

Perilunate dislocation: Short report

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Case Presentation

A 37 year old factory maintenance worker reports to the ED with left wrist pain, swelling, and deformity. Prior to presentation, the patient was at work changing an industrial light fixture on a 15 foot scaffolding. While his left hand was stationary and stabilizing his balance by gripping the fixture tightly, a heavy stabilizer bar loosened and swung forward striking the dorsal aspect of the left proximal wrist. The patient noticed immediate pain, deformity, and swelling at the area of impact.

Initial ED evaluation was notable for symmetric pulses. His radial, median, and ulnar nerves were intact to light touch and motor function. Skin exam was intact. A diffuse dorsal deformity was noted. Imaging was obtained.

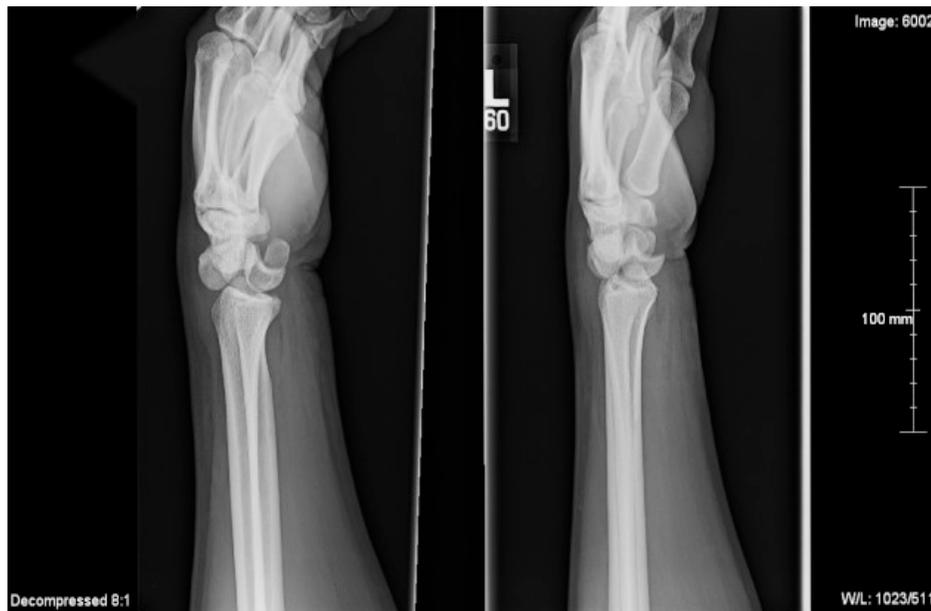


Figure 1: A lateral view of the right hand indicating a perilunate dislocation with a historically described “spilled teacup” appearance.

Upon discussion of reduction options, the patient requested a trial of reduction without sedation. 100 mcg of Fentanyl was provided for analgesia. The Patients 2nd through 5th digits were placed in finger traps. An assistant then applied firm longitudinal traction of the proximal wrist in the direction of the floor. The dislocated proximal metacarpals were then identified, pushed firmly in the opposite direction while simultaneously applying pressure in the volar direction. Translation of the dislocated structures was readily palpable. The dislocation reduced, resulting in immediate improvement of his discomfort to near resolution. The limb remained neurovascularly intact, was splinted, and the patient was discharged after consulting the surgical hand service with imaging studies confirming a successful reduction.



Figure 2: This follow up radiograph indicates a successfully reduced and splinted perilunate dislocation.

Discussion

The Perilunate dislocation represents a high energy injury most commonly resulting from a fall from height or high energy blunt trauma. The injury pattern occurs through hyperextension and, frequently, ulnar deviated hand. This case represents a unique mechanism of similar high energy, but from the opposite direction. The patients phalanges and metacarpals were fixed on a stationary object while blunt force was presumably applied at a dorsal and axial impact site.

The resulting pattern of injury culminates in a complex ligament disruption of the proximal and distal wrist. Perilunate dislocations are associated with scaphoid fractures 60% of the time.

The mechanism of perilunate dislocations has been described as a 4-stage process, as follows:

Stage 1 - The RSC ligament and the scapholunate interosseous ligament rupture.

Stage 2- Dislocation of the capitulate joint.

Stage 3 - Rupture of the lunotriquetral interosseous ligament

Stage 4 – Dislocation of the Lunate

As with all dislocations, prompt reduction and immobilization is of paramount importance. Due to the inherent instability of this injury, operative fixation is generally agreed upon. Definitive treatment remains controversial and varies between ORIF and Percutaneous pinning/wiring.

References

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