Arthroscopic-assisted Scapholunate Interosseus Ligament Repair: A Systematic Review

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INTRODUCTION: Traditionally, repair or reconstruction of scapholunate interosseous ligament (SLIL) injuries has been performed via open approaches, however, recent arthroscopic techniques have improved the ability to assess and address the SLIL while preserving local blood supply and ligamentous stabilizers. We hypothesize that patients that undergo arthroscopic SLIL repair have improved patient-reported outcome measures (PROMs), and improved range of motion compared to open SLIL repair.

METHODS: A systematic review of primary research articles on open versus arthroscopic repair of SLIL injuries was performed using Pubmed. A total of 226 publications were reviewed; 118 publications underwent abstract review. After applying inclusion and exclusion criteria, 15 primary articles were selected for inclusion. Data extracted from the final studies included surgical interventions and indications, time from injury to surgery, length of follow-up, range of motion (ROM), reoperations, PROMs, and radiographic results.

RESULTS: 982 wrists that underwent SLIL repairs (827 arthroscopic, 155 open) were included. The frequency-weighted mean follow-up was 40.72 months (range 8-180 months), with a mean age of 34.44 years (range 14–68). Post-operative visual analog scores (VAS) and Disabilities of the Arm, Shoulder, and Hand (DASH) scores were lower in arthroscopic repairs (VAS 1.13± 0.11 arthroscopic vs 4.69± 2.07 open, DASH 9.93± 2.04 arthroscopic vs. 21.93± 5.44 open). Mayo scores were higher in the arthroscopic group (Mayo 87.82± 2.16 arthroscopic vs 78.83± 6.98 open). Range of motion was also increased in the arthroscopic group: flexion (67.04± 2.13° arthroscopic vs 51.73± 6.88° open), extension (72.56± 1.29° arthroscopic vs 51.97°± 9.87 open), and strength (41.94± 3.85 kg arthroscopic vs 34.59± 5.47 kg open). Mean time from injury to surgery was higher in the open group (168.49± 83.19 days arthroscopic vs 222.63± 159.29 days open). Post-operative scapholunate (SL) angle was lower for with arthroscopic repair at 54.08± 2.53° versus open repair at 59.10± 7.01°.

DISCUSSION AND CONCLUSION: Patients who underwent arthroscopic repair of SLIL injuries demonstrated improved range of motion, pain, and patient reported outcome measures than patients who underwent open repair of SLIL injuries, although patients who underwent arthroscopic repair typically had more acute injuries.