Is Ulnar-Sided Intercarpal Fixation Necessary in Treatment of Perilunate Injuries?

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Purpose: Complete perilunate injuries are traditionally treated with reduction and radial and ulnar-sided fixation to maintain proximal row and midcarpal alignment. However, fixation of the lunotriquetral joint may be difficult and cause malalignment. We hypothesized that there would be no difference in patients with and without ulnar-sided fixation. The purpose of this study was to compare the radiographic and clinical outcomes of patients with perilunate injuries treated with radial and ulnar-sided fixation with those who had only radial-sided fixation.

Methods: 79 consecutive patients treated for perilunate injury were reviewed and contacted to obtain radiographs and QuickDASH (an abbreviated version of the Disabilities of the Arm, Shoulder and Hand [DASH] questionnaire) scores. Radiographs were reviewed for injury type and surgical fixation method. Final radiographs were evaluated for lunotriquetral gap, scapholunate angle, capitolunate angle, and presence of radiocarpal or midcarpal arthritis. Arthritis grading was performed by a board-certified hand surgeon blinded to the ulnar fixation.

Results: 32 (29 M:3 F) patients aged 35 years (range, 17-60) returned their QuickDASH scores at an average of 69 months, 17 with and 15 without ulnar-sided fixation. There were no differences in the demographics of the 2 groups. We found no difference in QuickDASH scores for those with (16.7) versus those without (17.9) ulnar fixation (P = 0.86). We also found no difference in lunotriquetral gap (1.3 mm vs 1.6 mm; P = 0.25), scapholunate angle (58° vs 61°; P = 0.94), or capitolunate angle (11.5° vs 7.8°; P = 0.65) on follow-up radiographs after union. 11 of 24 patients (46%) had radiographic evidence of midcarpal or radiocarpal arthritis at final follow-up; 9 of 13 (69%) of those with ulnar fixation and 2 of 11 (18%) without, (P = 0.01). No patient developed a VISI (volar intercalated segment instability) deformity. Interestingly, the presence of radiographic arthritis did not correlate with a significant increase in QuickDASH score (22.7 vs 15.9, P = 0.38).

Conclusion: This represents the largest reported series of patients with perilunate injuries treated without ulnar-sided fixation. No difference in functional or radiographic outcome was shown between patients treated with or without ulnar-sided fixation although those with ulnar-sided fixation were more likely to have radiographic arthritis. These results suggest that isolated radial-sided fixation may result in acceptable functional outcomes for patients with perilunate injuries.