Common Hand Problems

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Carpal Tunnel Syndrome

- Compression of the median nerve in the carpal tunnel of the wrist
- Causes: most are of unknown etiology but can be post-traumatic
- Symptoms:
  - Numbness in the radial 3 ½ digits of hand
  - Pain and numbness awakens from sleep
  - Weakness in hand

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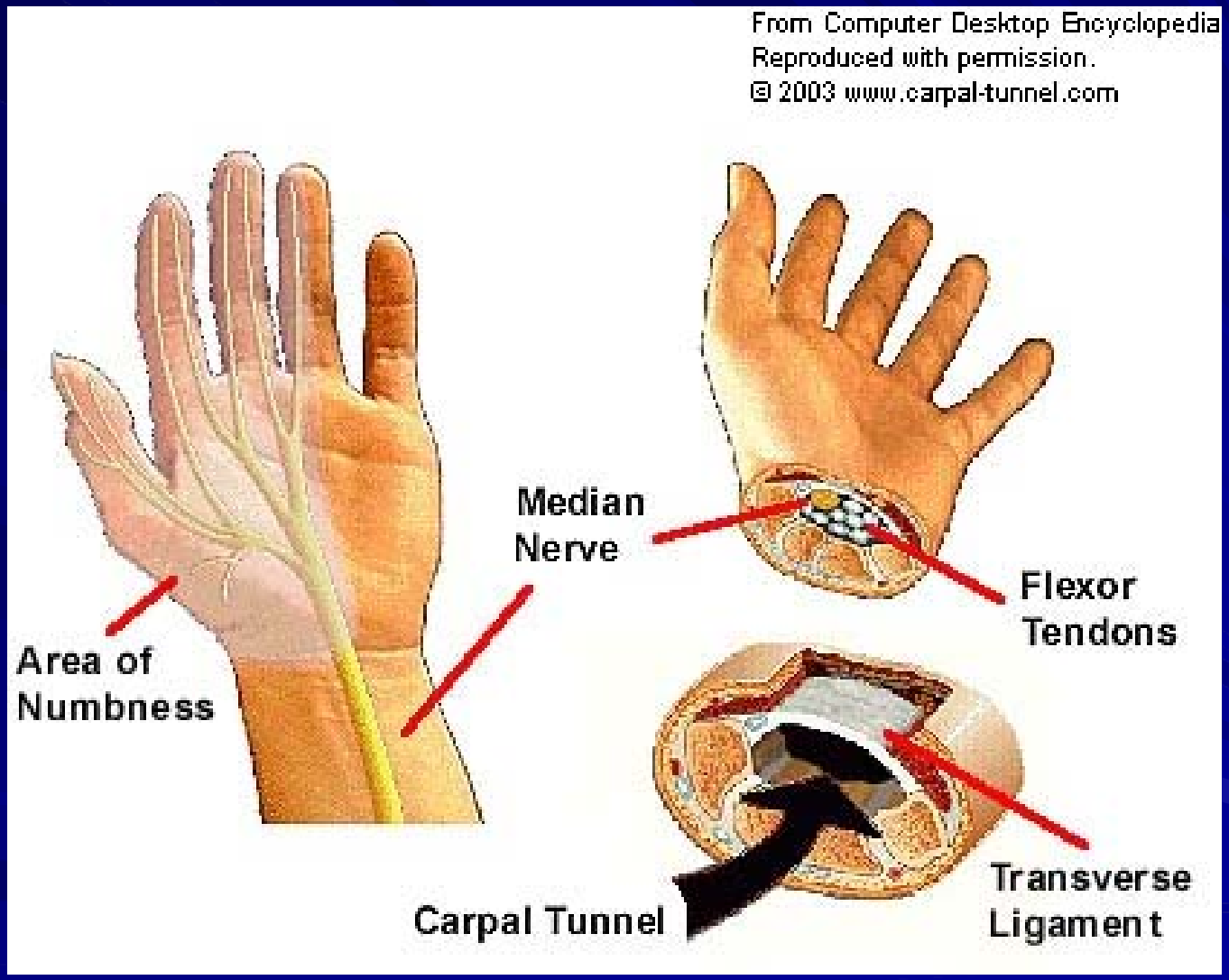

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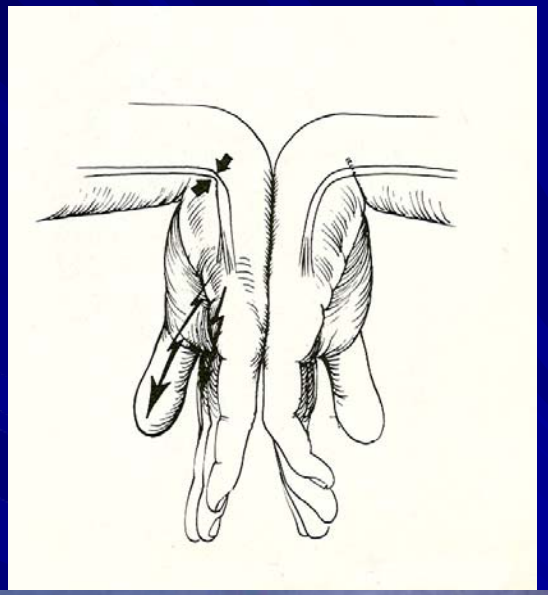
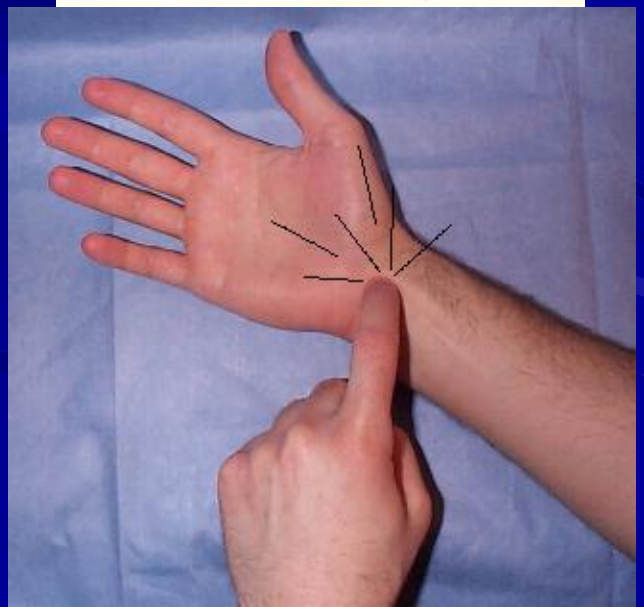
Carpal Tunnel Syndrome

