The Effect of Resident Involvement on Short-Term Outcomes after Distal Radius Fracture Surgery

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INTRODUCTION: The utilization of open reduction internal fixation (ORIF) for distal radius fractures is increasing. Distal radius fracture ORIF is a core competency of orthopaedic surgery residency training, but the effects of resident involvement on the short-term outcomes of this surgery has not been studied. Given this gap in our current understanding, we sought to answer the following question: Does resident involvement in distal radius fracture ORIF affect 30-day postoperative complication, hospital readmission, reoperation, and operative time? Our null hypothesis was that no differences exist in the rates of 30-day postoperative complication, hospital readmission, reoperation, and operative time with and without resident involvement.

METHODS: A retrospective study was performed using the American College of Surgeons (ACS) National Surgical Quality Improvement Program (NSQIP) database by querying the Current Procedural Terminology codes for distal radius fracture ORIF from January 1, 2011 to December 31, 2014. A final cohort of 5,693 adult patients who underwent distal radius fracture ORIF during the study period were included. Baseline patient demographics and comorbidities, intraoperative factors including operative time, and 30-day postoperative outcomes including complications, readmission, and reoperations were collected. Bivariate statistical analyses were performed to identify variable associated with complication, readmission, reoperation, and operative time. The significance level was adjusted using a Bonferroni correction as multiple comparisons were performed.

RESULTS: In this study of 5,693 patients who underwent distal radius fracture ORIF, 66 patients had a complication, 85 patients were readmitted, and 61 patients underwent reoperation within 30 days of surgery. Resident involvement in the surgery was not associated with 30-day postoperative complication, readmission, or reoperation, but was associated with longer operative time. Moreover, 30-day postoperative complication was associated with older age, ASA classification, COPD, CHF, hypertension, and bleeding disorder. Thirty-day readmission was associated with older age, ASA classification, diabetes mellitus, COPD, hypertension, bleeding disorder, and functional status. Thirty-day reoperation was associated with higher BMI. Longer operative time was associated with younger age, male sex, and the absence of bleeding disorder.

DISCUSSION AND CONCLUSION: Resident involvement in distal radius fracture ORIF is associated with longer operative time, but no difference in rates of episode-of-care adverse events. Patients may be reassured that resident involvement in distal radius fracture ORIF does not negatively impact short-term outcomes. The reasons for longer operative times with resident involvement may be multifactorial, but attending surgeons may focus on addressing preventable causes of prolonged surgical duration.