Overview
Ulnar-sided wrist pain is a common and often debilitating condition which can be a diagnostic challenge due to the complex and small anatomical structures involved, as well as the range of underlying pathologies which require the appropriate imaging modality for accurate diagnosis.

Bone
- Fractures of the ulnar styloid and hook of hamate
- Kienbock disease (avascular necrosis of the lunate)
- Ulnar impingement

Ulnar styloid fracture
Ulnar styloid avulsion with high-grade strain injury to the Triangular fibrocartilage complex (TFCC)

Kienbock Disease
Kienbock disease refers to avascular necrosis of the lunate. Coronal T2 STIR and coronal and axial T1 sequences demonstrate abnormal low T1 and high T2 signal intensity affecting the entire lunate. Plain radiograph demonstrates a dense, sclerotic lunate.

Nerve
Ulnar nerve compression
cyst consistent with a ganglion in Guyon’s canal causing compression on the ulnar nerve. Atrophy and increased signal intensity in the hypothenar muscles due to denervation.

Joint
- Uncomplicated ulnar styloid and hamate-lunate impaction
- Pisotriquetral orthopathy
- Lunotriquetral coalition
- Distal radio-ulnar joint (DRUJ) instability

Uncomplicated impaction
Coronal T2-weighted MR image. Uncomplicated impaction with cystic change in the lunate, positive ulnar variance and peripheral TFCC tear

Kienbock Impaction
Coronal STIR T2-weighted MR image. High signal intensity within the ulnar aspect of the proximal lunate and radial aspect of proximal triquetrum

DRUJ Instability
Axial STIR T2-weighted MR image. Dorsal subluxation of the distal ulnar relative to the radius, suggesting distal radio-ulnar joint (DRUJ) instability.

Lunotriquetral Coalition
Coronal T2-weighted MR image. Moderate to severe arthropathy within the lunotriquetral joint and pisiform bone marrow oedema.

Tendon
- Extensor carpi ulnaris (ECU) tendinopathy, tenosynovitis and subluxation
- Flexor carpi ulnaris pathology

ECU tear and tenosynovitis
Longitudinal split tear of the ECU with tenosynovitis, fluid within the tendon sheath and ulnar subluxation of the tendon suggesting a subacute tear.

ECU subluxation
Axial T2-weighted STIR MR images. The ECU is subluxed over the volar tip of the groove. A small effusion is present within the tendon sheath.

Pictorial Review of the Imaging Features in Ulnar-Sided Wrist Pain

Conclusion
There is a wide differential for the causes of ulnar-sided wrist pain for which plain radiography and ultrasound are sometimes inappropriate for obtaining the correct diagnosis; MRI and MRI arthrograms are an often underutilised, but key choice of imaging modality for accurately identifying the cause of ulnar sided wrist pain.

References