- Exam Findings
  - Decreased strength in abductor pollicis brevis
    - Thenar atrophy = long-term disease
  - Positive Tinel's test
  - Positive Durkan's and Phalen's Maneuvers
  - Decreased two-point discrimination in radial 3 ½ digits





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CTS-6

- Scale can be used in office to determine if have carpal tunnel syndrome
- Having 4 of these signs gives better than 80% chance that patient has CTS
  - Numbness awakens at night
  - Numbness in median nerve distribution
  - Decreased 2 point discrimination in median n.
  - Positive Tinel's
  - Positive Phalen's
  - 4/5 strength or worse in APB
- No need for EMG if above criteria met

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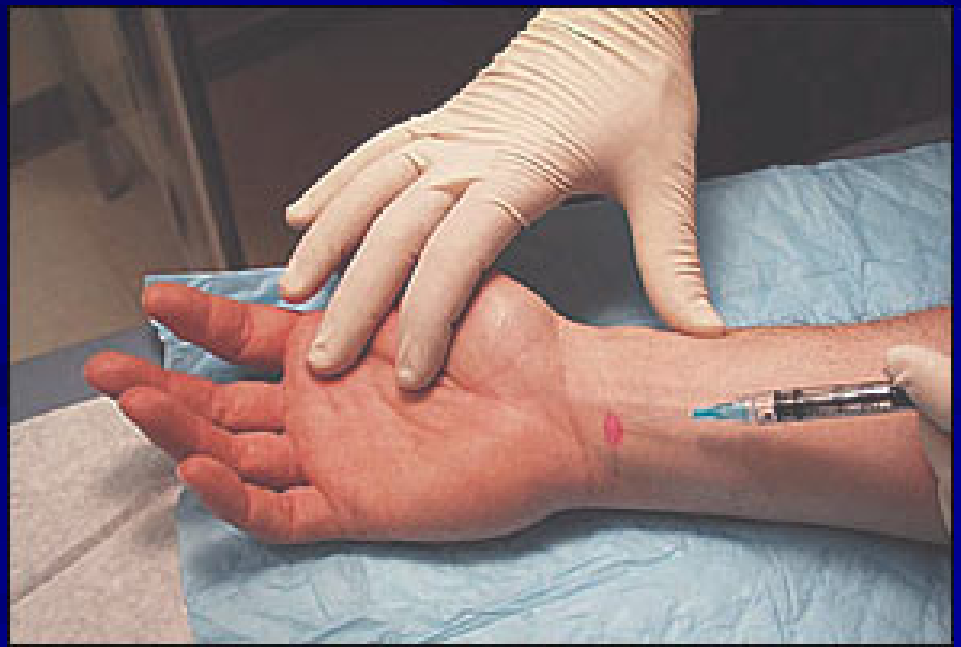
Treatments

- Wrist braces at night
- Injection of steroid into carpal tunnel
  - ~75% success rate initially, drops to 25% symptom-free at 18 months



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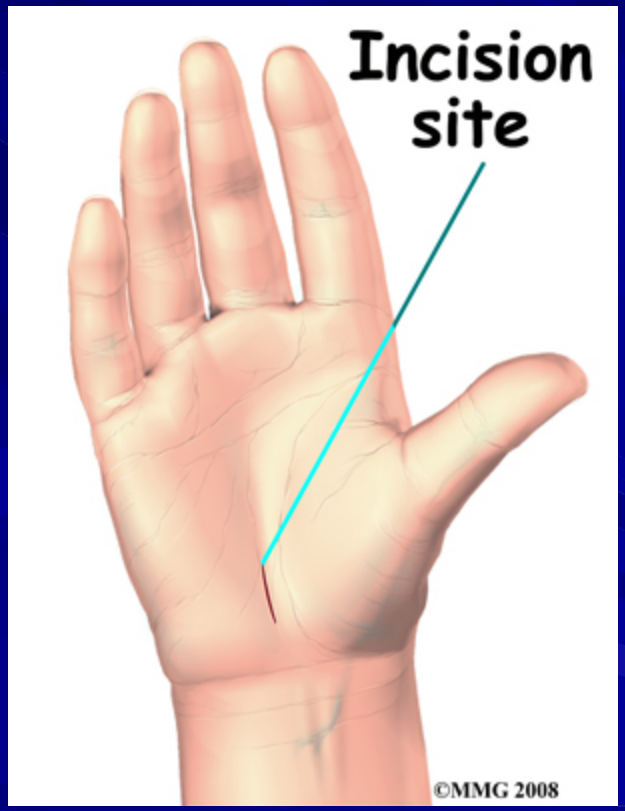
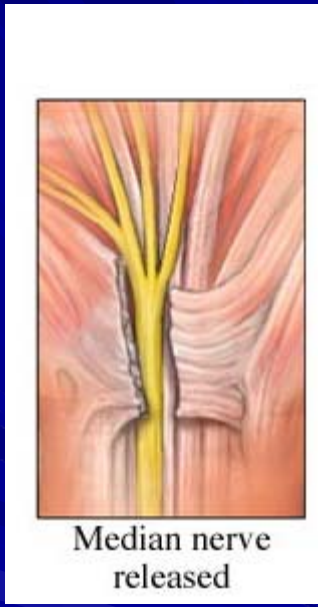
Operative Intervention

