



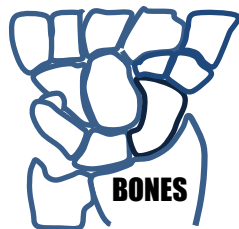
Dorsal wrist pain: A Pictorial Review

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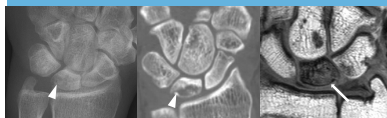
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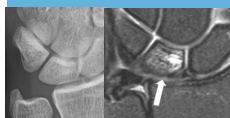
Pain on dorsal side of the wrist is a common presenting symptom in clinical practice. Due to the small size of anatomical structures in this region, diagnosis is rendered challenging to radiologists. There has been literature coverage of radiographic features of pathologies causing ulnar and radial wrist pain. This pictorial essay discusses the particular spectrum of pathologies which causes dorsal wrist pain by category — pathologies in the carpal bones, joints, ligaments, tendons, or due to the presence of mass lesion.



Kienböck Disease

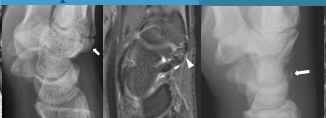


Osteonecrosis of lunate, commonly seen in young female patient in the dominant wrist. 80% are associated with negative ulnar variance. XR and CT shows sclerosis and flattening of the lunate (arrowhead), while MRI shows sclerosis (arrow).



MRI has a higher sensitivity as it can detect edema (arrow) before change is apparent on plain radiograph.

Carpal boss



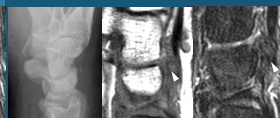
May represent os styloideum (arrow), osteophyte or hypertrophied bony protuberance on the dorsal surfaces of the base of the 2nd /3rd metacarpals. MRI shows edema in the bones due to abnormal motion (arrowhead).

Triquetral fracture

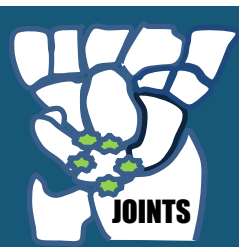


Second commonest carpal bone fracture after scaphoid fracture. It generally occurs at the dorsal aspect where the avulsed bone fragment lying at the dorsal aspect of the triquetrum creates a "popping duck sign" (arrow). MRI shows corresponding edema (arrowhead).

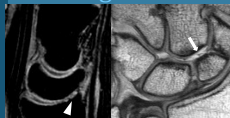
Post-traumatic scarring



After triquetral fracture, patient may present with persistent pain due to scarring. MRI confirms presence of scar tissue at the dorsal aspect of the triquetrum (arrowheads), which exhibits low T1W and T2W signals.

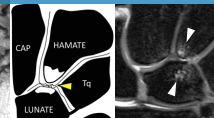


Cartilage loss



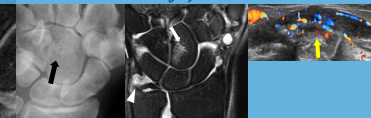
(left) In scapholunate dissociation, cartilage loss may be seen at the lunette fossa (arrowhead) and mid carpal joint. (right) MR arthrogram as well as traction MRI improves the visualisation of cartilage loss (arrow).

Hamatolunate impaction



This happens most commonly in Type II lunate morphology where there is a medial facet on distal lunate for articulation with hamate. Repeated impaction of the opposing articular surfaces of hamate and lunate (yellow arrowhead) results in marrow edema (white arrowheads), chondromalacia and degenerative changes.

Inflammatory joint diseases

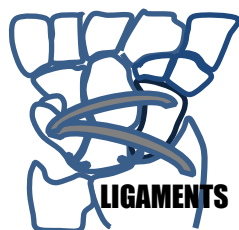


Rheumatoid arthritis is one of the examples of inflammatory joint diseases. XR shows only small erosions in the capitate (black arrow). However, MRI shows marked synovial hypertrophy (arrowhead) and marrow edema in the capitate (white arrow). USG shows marked synovial hyperaemia (yellow arrow).

Gouty arthritis



XR shows multiple punched out lytic lesions i.e. erosions in the carpal bones (arrows). USG shows gouty tophi with echogenic foci suggestive of calcifications (arrowheads).



Extrinsic ligament tear

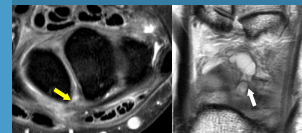


(left) Normal dorsal intercarpal ligament (arrowheads) and radiotriquetral ligament (black arrows) on MRI. (right) Partial tear of intercarpal ligament (white arrows) and radiotriquetral ligament (yellow arrows) on MRI.

Intrinsic ligament tear



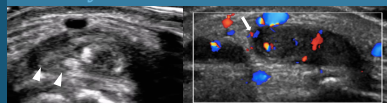
Two cases of scapholunate ligament tears on MRI. Fragmentation of SL ligament with abnormal signal (white arrow). Avulsion from the scaphoid side of SL ligament (yellow arrow).



The dorsal part of the scapholunate ligament is the strongest. Dorsal side tears (yellow arrow) are more difficult to diagnose. Association with ganglion cyst (white arrow) can give clue to the underlying SL ligament tear.

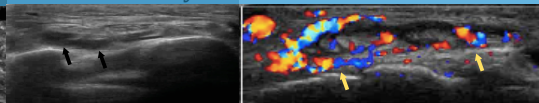


Tenosynovitis

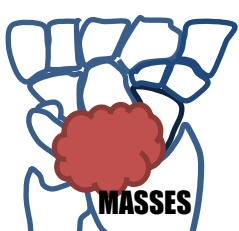


Inflammation of the synovium surrounding a tendon, may be seen with or without tendinitis/tendinitis. There are multiple possible aetiologies including gout (left two images) and infection etc. USG shows thickening of the synovium (arrowhead) and peritendinous hyperaemia (arrow).

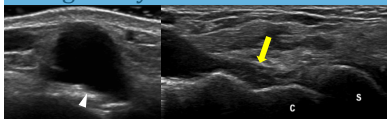
Infective tenosynovitis



Case of dog bite with progressive swelling over dorsal aspect of the wrist. USG shows thickening with effusion of the tendon sheaths (black arrows) and peritendinous hyperaemia (yellow arrows).

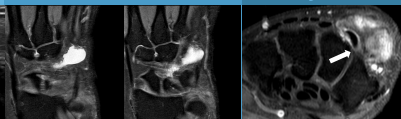


Ganglion cyst



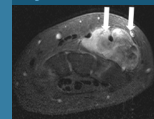
USG shows an anechoic cyst with clear content (arrowhead) and posterior acoustic enhancement. It could be traced back to the intercarpal joint (yellow arrow). c, capitate; s, scaphoid.

Tenosynovial GCT



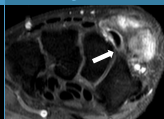
MRI may show unilocular or multilocular cyst adjacent to a joint or tendon sheath.

Synovial sarcoma



Intermediate to high grade soft tissue tumor, typically seen in adolescents and young adults, affecting the knee region.

Tenosynovial GCT



Giant cell tumor (GCT) is usually a benign lesion of the tendon sheath and is the second most common soft tissue mass in the hand and wrist. Typically seen in 3rd to 5th decades.