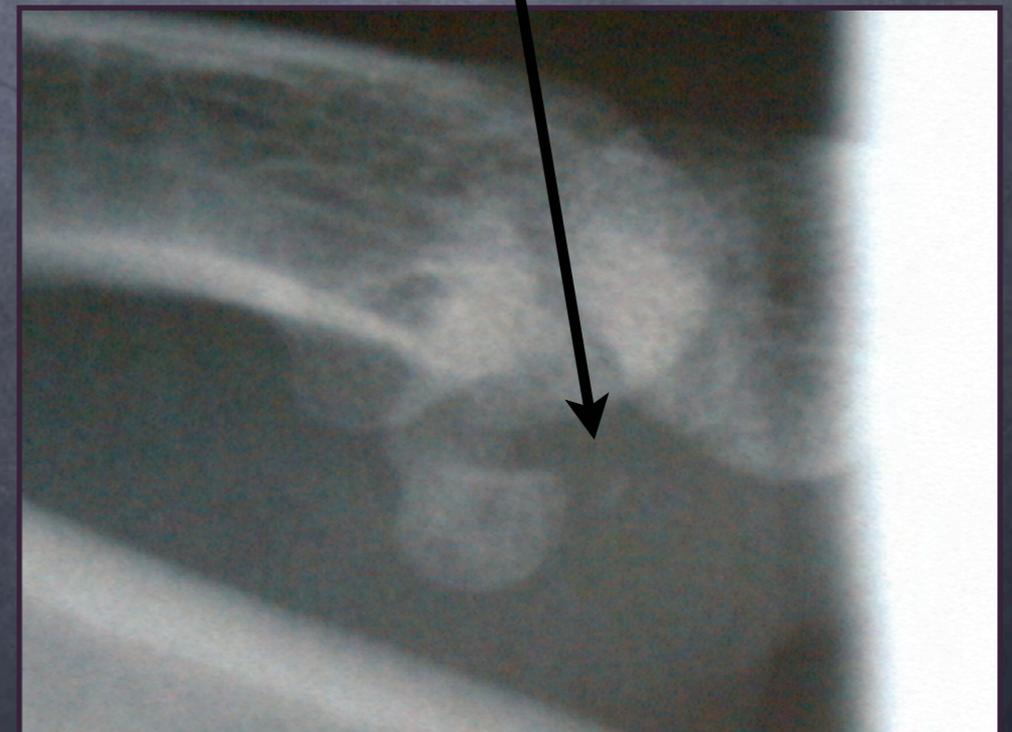
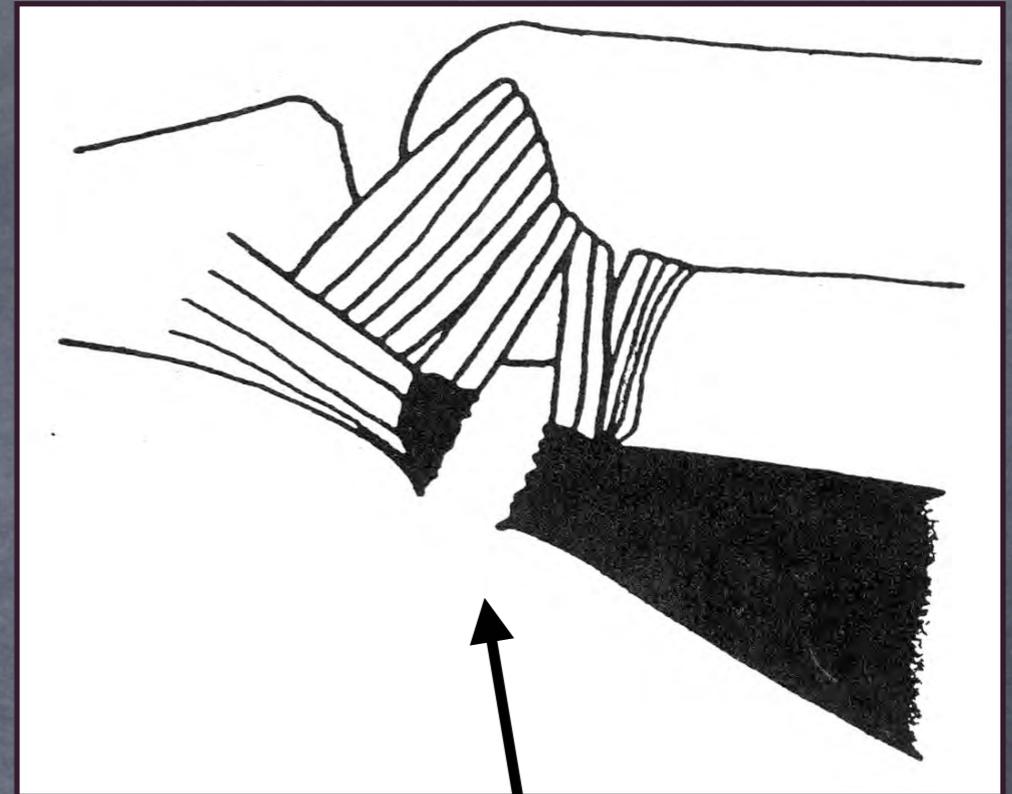
Diagnosis of a rupture of the active restraints

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



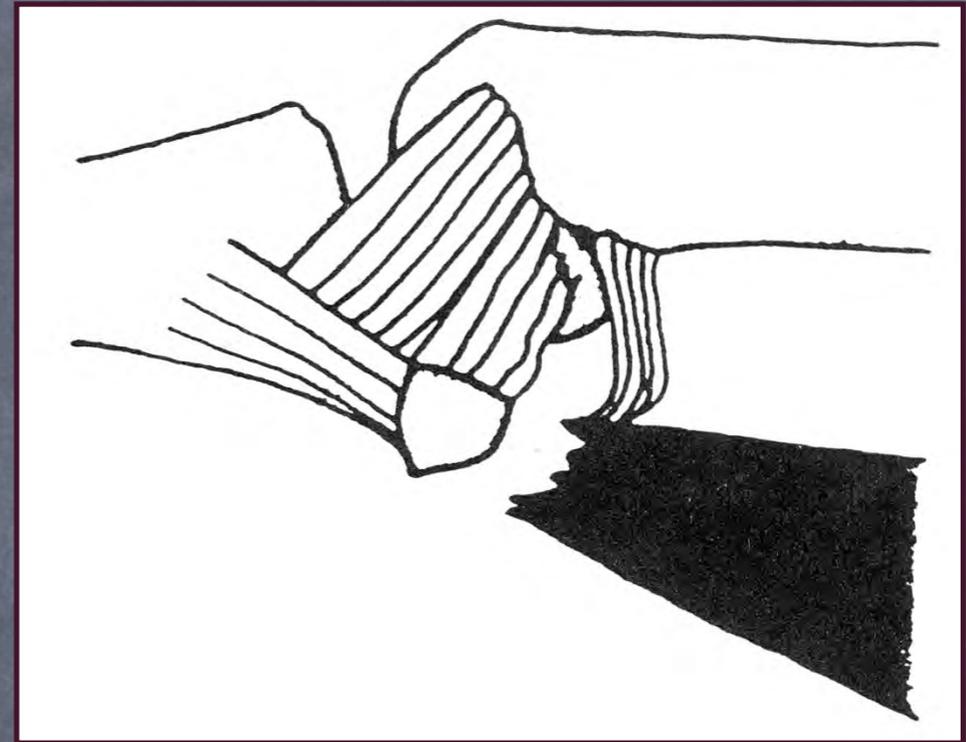
Diagnosis of a rupture of the active restraints (2)

- 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