- Carpal Tunnel Release
  - 10 minute day surgery operation done with local and sedation
  - Results more reliable if performed on patients with < 1 year of symptoms





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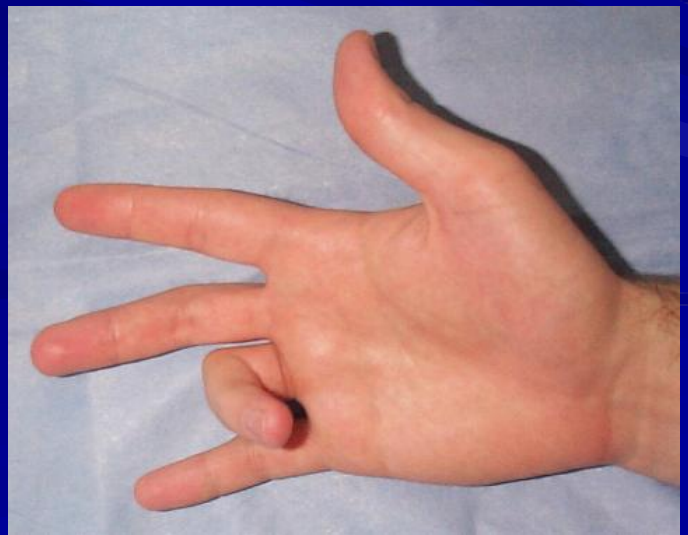
Trigger Finger

- Swelling of the flexor tendon in the hand
- When finger flexes, tendon gets caught on distal side of A1 pulley
- Snapping occurs when finger extends and tendon glides back under pulley
- No routine cause



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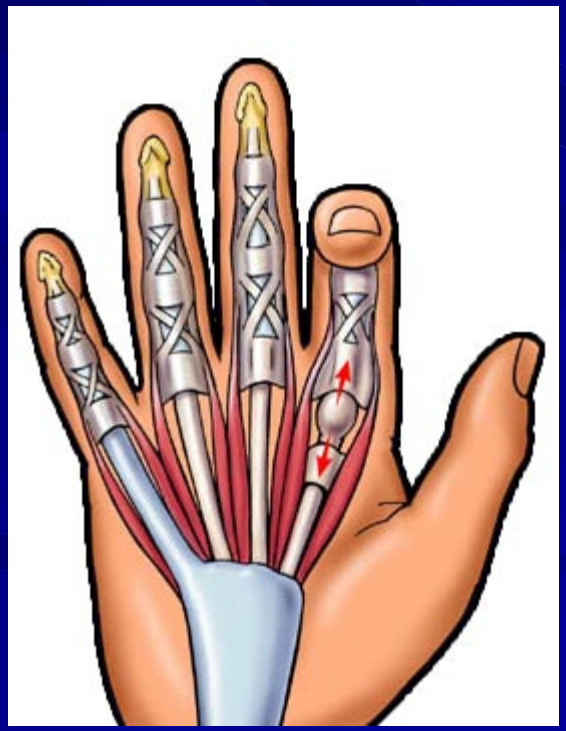
Trigger Finger Signs

- Tenderness over A1 pulley
- Click or catching when flex digit



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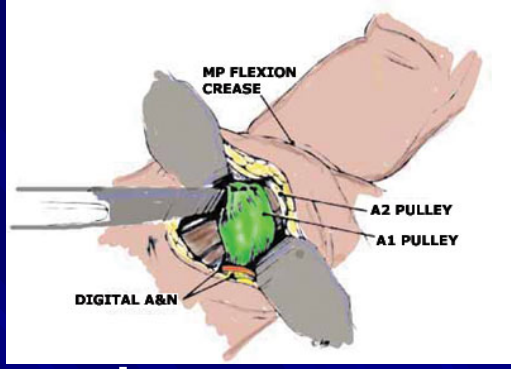
Treatments



- Injection with steroid into flexor tendon sheath of digit – easiest over proximal phalanx volarly
  - 60-80% success rate occurs within first 4 weeks of injection
- Operative treatment if fail injection
  - Outpatient <10 minute procedure done usually under local anesthetic
  - 99% success rate with recurrence unusual

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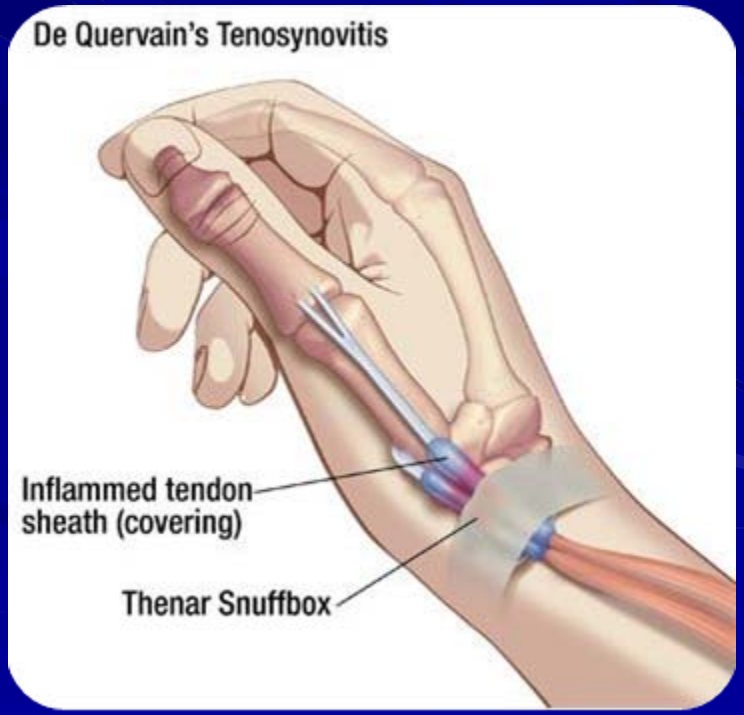
Dequervain's Disease

