Pain and drooping of middle finger
Boxer’s knuckle
MCP Joint and extensor mechanism anatomy

- Collateral ligaments are taut in flexion and lax in extension – allowing abduction and adduction

- Volar plate – important stabilizer of the joint and interconnected with adjacent MCP joints by deep transverse metacarpal ligament

- Extensor hood (including its sagittal bands) – stabilizes extensor tendon at this level and contributes to stability of the joint

• **Extensor tendons**
  
  – **Extrinsic (originate in forearm and elbow):**
    - extensor digitorum communis
    - extensor indicis proprius
    - extensor digiti quinti minimi
  
  – **Intrinsic (originate in hand):** interosseous and lumbrical muscles

• Extensor tendons reach the hand by passing through fibro-osseus tunnels or dorsal compartments in the wrist

• At MCP joint the extrinsic tendons are stabilized over the dorsum of the metacarpal head by the extensor hood

• Sagittal bands are main component of extensor hood, which starts at the volar plate and has a dorsal tendinous point of insertion

• Distal to the sagittal bands, the transverse fibers of the intrinsic tendons contribute to the anatomy of the extensor hood

• Distal to the MCP joint, the extrinsic and intrinsic tendons blend into the dorsal apparatus and are circumferentially distributed over the dorsum of the fingers.

• The extrinsic extensor tendon continues in the central and lateral slips

• Central slip (also receive fibers from intrinsic tendons) inserts on base of middle phalanx
• Intrinsic tendons contribute to form the lateral slips → conjoint tendons

• conjoint tendons converge distally to form the terminal tendon which inserts on base of distal phalanx
Boxer’s Knuckle

- Subluxation or dislocation of the extensor digitorum communis tendon at the MCP joint
- Occurs as a result of tearing of the sagittal bands
- Usually due to a direct blow forcing the finger into flexion or of forced flexion and ulnar deviation
- Ulnar subluxation is more common and usually affects the middle finger
- Radial subluxation is unusual but can occur with forced valgus injury
- On exam the patient has pain and swelling over MCP joint
- Usually inability to completely extend the MCP joint
- If untreated can have a history of multiple episodes of pain and swelling over the MCP joint with a snapping sensation in the finger
Imaging

• Dislocation of the tendon best depicted on axial images

• Morphologic and signal intensity abnormalities within and around the extensor hood components (especially the sagittal bands) with poor definition, focal discontinuity and focal thickening
Treatment

• In acute phase, conservative treatment with splinting of the MCP joint in extension

• Surgical correction is necessary in chronic symptomatic cases
References
