Rate of Reoperation and Readmission After Operative Management of Midshaft Clavicle Fractures in Adolescents

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Purpose: The national rates of reoperation and readmission after operative management of midshaft clavicle fractures in adolescents is unknown. The purpose of this study was to determine the rate of reoperation and readmission after operative management of midshaft clavicle fractures in adolescents. Additionally, this study aimed to evaluate differences between patients who did or did not require a reoperation or readmission.

Methods: Patients 10 to 18 years old with an operatively treated midshaft clavicle fracture from both Florida (2005-2012) and California (2005-2009) were identified using the Healthcare Cost and Utilization Project (HCUP) State Inpatient Database. The number of patients that required reoperation within 2 years or readmission within 90 days of operative management was determined. Differences in demographic factors between patients who did or did not require a reoperation or readmission were also determined. Descriptive, univariate, and multivariate analyses were performed.

Results: There were 334 adolescent midshaft clavicle fractures managed operatively from a cohort of 11,728 patients over the study period. 53 patients (15.87%) underwent a reoperation within 2 years at an average of 209.53 ± 151 days since the index surgery, while 11 patients (3.29%) were readmitted within 90 days to a hospital at an average of 18.91 ± 18 days after discharge. Reasons for reoperation included hardware removal (n = 49) with an average time of 202.39 ± 138 days, and revision open reduction and internal fixation (ORIF) (n <10) with an average time of 297 ± 289 days. The odds of reoperation were higher for female patients (P<0.01) and patients who had an outpatient surgery (P<0.01), while the odds of reoperation were lower for patients who underwent surgery in California (P = 0.02) The most common reason for readmission was a postoperative infection (n <10).

Conclusion: There is a high rate of reoperation and readmission after ORIF for midshaft clavicle fractures in adolescents. The majority of reoperations are performed for removal of hardware and factors associated with reoperation include female sex, outpatient surgery, and geographic location. The most common reasons for readmission was postoperative infection. Additional research is needed to investigate reasons for reoperation and readmission, variability in these rates, and ultimately decrease the risk of reoperation and readmission after operative management of midshaft clavicle fractures in adolescents.

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