Unstable Distal Radius Fracture: Reduce Prior to Surgery?

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Background/Purpose: Most distal radius fractures are not considered for surgery until manipulative reduction is attempted. There is a subset of fractures, however, that can be considered for immediate surgery. We wonder if the discomfort and inconvenience of a closed reduction is worthwhile for the subset of patients who choose operative treatment prior to attempted reduction. We hypothesize that there are no differences in (1) adverse events and (2) subsequent surgeries between patients treated with manipulative reduction compared to those who were splinted without reduction prior to distal radius fracture surgery.

Methods: We retrospectively included 1565 patients who underwent plating of their distal radius fracture between January 1, 2007 and December 31, 2012 of which 108 (6.9%) were not reduced prior to surgery. We recorded any infections, hematomas, disproportionate finger stiffness, (transient) neuropathology after surgery and resultant delayed carpal tunnel release, malunion, loss of alignment, plate removal, and tendon ruptures within 1 year after surgery. Outcome measures were grouped to determine the overall adverse event rate and subsequent surgery rate.

Results: We recorded 291 adverse events in 265 patients (17%) and 114 subsequent surgeries in 96 patients (6%). We found no difference in specific adverse events between unreduced and reduced fractures. After adjusting for possible confounding variables by logistic regression, we found no difference in overall rates of adverse events (odds ratio 1.4, 95% confidence interval 0.84-2.2) and subsequent surgeries (odds ratio 0.58, 95% confidence interval 0.21-1.6) between the groups.

Conclusion: Conscious of the retrospective nature of this study, doctors could consider not putting the patient through the time and pain of closed reduction when surgery is planned within a few days.

See pages 99 - 147 for financial disclosure information.