

Does Insurance Status Affect the Management of Acute Clavicle Fractures?*Ryan Bliss, MD; Arthur M. Mora, MHA; Peter C. Krause, MD;**Louisiana State University Health Science Center, New Orleans, Louisiana, USA*

Purpose: Acute clavicle fractures are a very common orthopaedic problem, representing 2.6% of all fractures. The management has evolved over the past decade with a trend from nonoperative to operative management. However, there is still much debate in the orthopaedic community. The purpose of this study is to evaluate whether insurance is an unrecognized factor that plays a role in a surgeon's decision-making. We hypothesize that orthopaedic surgeons are more likely to operate on clavicle fractures in an insured population, rather than an uninsured or underinsured population.

Methods: A retrospective, cross sectional analysis was performed using the Healthcare Cost and Utilization Project (HCUP) data for Florida in the year 2010. Discharge level data from emergency departments and ambulatory surgery settings were used to identify clavicle fractures by ICD-9 codes 81000, 81002, and 81003. Internal fixation was identified using the CPT code 23515. Clavicle fractures that did not result in a CPT code of 23515 were assumed to have been managed nonoperatively. Multivariate logistic regression, allowing for intragroup correlation among surgeons, was utilized to determine the influence of payer source on treatment modality adjusting for race, age, number of chronic conditions, and gender.

Results: In total there were 9734 clavicle fractures and 1129 instances of internal fixation. Observations were removed from the analysis if there were missing personal demographic data or if the ability to track patients from the emergency department to follow-up care was not possible. Therefore, the final sample consisted of 7633 clavicle fractures of which 976 received internal fixation (12.8%). The odds of a patient with private insurance receiving internal fixation was 3.83 times (95% confidence interval [CI] = 3.02-4.85, $P < 0.001$) greater than a self-pay patient, all else being held constant. Patients defined by "other" sources of coverage that includes Workers Compensation, CHAMPUS (military), CHAMPUSVA (veterans), or other government insurance other than Medicare and Medicaid were 2.85 (95% CI = 1.99-4.09, $P < 0.001$) times more likely to have surgery relative to self-pay patients, all else being held constant. The likelihood of patients with Medicare (95% CI = .54-1.16, $P = 0.23$) or Medicaid (95% CI = .91-1.78, $P = 0.16$) having surgery did not differ significantly from self-pay patients.

Conclusion: Patients with any form of payment versus the self-pay, Medicare, and Medicaid populations have a higher likelihood of operative intervention. As there continues to be debate about management of clavicle fractures, this study suggests that an underlying decision in operative management of acute clavicle fractures may be payer source or the patient's ability to pay. Future areas of inquiry could examine why insurance has this effect and whether insurance status plays a role in surgical decision-making in other orthopaedic injuries and diseases.

- The FDA has not cleared this drug and/or medical device for the use described in this presentation (i.e., the drug or medical device is being discussed for an "off label" use). For full information, refer to page 600.