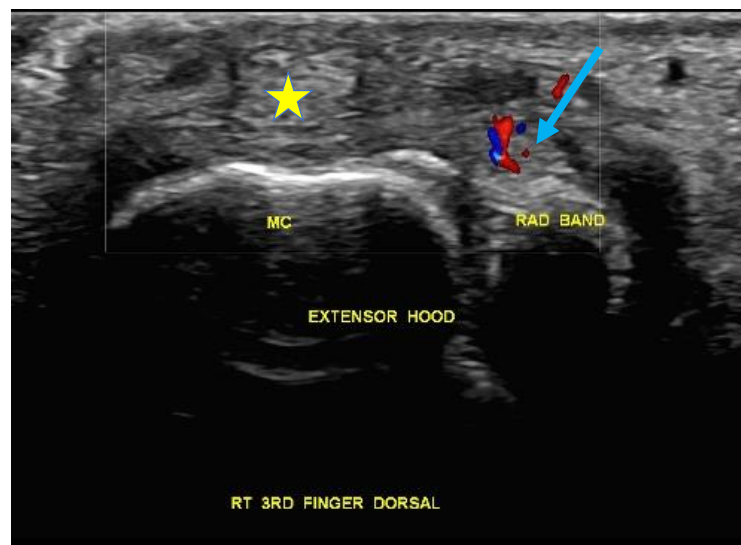


52 M injured hand 2 months ago (not boxing).

**Findings:**

- Ultrasound demonstrates high grade tearing of the radial sided sagittal band of the right middle finger.
- The extensor tendon displays ulnar subluxation in the neutral position, and frank ulnar dislocation with flexion of the metatarsophalangeal joint.
- Normal size and echogenicity of the extensor tendon.
- The volar plate is intact.
- No joint effusion.



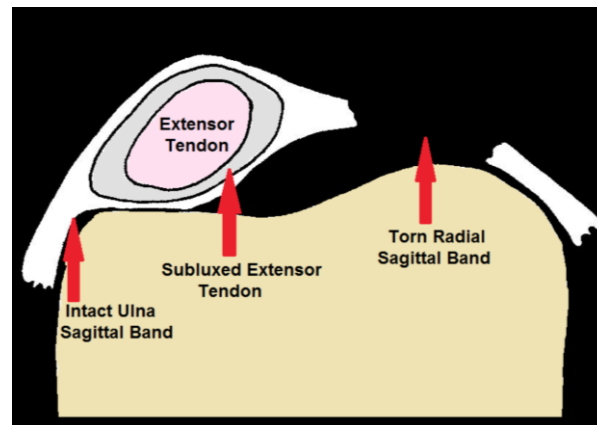
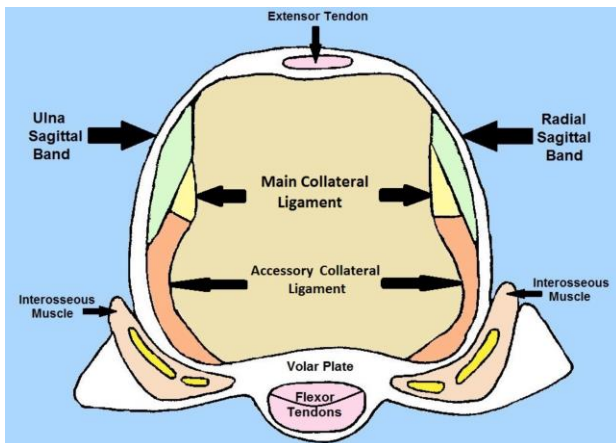
**Above:** Picture demonstrates ulnar subluxation of the extensor tendon in the flexed position.

**Top right:** Extended MCP shows extensor tendon (star) in near neutral position. Radial band of extensor hood is disorganised with increased vascularity (blue arrows)

**Right:** Image with flexed MCPJ shows ulnar subluxation of extensor tendon (blue arrows) due to deficiency of the radial band.

## Discussion:

- Boxer's knuckle is used to describe injury to the sagittal band at the metacarpophalangeal joint (MCPJ).
- The extensor tendon of the MCPJ is held in place by both an ulnar and radial sagittal band.
- The middle finger is the most commonly injured finger, and in 90% of cases, the radial band is torn.
- Injury to the radial sagittal band results in ulnar deviation of the extensor tendon on flexion of the MCPJ.
- Anatomy:
  - The extensor hood is an aponeurosis which overlies the MCPJ and comprises of the central tendon and two peripheral fibres called sagittal bands.
  - The common extensor tendon comprises of a central superficial tendon and two deep tendons laterally, to which the sagittal bands attach.
- Clinical
  - Injuries to the extensor hood are often clinically apparent due to ulnar deviation of the extensor tendon (as seen in this case)
- Imaging:
  - Dynamic ultrasound is the modality of choice given the superficial structures, high spatial resolution and ability to demonstrate subluxation of the tendon on flexion.
  - MRI can also demonstrate injuries to the sagittal band
- Treatment:
  - Non-operative management – splint for 4-6 weeks
  - Repair – often in professional athletes



## **Further Reading:**

Lopez-Ben R, Lee DH & Nicolodi, DJ. Boxer Knuckle (Injury of the Extensor Hood with Extensor Tendon Subluxation): Diagnosis with Dynamic US—Report of Three Cases. *Radiology*. 2003. 228(3), 642–646.

Hame SL, Melone CP Jr. Boxer's knuckle. Traumatic disruption of the extensor hood. *Hand Clin* 2000;16:375-80

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