Long-Term Outcome of Surgery for Isolated Displaced Fractures of the Olecranon

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Purpose: There are limited data documenting the short and long-term outcome following the operative management of isolated displaced olecranon fractures. Many series include a heterogeneous group of patients and report high metalwork removal rates from centers where metalwork removal is routine. This study documents both the short and long-term outcome following primary operative management of isolated displaced olecranon fractures.

Methods: We retrospectively identified from a single-center trauma database patients who were managed operatively for an isolated displaced fracture of the olecranon over a 4.5-year period. Inclusion criteria included all isolated fractures with >2 mm of articular surface displacement managed with either tension-band wire (TBW) or plate fixation. Comminuted fractures were included. Demographic data, fracture classification, management, complications, and subsequent surgeries were collected. The primary short-term outcome measure was complications. The primary long-term outcome measure was the Disabilities of the Arm, Shoulder and Hand (DASH) score. Secondary outcome measures included the Oxford Elbow Score (OES), pain score, return to function, and satisfaction.

Results: There were 104 patients with a mean age of 62 years (range, 16-97) and 61 (59%) were female. There were 89 fractures (86%) classified as Mayo type IIa (AO/OTA: 2U1 B1). There were 88 patients (85%) managed with TBW fixation. At a mean of 5 months (range, 1-55; IQR [interquartile range] 1-7) following injury the overall complication rate was 45%, with a 33% (n = 34) removal of metalwork (ROM) rate. Of these cases, 6 patients required ROM as part of treatment for wound infection. The mean Broberg and Morrey score was 83 (range, 46-100; n = 63). 41 patients (39%) were deceased at the point of long-term outcome collection. Follow- up was available in 51 patients (81% of available cohort) at a mean of 9.2 years (range, 6.4-10.8) postinjury. The mean DASH score was 3.5 (range, 0-44), the mean OES 46 (32-48), and the median pain score 0 (0-6; IQR 0-1). Median return to sport was 12 weeks (2-78; IQR 8-12) and return to work 4.5 weeks (0-26; IQR 1-4.5). The mean satisfaction score was 9.4/10 (5-10; IQR 9-10). There was no difference in the DASH score between those patients who underwent ROM and those who did not (mean 4.9 vs 2.4; P = 0.71).

Conclusion: This is one of the largest series in the literature reporting satisfactory short and long-term outcomes following the operative management of isolated displaced olecranon fractures. Given the high ROM rate, further work is needed to define the role of alternative fixation techniques that may be associated with lower reintervention rates and cost. Given the high mortality rate in these patients, the role of nonoperative management in low-demand elderly patients should be considered.

See the meeting app for complete listing of authors' disclosure information.