Royal Australasian College of Surgeons

Locked distal radioulnar joint due to incarcerated triangular fibrocartilage complex tear

A 31-year-old female department store worker sustained an injury whilst lifting a heavy load at work. She felt a 'pop' in her wrist, with associated pain and an inability to rotate her forearm. Initial radiographs were unremarkable, and she was managed non-operatively by her local doctor and occupational therapist.

However, her symptoms had not improved 4 months post her injury, and so she was investigated further via magnetic resonance imaging [MRI] and referred for a specialist opinion. At that time, clinical examination revealed marked tenderness over the ulnar soft spot, as well as a wrist 'locked' in the neutral position with no active or passive axial plane range of motion. The MRI demonstrated a tear of the central articular disc of the triangular fibrocartilage complex (TFCC), with interposition of the torn disc into the distal radioulnar joint (DRUJ) and mild dorsal subluxation of the ulnar head (Fig. 1).

The patient underwent a wrist arthroscopy, with access via 3/4, 6R and distal DRUJ portals. A horizontal flap tear was noted, with herniation of the central flap through the tear and intact peripheral disc into the DRUJ (Fig. 2a). The flap was retrieved via a probe into the radiocarpal joint and then debrided to stable margins (Fig. 2b,c).

The patient subsequently recovered a full and painless active range of motion and returned to her previous employment. A repeat MRI performed 6 months later demonstrated a more concentric position of the DRUJ with no oedema noted in the TFCC (Fig. 1).

The TFCC is integral to maintaining the stability and function of the DRUJ. TFCC tears can be degenerative or the result of acute or chronic trauma, resulting in a spectrum of clinical presentations.[1,2] Although pain and instability following TFCC injury is encountered commonly, restricted range of motion is less frequently seen, with very few reports of isolated TFCC tear without dislocation causing a locked DRUJ.[3] Takahashi described interposition of a flap of the volar radioulnar ligament that had torn from the TFCC resulting in restricted supination, whilst Kawabata noted volar subluxation of an entire TFCC that had detached from the dorsal capsule causing limited motion.[4,5] Other causes of a locked DRUJ without dislocation include interposed loose bodies, joint capsule or tendons, and these differentials must be excluded..[4]

