

Nonoperative Versus Operative Management of Distal Radius Fractures in the Elderly: A Retrospective Comparative Study

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Purpose: There is an increasing body of evidence questioning the role of surgical intervention in the management of elderly patients with a distal radius fracture. However, most of these data are limited to short-term outcomes within the first year of injury. The primary aim of this study was to compare the long-term outcomes of elderly patients who were managed with surgery versus those managed nonoperatively for a distal radius fracture.

Methods: A retrospective comparative study was performed in patients aged ≥ 65 years who had sustained a distal radius fracture that was managed at the study center over a 1-year period (2016). Long-term follow-up was via questionnaire survey. The primary outcome measure was the Patient-Rated Wrist Evaluation (PRWE). Secondary outcomes included the abbreviated Disabilities of the Arm, Shoulder and Hand score (QuickDASH), the EuroQol-5 Dimensions-3 Levels (EQ-5D-3L), the normal wrist score, and further surgery.

Results: There were 207 fractures with long-term outcome data that made up the study cohort. The mean age was 73 years (range, 65-90) and 90.8% (188) were female. There were 53 (25.6%) managed operatively (open reduction and internal fixation, $n = 49$, 92%) and 154 (74.4%) managed nonoperatively. OTA type A fractures were most common ($n = 131$, 63.3%), with 76 type C injuries (36.7%). Between groups at baseline no significant differences in age (mean 73 years for both, $P = 0.553$), sex ($P = 0.304$) or OTA classification ($P = 0.242$) were seen. Patients with a dominant hand injury were more likely to have been managed with surgery ($P = 0.04$). At a mean follow-up of 4.8 years (range, 4.3-5.5) there was no difference in the median PRWE score between the operative (3.5, interquartile range [IQR] 12.1) and nonoperative groups (0, IQR 36.3; $P = 0.468$). There was also no difference in the median QuickDASH (15.9 vs 11.4; $P = 0.660$), the median EQ-5D-3L (1.0 vs 0.85; $P = 0.604$), or in the median normal wrist score (94.5 vs 91; $P = 0.614$) between the operative and nonoperative groups. Operatively managed patients were more likely to require further surgery ($n = 5$, 9.6%) compared to nonoperatively managed patients ($n = 2$, 1.3%) ($P = 0.005$). On multivariate linear regression analysis controlling for age, gender, hand dominance, and OTA classification, the treatment modality was not associated with the PRWE.

Conclusion: Both operative and nonoperative management of distal radius fractures demonstrate similar long-term functional outcomes and health-related quality of life in this series of older patients age 65 years and over. This study provides long-term data comparing treatment strategies for these injuries.