

Long-Term Outcome of Isolated Stable Radial Head Fractures

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Purpose: There is evidence to support the primary nonoperative management of isolated stable fractures of the radial head (Mason type 1 and type 2 fractures). However, the long-term outcome of these fractures remains unclear. The aim of this study was to report the long-term outcome of stable isolated fractures of the radial head following primary nonoperative management.

Methods: We identified from a prospective proximal radial fracture database all patients who sustained a stable isolated Mason type 1 or type 2 fracture of the radial head or neck over an 18-month period. Inclusion criteria included all confirmed isolated stable fractures of the proximal radius that were primarily managed nonoperatively. Demographic data, fracture classification, management, complications, and subsequent surgeries were recorded. The primary long-term outcome measure was the Disabilities of the Arm, Shoulder and Hand (DASH) score.

Results: There were 100 patients in the study cohort with a mean age of 46 years (range, 17-79). A fall from standing height accounted for 69% of all injuries, with one or more comorbidities documented in 35 (35%) patients. There were 57 (57%) patients with a Mason type 1 fracture and 43 (43%) with a Mason type 2. At a mean of 10 years (range, 8.8-10.2) post injury, the mean DASH score was 5.8 (range, 0-67.2) and the mean Oxford Elbow Score was 46 (range, 14-48). Patient satisfaction was 92% with a median satisfaction score of 10 (range, 3-10). 14 (14%) patients reported stiffness and 24 (24%) some degree of pain. Two (2%) patients underwent subsequent surgery for persistent symptoms associated with the original fracture. The median time to return to work was 2 weeks (range, 0-36; n = 73), with a median time to return to sports of 6 weeks (range, 1-24; n = 72). An increased (worse) DASH score was found in older patients ($P = 0.002$), patients with one or more comorbidities ($P = 0.008$), increasing deprivation ($P = 0.026$), increasing fracture displacement ($P = 0.041$), and those patients who pursued compensation in relation to their injury ($P = 0.006$). Further analysis of deprivation adjusting for age, gender, and fracture classification demonstrated that patients in the most deprived quintile had a mean DASH score 13.3 points higher than the least deprived. There was a trend toward a significantly worse DASH for fractures displaced 4 mm or more (5.2 vs. 13.7, $P = 0.07$).

Conclusion: To our knowledge, this is the largest series in the literature documenting the long-term outcome of patients treated with primary nonoperative intervention for an isolated stable fracture of the radial head. Our data would suggest that the conservative management of these injuries is a reliable treatment option, yielding an excellent or good long-term result in the majority of cases. Despite a small number of patients reporting persistent pain and stiffness, patient satisfaction is high, the need for secondary intervention is negligible, and patients routinely return early to work and sports.