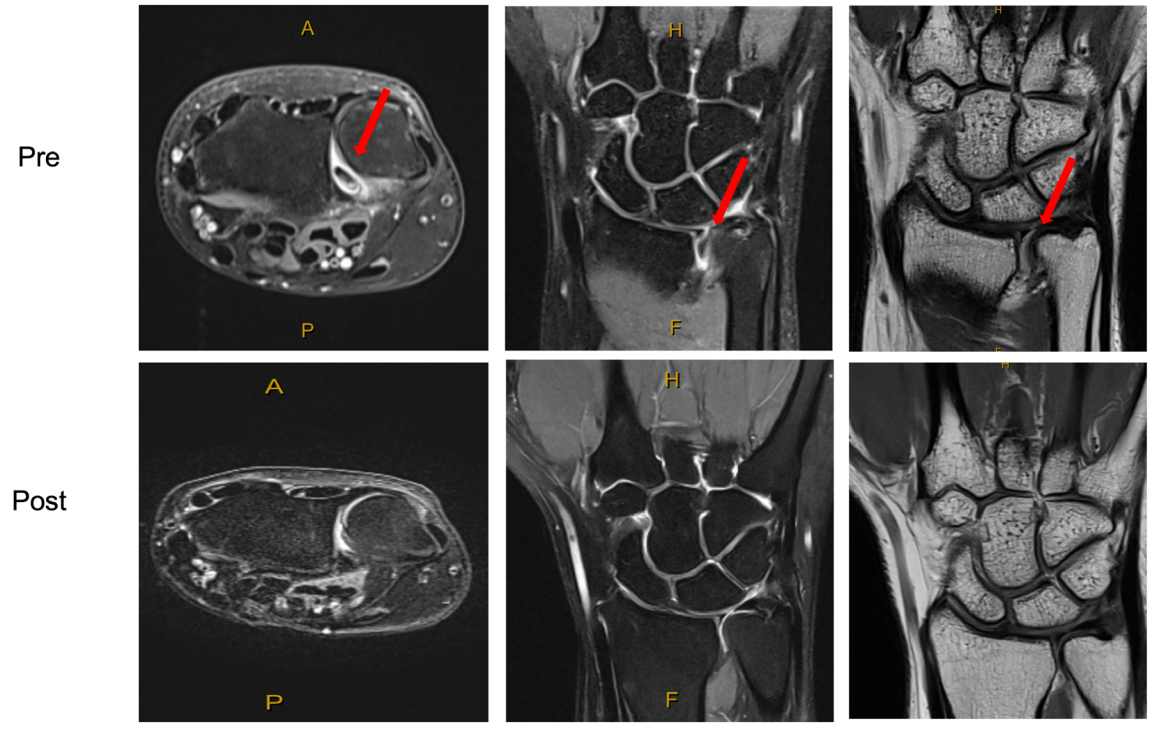

Fig. 1. Preoperative (Top row) and postoperative (bottom row) MRI demonstrating central TFCC tear with incarceration in the DRUJ. Solid red arrow indicating interposed tear.

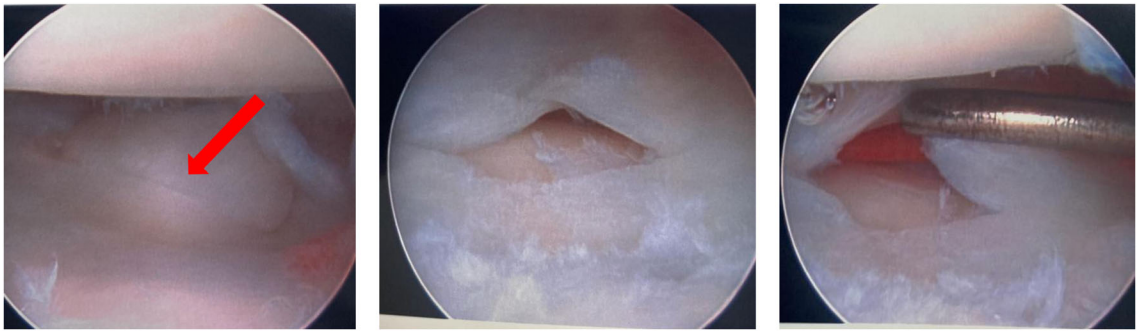

Fig. 2. Arthroscopic images demonstrating incarcerated central TFCC tear [left panel with red arrow] and TFCC debrided to stable margins (middle and right panels).

The current case showcases the novel finding of a massive and non-repairable horizontal flap tear herniating into the DRUJ. It highlights the importance of appropriate examination and investigation, and the functional recovery that can be obtained through a minimally invasive approach.

References

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Jeremy Wiseman,* MBBS
Haren Nandapalan,†‡ MBBS, FRACS, FAOrthA
David Graham,§¶‖**†† MBBS, BPhty(hons), FRACS(Orth), FAOrthA
Richard Lawson,*‡‡ MBBS, FRACS, FAOrthA
Brahman Sivakumar,*‡‡ MBBS, BSci [Med, MS, MSc, FRACS (Orth), FAOrthA

**Department of Hand and Peripheral Nerve Surgery, Royal North Shore Hospital, Sydney, New South Wales, Australia, †Department of Orthopaedic Surgery, Hornsby Ku-ring-gai Hospital, Sydney, New South Wales, Australia, ‡Department of Orthopaedic Surgery, Nepean Hospital, Sydney, New South Wales, Australia, §Australian Research Collaboration on Hands [ARCH], Gold Coast, Queensland, Australia, ¶Department of Musculoskeletal Services, Gold Coast University Hospital, Gold Coast, Queensland, Australia, ‖School of Medicine and Dentistry, Griffith University, Southport, Queensland, Australia, **Department of Orthopaedic Surgery, Queensland Children's Hospital, Brisbane, Queensland, Australia, ††School of Medicine, University of Queensland, Brisbane, Queensland, Australia and ‡‡Sydney Medical School, Faculty of Medicine and Health, The University of Sydney, Sydney, New South Wales, Australia*

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