

ULNAR SIDED PAIN

Anatomic Consideration

1. Normal load: 80% by Radius and 20% Ulna
2. Arc at sigmoid notch [DRUJ]: of radius is 105° and ulna is 50° : This joint is incongruent
3. Ulna minus hand: Neutral rotation and PA view [grip]
4. Interosseous membrane tightens in supination and transmits load
5. Function of TFCC
6. Stabilization of IRUJ
7. UCL [ulnocarpal ligament] : ulna to lunate/Triquetrum is stretched in Rheumatoid arthritis
8. ECU and its sheath

Ulna Variance

PA with Neutral rotation

Ulna -ve variance: Keinboek's

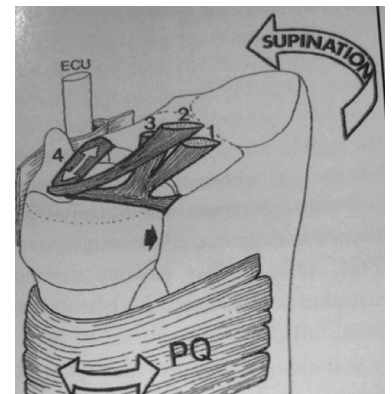
Ulna +ve variance: Increase load on TFCC

ulnar impingement syndrome

DRUJ

Ulnocarpal ligament

1. U-L L
2. U-C L
3. U-T L
4. D R U L



Normal load: 80% by Radius and 20% Ulna

TFCC

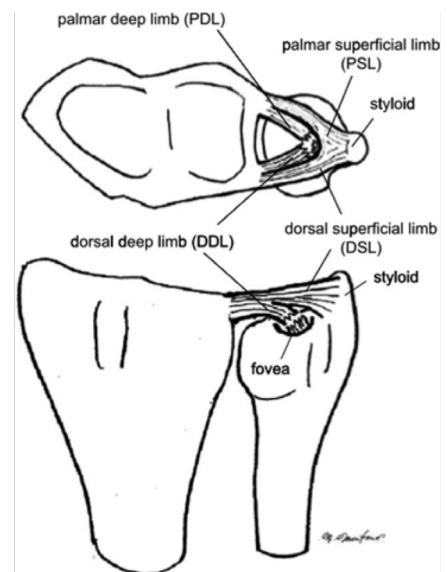
Extends: Sigmoid notch to the base of styloid process of ulna

Disc is thinner in the centre than periphery [2mm Vs 5mm]

Periphery forms Volar and dorsal Radio-ulnar ligament.

Ulnar -ve hand have thicker TFCC and ulna +ve have thinner TFC

UCL volar extension from ulna to Lunate and Triquetrum.



It resists volar and ulnar displacement force created by the flexor. This ligament is attenuated in RA

TFCC complex

1. TFCC
2. ECU & sheath: dynamic stabilizer of the wrist.
3. Ulnar collateral ligament + Radio-ulnar ligaments + Luno-Triquetral ligament
4. Pronator quadratus
5. Meniscus: may present in some wrist.

This extends from styloid (distal to TFCC) to volar part of triquetrum.

It may contain an ossicle called Lanula [4%]

No clinical importance

6. UCL: Volar extension of disc: Ulnocarpal ligament
(Ulnocarpal ligaments to lunate and triquetrum)
7. Luno-triquetral interosseous ligament
8. Palmar RU Ligament: restrain dorsal subluxation in supination
Dorsal RU Ligament: restrain palmar subluxation in pronation



9. Interosseous membrane: On supination, it tightens and gives some stability.

It transmits 80% of load from distal radius to proximal ulna

Damage to this membrane causes axial instability[Essex Lopresti]

The vascular supply of the TFCC:

By terminal portions of both the anterior and the posterior interosseous arteries, the palmar, ulnar, and dorsal of the disk are well vascularized, whereas the central and radial portions are avascular.

Implications: The healing potential of the disk and the radioulnar ligaments following injury, with peripheral ulnar-sided detachments demonstrating a superior capacity to heal following repair when compared with radial-sided detachments.

CAUSES FOR ULNAR SIDED PAIN

Dorsal:

VISI and midcarpal instability

ECU: Subluxation; Tenosynovitis

DRUJ: Arthritis: Traumatic/inflammation; Instability

TFCC: Traumatic or degenerative rupture

Ulnar styloid: NU

Impaction ulno-capitate; Carpometacarpal boss

Carpal: Keinbock's, ganglion, Osteoid Osteoma, Enchondroma
Intercarpal arthrosis, Carpal fracture
Ulnar head instability

Palmar:

Guyons canal: Ganglion

UA thrombosis

Hook of the hamate fracture

Pisotriquetral problems

Chronic overuse injuries include extensor carpi ulnaris (ECU) tendonitis and flexor carpi ulnaris (FCU) tendonitis. The presentation in these conditions may be indolent, although acute injuries can result in chronic tendonitis. The history may include a new activity or a change in an existing activity where the mechanical use of the hand and wrist has been altered.

Assessment

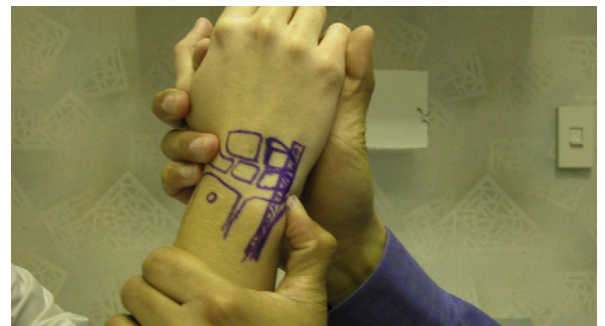
Deformity and swelling

Localise tenderness

The ulna may be prominent dorsally, indicating an injury to the DRUJ.[compare]

The DRUJ can be visualized and palpated dorsally.

The TFCC is best palpated in the soft spot between the ulnar styloid, FCU, volar surface of the ulnar head, and pisiform. This has been described this as the fovea, and pain in this area is considered a positive "ulna fovea sign."



Reproducible pain suggests:

1. Ulnotriquetral ligament tear
2. Foveal disruption of the TFCC

Palpate: The ECU tendon sheath lies just dorsal to the TFCC and can be palpated along its length.

The pisotriquetral joint is palpated at the proximal extent of the hypothenar eminence, finger's

breadth distal to where the TFCC is palpated.

3 different provocative maneuvers L-T instability

1. Lunotriquetral ligament ballotement

2. The Regan “shuck” involves moving the lunate in a volar and dorsal direction while the remaining wrist in the opposite direction.

3. The ulnocarpal stress test is a useful provocative maneuver that suggests the presence of ulnar-sided pathology. The test is performed by applying axial stress to a maximally ulnar deviated wrist and bringing the wrist through pronation and supination.

A positive ulnocarpal stress test had TFCC injuries, LT ligament injuries, ulnocarpal abutment syndrome, and arthritis.

The piano key test assesses disorders of the DRUJ. Applying a dorsal to volar load across the ulna 4 cm proximal to the DRUJ performs the test. Pain should be reproduced at the DRUJ level.

Range of movement tests

NV assessment