- Inflammation of the first dorsal compartment tendons at the wrist
  - Extensor pollicis brevis and Abductor pollicis longus
- Typically overuse injury



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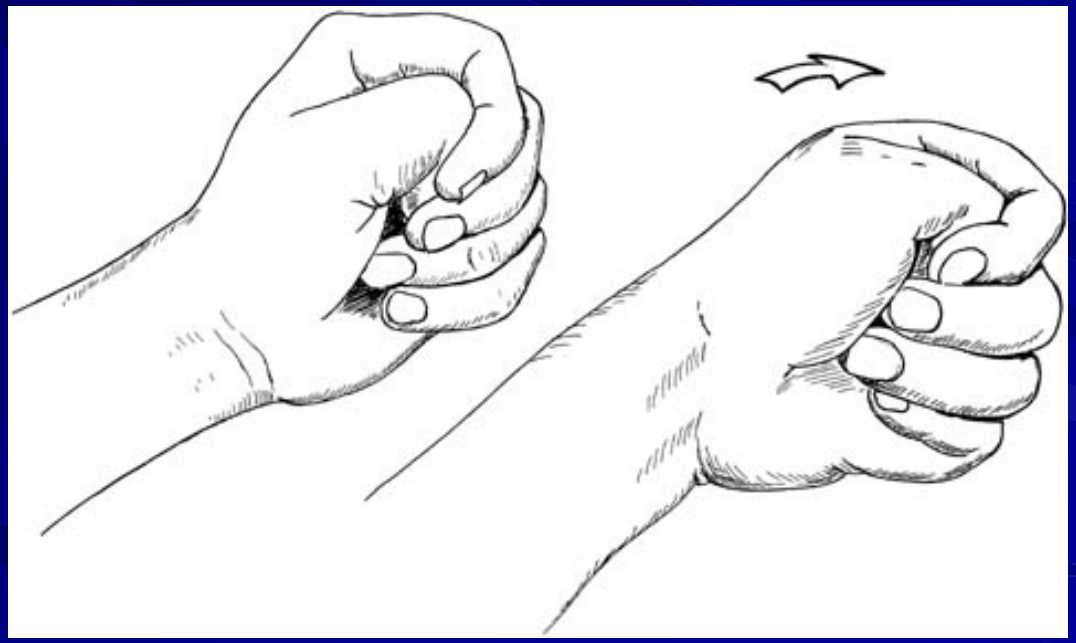
Diagnosis

- Pain with lifting objects
- Positive Finkelstein's Maneuver



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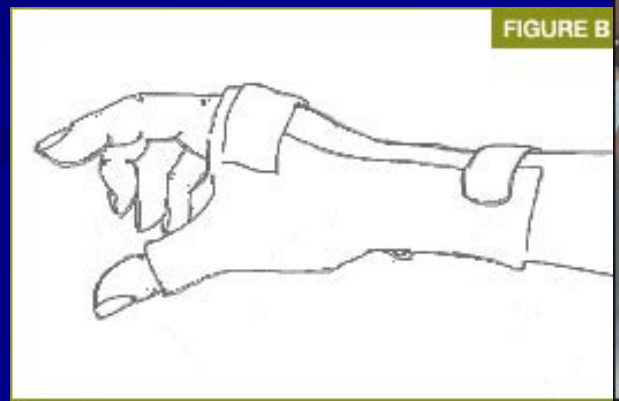
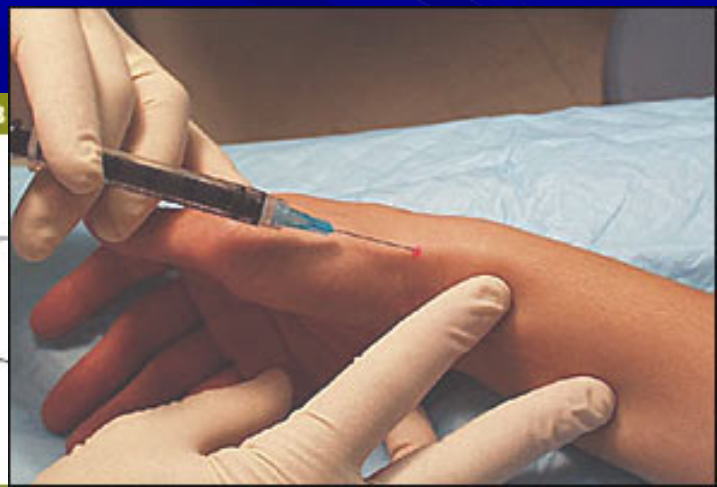
Treatment

- NSAIDs
- Ice
- Thumb Spica Wrist Splint
- Injection of 1 cc 4mg/ml of dexamethasone w/ 1 cc of 1% lidocaine plain into tendon sheath





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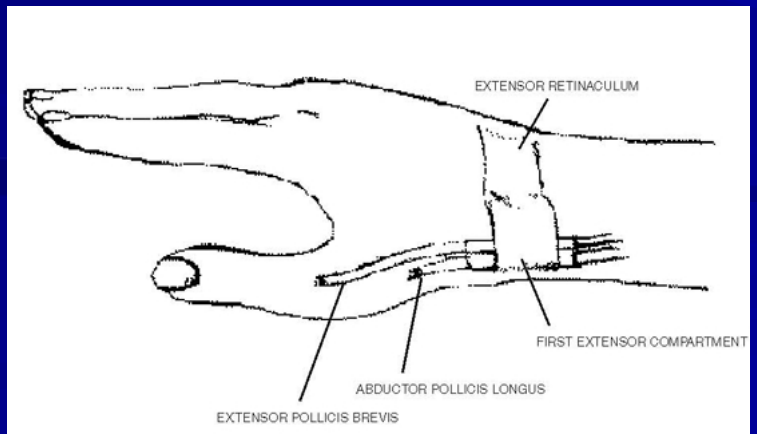
Operative Intervention

