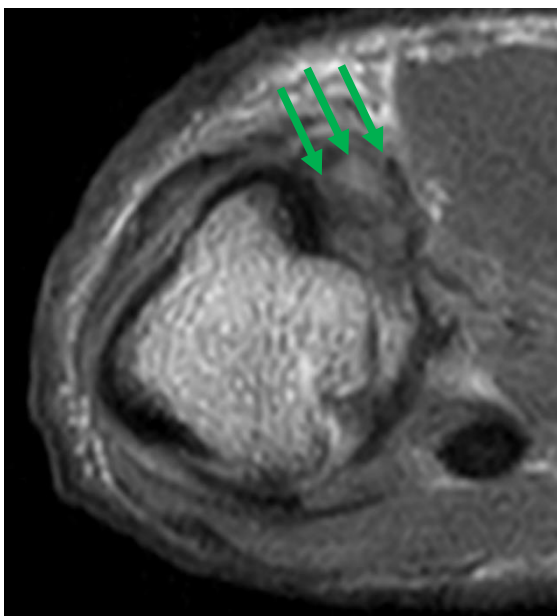


**39 year old runner presenting after a fall causing thumb dislocation, with clinically suspected UCL injury**

MRI Findings:

- High grade tearing and rupture of the ulnar collateral ligament at the phalangeal insertion
- The detached ligament lies superficial to the abductor aponeurosis
- Oedema and blood-fluid products surrounding the injury, but no fracture/avulsion

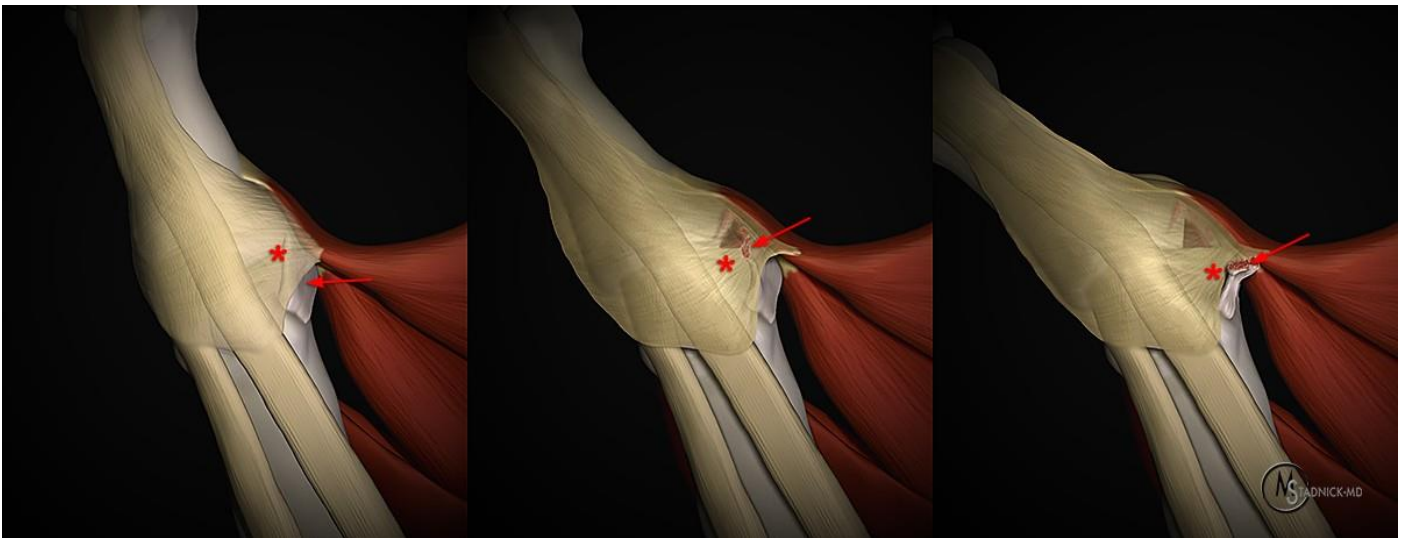


**Coronal PD and PD SPAIR (mag):** Discontinuity of the phalangeal attachment of the ulnar collateral ligament (Blue arrow). The torn, retracted fibres are noted proximal to the adductor pollicis aponeurosis, and seen as a mass-like appearance of fibrous tissue (orange arrow). The tendon of adductor pollicis brevis remains, and the axial image to the left confirms that the UCL is flipped over the APB, making the diagnosis of Stener lesion (green arrow).

## Discussion

- Mechanism
  - Caused by hyper-abduction injury to the thumb
    - Classic history – fall onto outstretched hand with a flexed thumb (e.g. holding a pole - 'Skier's thumb')
  - With abduction comes strain on the UCL → Sprain/strain → Tear
  - With further abduction, the torn UCL fragment 'flips' over the APB/adductor pollicis aponeurosis
- Clinical
  - UCL chronic injury presents with weakened key-grip
    - Classically described in Scottish gamekeepers who used their thumbs to break rabbit necks
  - Acute sterner lesion presents with appropriate history, +/- firm nodule at base of 1<sup>st</sup> MTP
- Management
  - Stener lesion will not heal appropriately without surgical intervention
  - Chronic UCL deficiency → accelerated arthritic degeneration

## Anatomic Correlation



The image above, taken from an excellent Radsourc article by Dr Stadnick, shows the anatomy of the UCL and its progression of disease. The image on the left shows the normal UCL (arrow) and the normal overlying adductor aponeurosis (asterisk). The second image arrow now shows an UCL tear from valgus stress. The third image on the right shows that, with further valgus stress, the torn UCL has 'flipped' over the adjacent adductor aponeurosis to lie – this is the small mass-like nodule seen on the MRI on the prior page. (Reference: Stadnick ME, Ulnar collateral ligament tears of the thumb, RadSource MRI Web Clinic, Feb 2016).

- X-Ray
  - Non-specific soft tissue swelling usually present
  - May see avulsion fragment of UCL insertion at base of proximal phalanx
    - 'Robert's view' taken with thumb hyperpronated provides a true AP of the 1<sup>st</sup> MCP joint
- MRI
  - Torn UCL
  - UCL comes to lie as a nodular mass superficial to the APB / aponeurosis
  - Adductor aponeurosis noted between the retracted UCL and proximal phalanx base
  - MRI most sensitive and specific marker
- Ultrasound
  - Newer work shows that ultrasound can be as good as MRI for visualisation of the UCL injuries, but requires experienced MSK sonography and radiologist input to make the diagnosis – currently, MRI is the mainstay of imaging.

## Further Reading:

Stadnick ME, Ulnar collateral ligament tears of the thumb, RadSource MRI Web Clinic Feb 2016, Acc 28/03/2019 <<http://radsourc.us/ulnar-collateral-ligament-tears-of-the-thumb/>>

Mahajan M & Rhemrev S, Rupture of the ulnar collateral ligament of the thumb – a review, International journal of emergency medicine, 2016, 6:13

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Tsiouri C et al, Injury to the ulnar collateral ligament of the thumb, Hand, 2009, 4:12-18, DOI 10.1007/s11552-008-9145-8