

Midterm Follow-up of Internal Brace Augmentation Technique for Scapholunate Ligament Repair

Meagan Wu, Kyle Plusch¹, Asif M Ilyas, Christopher McCarthy Jones

¹Rothman Orthopaedic Institute

INTRODUCTION:

Injury to the scapholunate (SL) interosseous ligament (SLIL) is a common cause of carpal instability. Various reconstructive procedures for SL instability have been described, yet no consensus exists regarding the optimal method for SLIL repair. The internal brace augmentation technique has been utilized with ligament repairs in a variety of orthopedic procedures, including recent application for SLIL injuries, but studies of its clinical outcomes in hand surgery are lacking. The aim of this study is to describe the midterm outcomes for patients who underwent SLIL repair with internal brace augmentation.

METHODS:

Patients that underwent SLIL repair with internal brace augmentation by one of three fellowship trained hand and upper extremity surgeons at a single institution were identified via database search. All patients who underwent surgery greater than one year prior to May 2022 were contacted to assess midterm outcomes. Participating patients completed the Quick-DASH (qDASH) and Patient-Rated Wrist Evaluation (PRWE) surveys, and rated their satisfaction with the surgery on a scale of 1 to 5. Additionally, patients were asked to return to the office for new radiographs and physical examination. Outcomes assessed included wrist range of motion, grip strength, Watson scaphoid shift test, and radiographic measurements including SL angle, SL interval, and evidence of radiocarpal arthritis. If patients could not be contacted but had received wrist radiographs and a physical examination greater than one year post-operatively, these were collected in the same fashion.

RESULTS:

Midterm outcome data was available for 14 SLIL repairs among 13 patients (12 male). Injuries were considered acute in 8 cases and chronic in 6 cases. The average length of radiographic follow-up for patients with x-ray data available was 39 months (n=10, range 17-64), and the average length of follow-up for patients completing outcome surveys and the satisfaction scale was 43 months (n=10, range 22-63). Average calculated qDASH and PRWE scores at latest follow-up were 6.6 and 11.7, respectively, indicating minimal to no pain or disability. Average patient satisfaction with their surgery was 4.4 out of 5. Only one patient did not feel that they returned to full functional status following surgery, although many noted minor loss of active motion in their injured wrist. Both SL angle and SL interval measurements remained decreased at midterm follow-up compared to pre-operative values (SL angle = 67 degrees post-operatively vs. 80 degrees pre-operatively, SL interval = 3.3 mm post-operatively vs. 4.2 mm pre-operatively). There was no radiocarpal joint space narrowing or other radiographic signs of degeneration. Average flexion and extension at midterm follow-up was 57 degrees and 63 degrees, respectively, and all Watson tests were stable.

DISCUSSION AND CONCLUSION:

Internal brace augmentation for SL repair is an effective technique that may provide long-term stability, as evidenced by our radiographic and physical examination findings. Patients are generally satisfied with the results of the procedure and are able to return to their prior functional status, although minor loss of motion in the injured wrist should be anticipated.