Modified Reduction and Association of Scaphoid and Lunate with Internal Brace Augmentation as a Secondary Stabilizer

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Proposal: The authors describe a technique for the modified Reduction and Association of Scaphoid and Lunate (RASL) procedure with internal brace augmentation as an effective secondary stabilizer for scapholunate dissociation.

Case Overview: The patient is a middle-aged male who initially presented with wrist pain for several months after playing pickleball. Physical exam and imaging confirmed the diagnosis of scapholunate dissociation. A reduction and association of scaphoid and lunate procedure was performed with internal brace augmentation.

Method/Technique: A standard dorsal approach to the wrist was used with a longitudinal incision, slightly ulnar to the Lister's tubercle. The radial sensory nerve, which can travel more centrally, was identified and carefully protected. The 3rd extensor compartment was partially released, and the interval between the 2nd and 4th extensor compartments was utilized. The joint was exposed with an ulnar-based capsulotomy which provided direct access to the scapholunate interval. A complete tear of the dorsal ligament was confirmed. Utilizing two 1.6 mm K-wires as a joystick, scaphoid and lunate were reduced under direct visualization and held in place by Kocher clamp. A second incision is made distal the radial styloid along the center of the anatomic snuffbox to expose the lateral wall of the scaphoid. The radial sensory nerves and radial artery are identified and protected. The transition point from the cartilage to bone is the approximate location of screw insertion, which generally coincides with the midpoint length of the scaphoid. The guidewire is placed from the midpoint waist of the scaphoid, skiving the subchondral surface of the scaphoid and lunate (triangle) and directed toward the proximal ulnar corner of the lunate (arrow). We generally prefer 3.0 or 3.5 mm headed, stainless steel, cannulated screw for solid bone fixation and less apparent long-term "windshield-wiper" effects compared to headless compression screws. The secondary stabilizer is reconstructed using an internal brace from the distal scaphoid to the body of the capitate using bone anchors. The SwiveLock (3.5mm) is placed distal to the RASL screw, double loaded with an internal brace, and tightened to the capitate with a second Swivelock under tension. The capsule is primarily closed, and the EPL is generally not transposed with the repair of the extensor retinaculum. The patient was splinted for 2 weeks and transitioned to the removable splint. The range of motion therapy starts at 4 weeks, with progression to strengthening at 6-8 weeks.

Results: A retrospective review of 12 patients demonstrated satisfactory outcomes with 85% regain of motion at 6 months and resumption of pre-injury activities in all patients. One patient demonstrated recurrent widening without windshield-wiper effect or screw back-out. When compared to RASL without augmentation, the success rate was higher with the reconstruction of the secondary stabilizer.

Summary: The modified RASL with internal brace augmentation is an effective option for the management of scapholunate dissociation. This technique has favorable short-term clinical outcomes while maintaining the reduction of scaphoid and lunate more reliably than RASL alone.