- Usually not necessary
- Typically reserved for chronic (>6 months), severe tenosynovitis
- Operation releases these two tendons in similar way to trigger finger release
- >90% success rate for relief of pain



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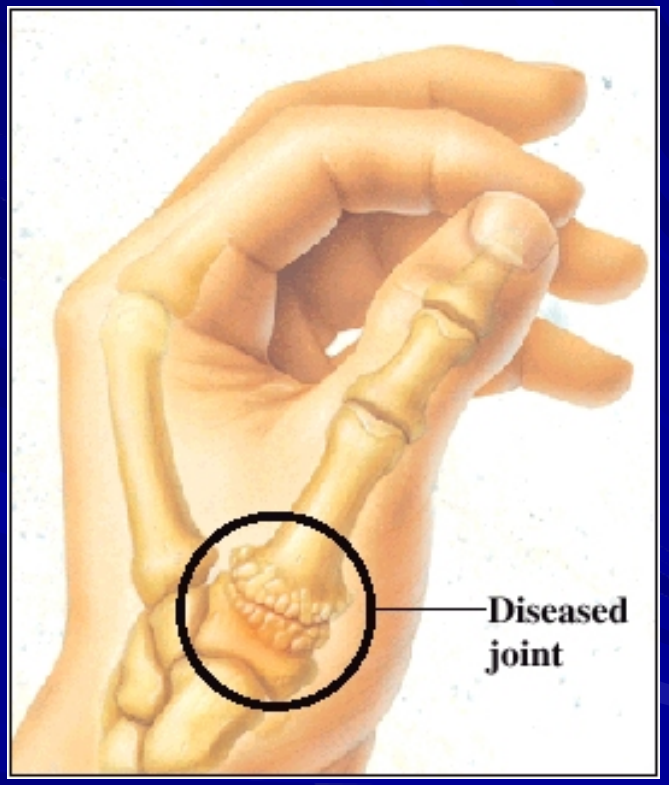
Basilar Joint Arthritis of the Thumb

- Common in caucasian women >50 years old with 9:1 female:male ratio
- Presents with pain and difficulty opening jars and doors
- Swelling and deformity can occur at the carpometacarpal joint of thumb



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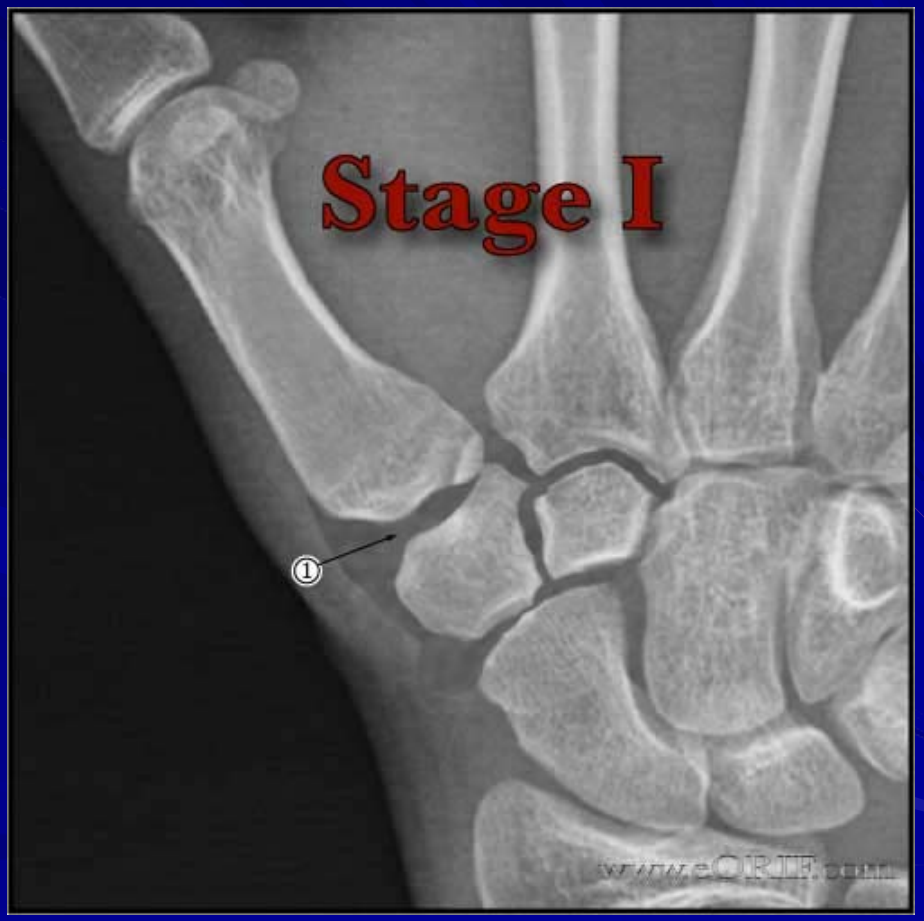
Treatment

- Conservative measures such as thumb spica brace and activity modifications
- Injection of ½ cc of 20mg/ml of aristospan and ½ cc of 1% lidocaine plain into joint



