Arthroscopic Assisted Reduction and Percutaneous Fixation of Acute Perilunate Injuries

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Managing acute perilunate injuries (APLI) presents significant challenges due to the complex anatomy and technical intricacies involved. Despite open reduction and fixation being the gold standard treatment, outcomes remain guarded. Wide surgical exposures with extensive soft tissue capsuloligamentous releases may contribute to poorer outcomes. This surgical technique introduces a novel approach employing arthroscopic-assisted reduction and fixation, suitable for both acute perilunate dislocation and fracture dislocation injuries using minimally invasive methods.

This video demonstrates application of the technique in a 44 year old male presenting with a ligamentous APLI after a collision while playing hockey. The procedure involves addressing fractures, followed by diagnostic arthroscopy and adhesiolysis. Subsequently, scapholunate and lunotriquetral reduction and stabilization with Kirschner-wires (K-wires) are performed through the 3-4, 6-R, midcarpal radial (MCR), and midcarpal ulnar (MCU) portals. Postoperatively, patients are immobilized in a below-elbow volar resting splint for 6 weeks, transitioning to a removable splint thereafter. K-wires are typically removed approximately 8 weeks postoperatively to facilitate progressive wrist range of motion and a gradual return to weightbearing activities.

As the technique has been developed recently, it has not yet been widely adopted, and the scarcity of these injuries have led to a paucity of literature in this area. There has however been some indication that arthroscopic management does have a tendency towards lower post-operative complication rates.

Arthroscopic-assisted fixation of APLI is emerging as a safe, reproducible, and reliable alternative, offering promising functional outcomes by addressing both anatomical realignment and soft tissue preservation.