

DIAMOND KIRSCHNER-WIRE FIXATION ARE A SURGEONS BEST FRIEND: APPROACH TO SCAPHOLUNATE DISSOCIATION

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Introduction: Scapholunate (SL) dissociations are a type of perilunate dislocation, which generally occur in young patients after high-energy trauma. The Kirschner wire (K-wire) introduced almost a century ago, is conveniently used worldwide by orthopaedic surgeons for stable fixation, including hand injuries.

Discussion: A 34 years old male, sustained an open scapholunate dissociation of his dominant limb, was treated with an open reduction and fixation utilizing a diamond shaped K-wire and ligament repair. An isolated volar approach using a standard carpal tunnel release incision that extends proximal to the volar wrist crease for improved exposure of ligaments, carpal bones and wrist joint. Following soft tissue clearance, a freer elevator was placed between the capitate and lunate to facilitate reduction which was confirmed with mini C-arm guidance. One K-wire was placed in the lunate and another in the scaphoid dorsally as a joystick to manipulate the bones into a normal carpal alignment. Four K-wires were drilled through the radial snuff box and ulnar snuff box in a diamond-shaped pattern: the SL, luno-triquetral, scapho-capitate, and triquetro-hamate joints were transfixated with 1.6 mm K-wires in a diamond-shaped configuration, with its cut ends buried underneath skin. The injured ligaments were repaired, carpal tunnel decompressed and wrist held in functional position with a hybrid external fixator. Diamond-shaped pinning maintained the reduction between the scaphoid and the lunate, lunate and triquetrum and kept the proximal row against the distal row in a normal anatomical alignment. Because every bone is fixed with two K-wires using this configuration, a closed ring is created; hence no motion is possible between the scaphoid, capitate, hamate, triquetrum and lunate.

Conclusion: Conceptualization of the diamond-shaped K-wire fixation yields a stable, dynamic construct using basic surgical equipments and techniques, thus resolving the dilemma faced by orthopaedic surgeons in tackling these rare injuries.