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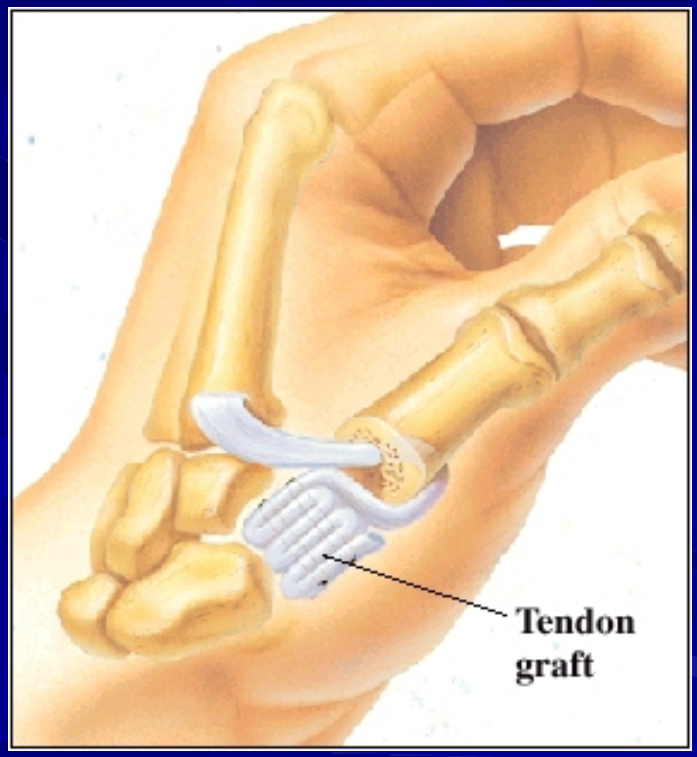
CMC Arthroplasty with FCR tendon interposition

- As high as 95% success rate for relief of pain
- Strength returns to ~50% of normal
- 3 month recovery



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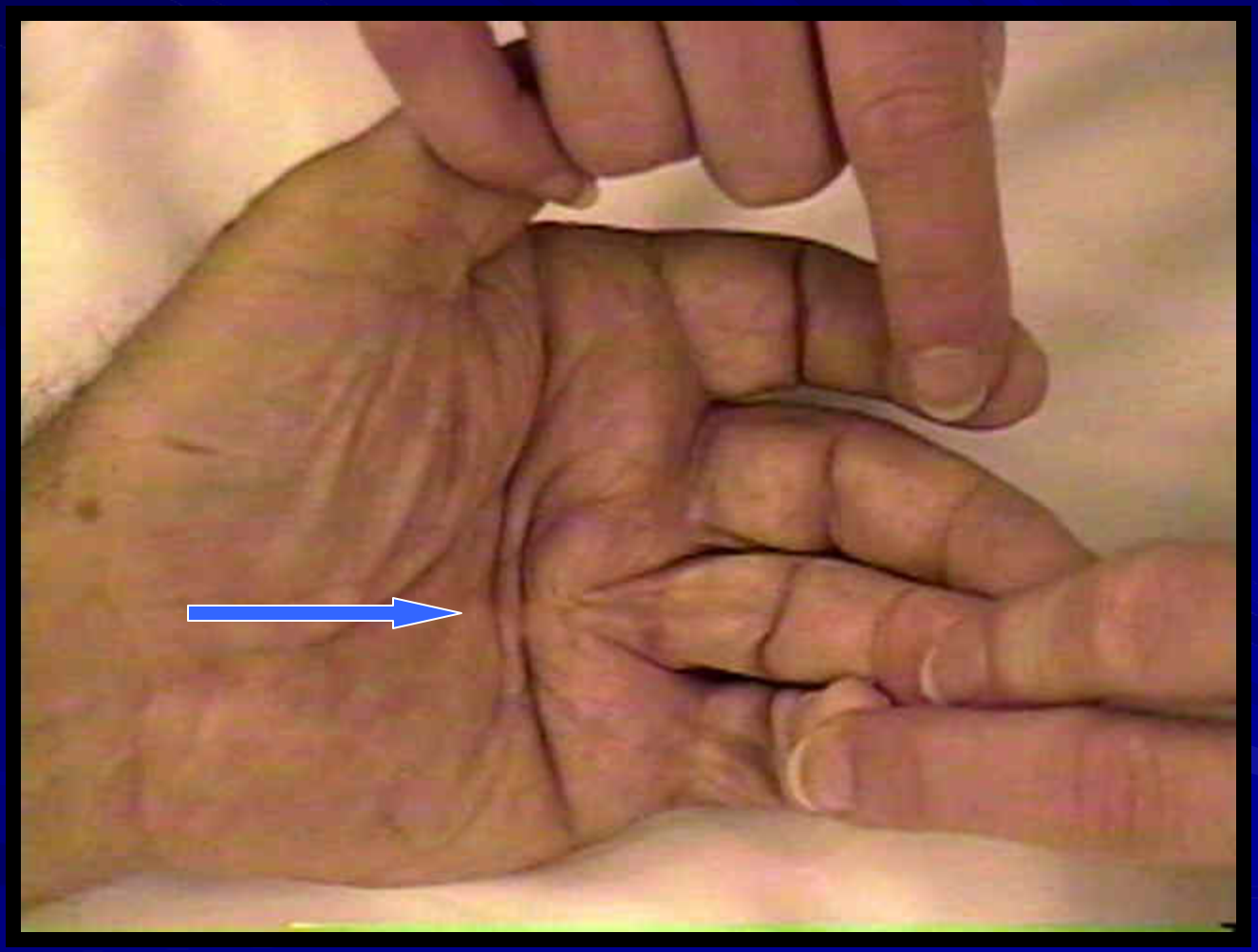
Dupuytren's Disease



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Genetics

- Inherited as autosomal dominant trait with variable penetrance of gene expression due to multifactorial nature of disease
- Greatest concentrations of patients in Scandinavia and Great Britain
- Original gene pool thought to predate Viking Age of the 9th century

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Dupuytren's Nodules and Cords

- Nodules form primarily between MCP and PIP flexion creases
- Myofibroblasts found in nodules likely responsible for contractile nature of tissue
- Higher ratio of type III to type I collagen
- Continuous cord forms from blending of tissues
- Cords anchored to flexor tendon sheath, **skin**, interosseus fascia, periosteum and joint capsule

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Dupuytren's Pathologic Cord Structures Follow Paths Created by the Normal Fascial Anatomy

