

Outcomes Following Scapholunate Ligament Reconstruction Using a Two-Tine Staple

Purpose

Previous studies have demonstrated benefits of two and four-tine staple fixation in scapholunate interosseous ligament (SLIL) reconstruction, including improved rotational control and more physiologic motion of scaphoid and lunate compared to Kirschner wire (K-wire) fixation. The purpose of this study was to evaluate clinical outcomes of patients treated with a two-tine staple during SLIL reconstruction.

Methods

Charts were reviewed from 2017 to 2022 to identify patients undergoing SLIL reconstruction. Patients were included if they were treated with a two-tine staple as part of the construct during SLIL reconstruction. Radiographs were evaluated preoperatively, immediately postoperatively, and throughout follow up to determine degree and maintenance of correction of SL interval. Patients were also followed to identify complications and need for further procedures.

Results

11 patients were identified that underwent SLIL reconstruction with two-tine staple fixation. The average gap of the SL interval preoperatively was 4.38mm. Following fixation, the SL interval decreased to an average of 1.47mm (CI 1.17 - 1.76). Seven patients had failure of the staple hardware, and all patients required eventual hardware removal of the staple postoperatively. Three patients had failure of fixation with recurrent widening across the SL interval. One of these patients underwent a revision SLIL reconstruction with flexor carpi radialis (FCR) autograft and one patient had a proximal row carpectomy (PRC).

Conclusions

This study demonstrates a two-tine staple can be utilized in SLIL reconstruction to supplement fixation and apply initial compression across the SL interval. Failure of the staple occurs as wrist motion is

initiated due to physiologic motion of the scaphoid, but this does not necessarily predict widening of the SL interval.