Effect of Delayed Fixation of Distal Radius Fractures on Operative Time and Radiographic Outcome

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INTRODUCTION: Fractures of the distal radius are among the most common fractures treated by orthopaedic surgeons. Although ideally treated within one to two weeks, delayed operative fixation is a reality at our institution due to both patient and system factors. We hypothesize that delayed operative fixation of distal radius fractures greater than 21 days from injury leads to increased surgical complexity and suboptimal radiographic outcomes.

METHODS: A retrospective chart review was performed of all patients who were treated with operative fixation for isolated distal radius fractures at a single county level 1 trauma center over a three-year period. Demographic and radiographic data were collected and analyzed. Primary outcome measures were operative time and total fluoroscopy time during surgery (as marker of operative complexity) and postoperative radiographic alignment.

RESULTS: Of 135 patients analyzed, 100 (74%) underwent fixation within 21 days, while 35 (26%) underwent delayed fixation. The groups had similar demographic characteristics except for AO fracture classification, with the delayed group containing more patients with AO type A fractures (57% vs. 19%, $p=0.02$). There was no difference in mean operative time or fluoroscopy time between the two groups in total, although the mean operative time of the AO type A fracture subgroup was significantly increased with delayed surgery (64.4 vs. 80.8 min, $p<0.01$). No differences in radiographic outcomes were found between cohorts.

DISCUSSION AND CONCLUSION:

In our retrospective review, we found that patients who underwent early versus delayed distal radius fixation had overall similar operative and fluoroscopy times as well as radiographic outcomes. In subset analysis, AO type A fractures were significantly more likely to undergo delayed surgery and require modestly increased operative time. We conclude that delayed surgical treatment did not adversely affect operative complexity or radiographic outcomes with volar plate fixation of distal radius fractures.