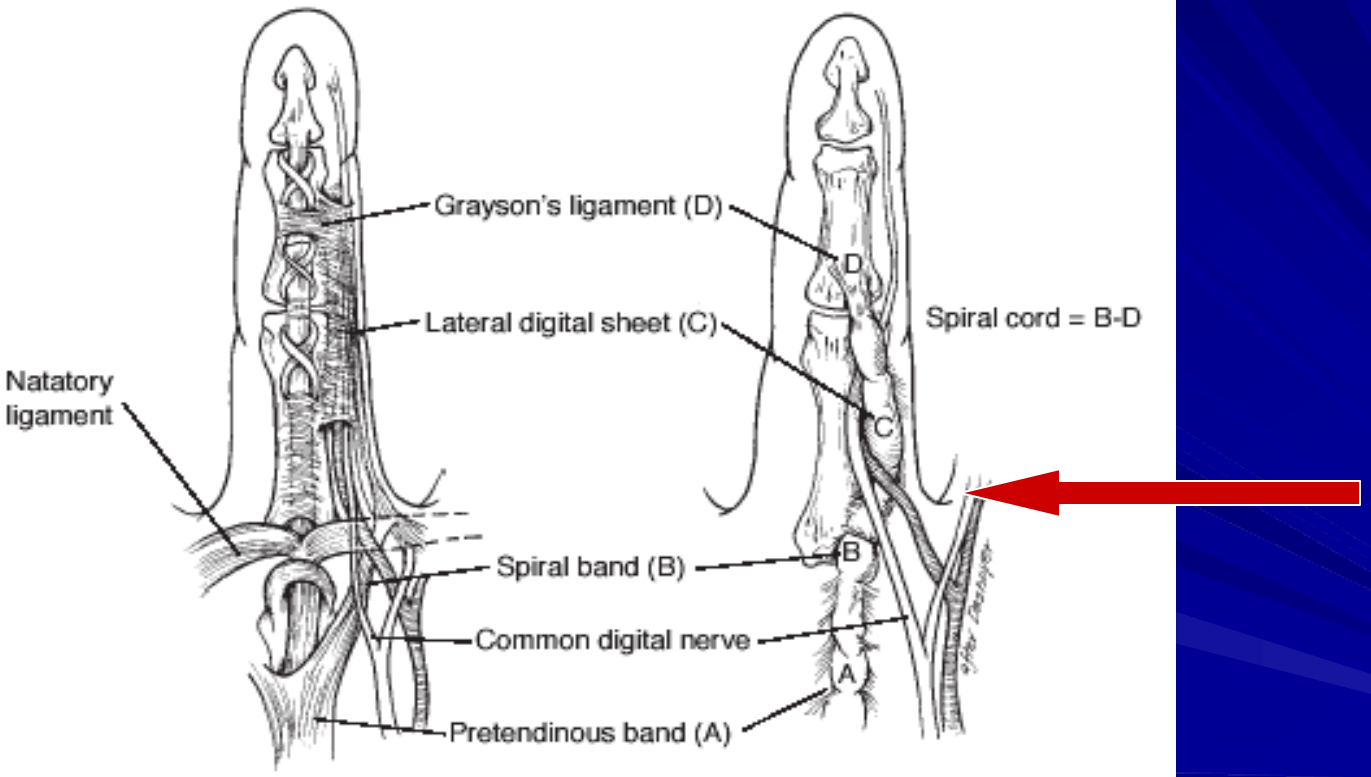

Fig. 4 **Left,** Normal anatomy. **Right,** Formation of a spiral cord from four fascial structures: the pretendinous band, the spiral band, the lateral digital sheet, and Grayson's ligament. The involved digital nerve becomes spiraled around the cord, and the nerve is drawn toward the midline of the digit.

Patient Presentation

- Men more common by 7:1
- Usually presents after age 40
- Many cases are painless
- Presumptive diagnosis of trigger finger by PCP
- Early signs are skin pitting and nodule formation adjacent to distal palmar crease
- Most often affects small and ring fingers, but can affect all including thumb

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Dupuytren's Diathesis

- Patients have strong gene expression for disease
- Often present in 3rd and 4th decades of life
- Aggressive cord development with multiple-digits and bilateral hand involvement likely
- Peyronie's disease - penile fascial involvement
- Lederhose's disease - plantar fibromatosis
- Garrod's nodes - knuckle pads on dorsum of PIP
- High recurrence and complication rates with surgery

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Operative Indications

- MCP joint contracture of 30° or more or a PIP contracture of any degree McFarlane, R J Hand Ther 1997
- Table top test - patient unable to rest palm of hand completely flat on hard surface - correlates with MCP contracture of 30-40°
- Release of PIP joint after fasciectomy is traditionally reserved for a contracture >40°, but recent trends have been away from releasing the joint Hand Surg Update 2

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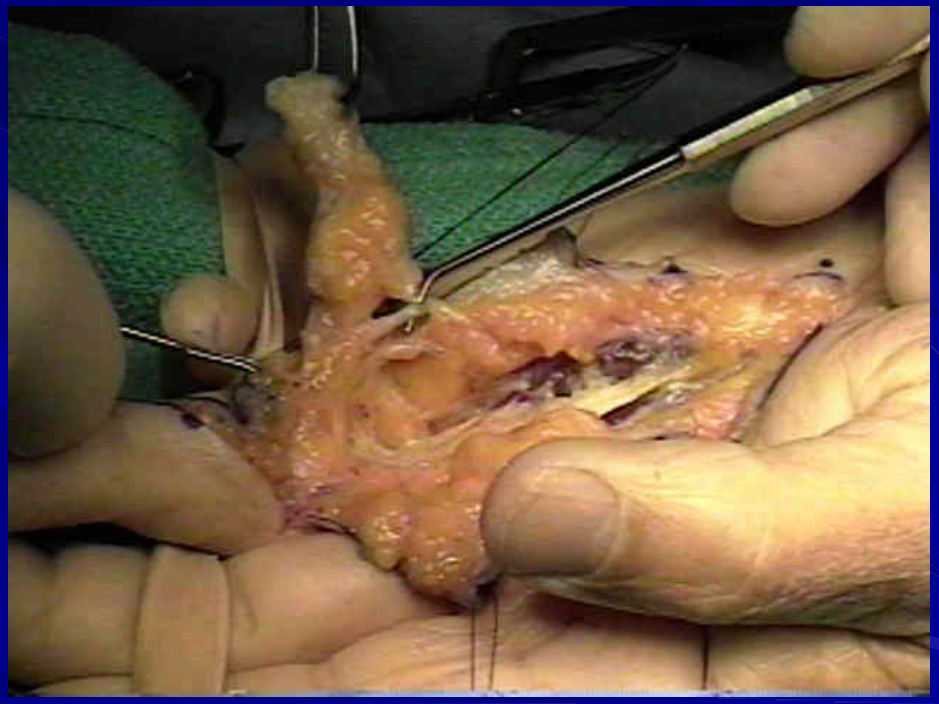
Selective Fasciectomy

