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Medical Imagery

Parona space collection: A serious complication of hand infections

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A 61-year-old man presented with erythematous and painful swelling of his left hand, wrist, and distal forearm for five days. He denied any penetrating injury and had no known inflammatory arthropathy or thrombophilia. There was no fluctuance or neurovascular compromise. Investigations revealed elevated leucocyte counts ($14.11 \times 10^9/L$) and C-reactive protein (228 mg/L).

Radiographs demonstrated soft tissue swelling at the aforementioned areas (Figures 1A–B). Magnetic resonance imaging (Figures 2A–D) showed fluid and synovitis along the flexor tendon sheaths, predominantly involving the thumb and little finger, compatible with infective tenosynovitis. This was complicated by a rim-enhancing collection between the pronator quadratus and

the flexor tendon sheath at the space of Parona (SOP). Tenosynovectomy and surgical drainage were performed. Cultures yielded *Streptococcus agalactiae* and the patient recovered uneventfully after six weeks of antibiotic therapy.

The SOP is a potential space along the volar distal forearm between the pronator quadratus fascia and flexor digitorum profundus tendon sheath (Patel et al., 2014). SOP collections are rare but potentially limb-threatening complications of pyogenic flexor tenosynovitis, particularly when the thumb and little finger are involved (Sharma et al., 2013). Forearm compartment syndrome may ensue (Jamil et al., 2011), and urgent surgical drainage and antibiotic therapy are critical (Rigopoulos et al., 2012).

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Figure 1. Frontal (A) and lateral (B) radiographs of the left wrist. There is diffuse soft tissue swelling, most marked at the volar aspect (arrow in B). No soft tissue gas or bony abnormality is identified. Deformity of the distal radius is due to a remote healed fracture.

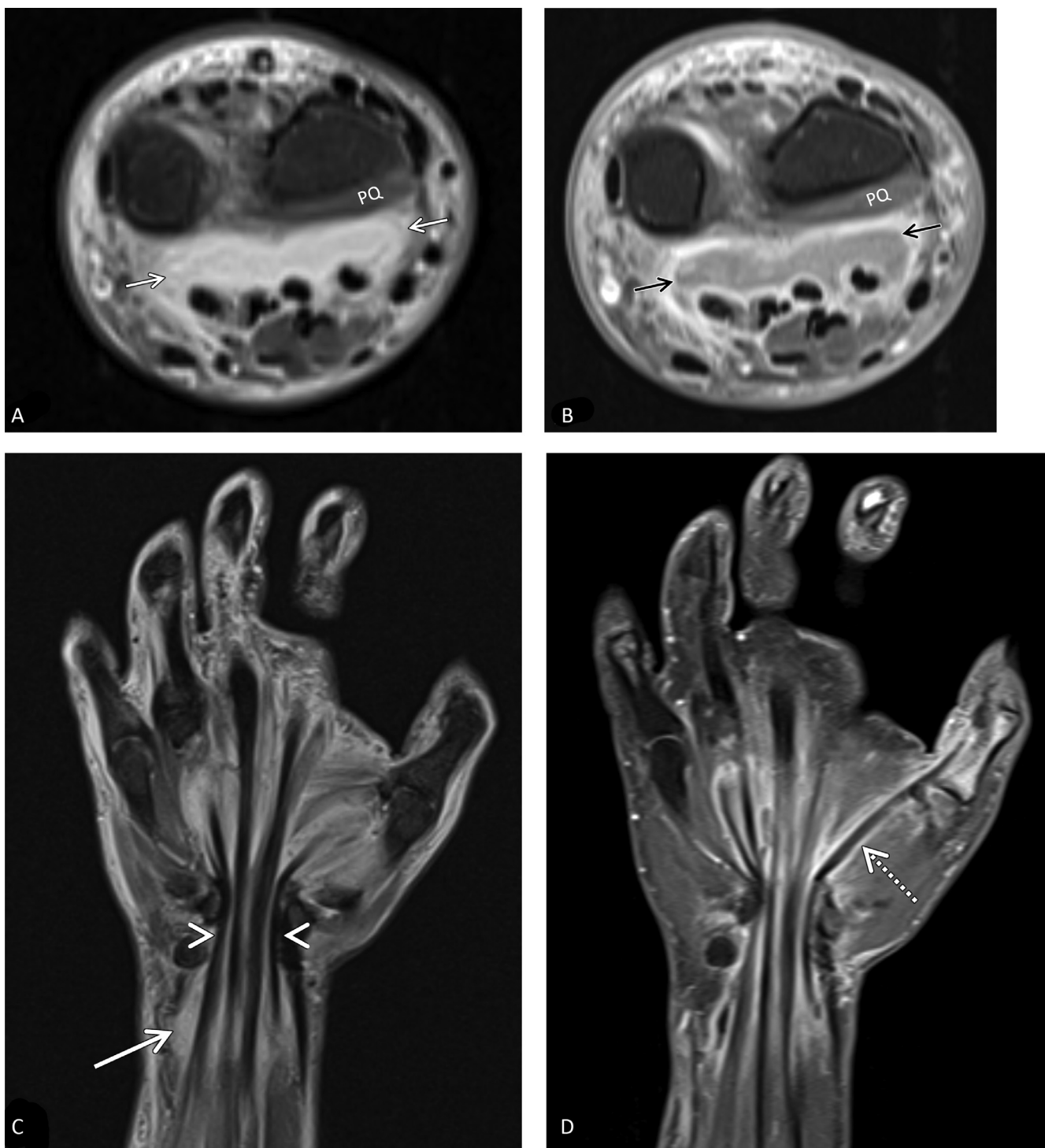


Figure 2. MRI of the left wrist. Axial (A) and coronal (C), fat-suppressed, T2-weighted sequences and axial (B) and coronal (D), post-contrast, fat-suppressed, and T1-weighted sequences are shown. A T2-weighted hyperintense collection with rim enhancement (between the arrows in A and B) is demonstrated at the volar aspect of the distal forearm between the deep flexor tendons and the pronator quadratus (PQ) muscle (space of Parona). The coronal images (C and D) show fluid and synovitis along the flexor tendon sheath of the thumb (dashed arrow in D) with extension through the carpal tunnel (between the arrowheads in C) and a resultant Parona space collection (arrow in C).

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Ethical approval

Approval was not required (images are anonymized).

Author contributions

Drs. Kuah, Al Moslem, Banjar: acquisition and interpretation of data, **Drs. Kuah, Al Moslem:** preparation of the manuscript, **Dr. Hallinan:** conceived the study concept, supervised data acquisition and interpretation, **Drs. Kuah, Al Moslem, Banjar, and Hallinan:** completion of the manuscript.

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Conflicts of interest

The authors have no competing interests to declare.

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