- All diseased fascia in the palm and finger is excised.
- Grossly normal areas remain
- 10-60% recurrence rate reported



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Complications

- Hematoma formation
- Injury to digital nerve or artery
- Wound problems
- Flare Reaction: RSD after surgery occurs in 1-8% but increases dramatically in patients who underwent simultaneous CTR-only do one or the other surgery--**NOT BOTH**
- Overall recurrence rates reported to vary from 2-63%

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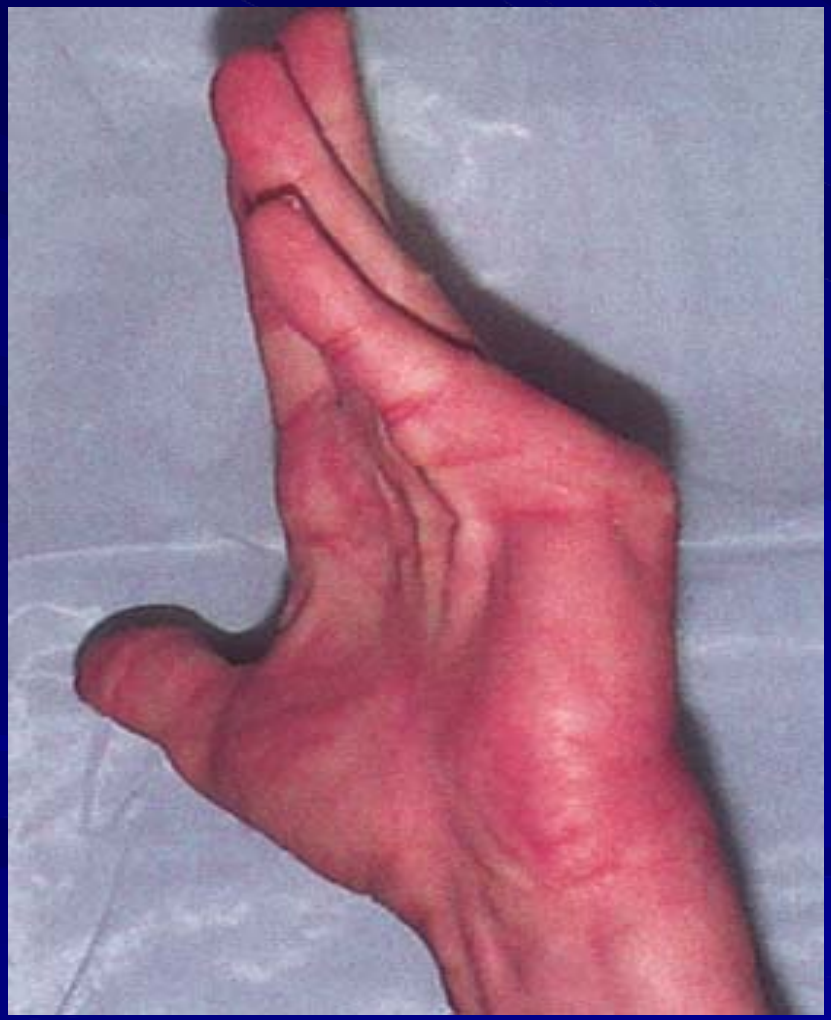
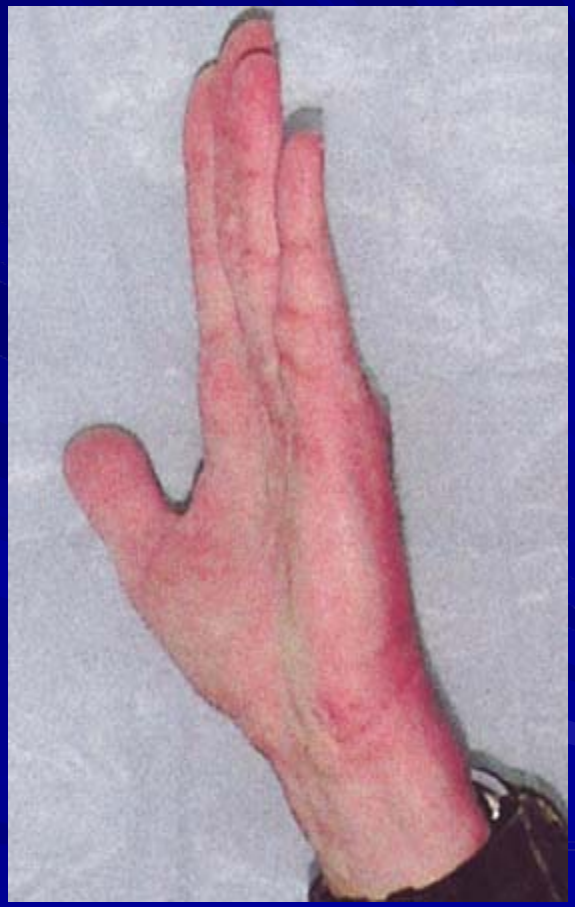
New Horizons
Collagenase Injection





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Thank You