Predictors of Patient-Reported Function Following Operative and Non-operative Treatment of Acute Distal Clavicle Fractures

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Purpose: A 2017 randomized controlled trial (RCT) comparing open reduction and internal fixation (ORIF) of acute distal clavicle fractures with nonsurgical treatment found no significant differences in functional outcomes using the Disabilities of the Arm, Shoulder and Hand (DASH) score between groups at 1 year postfracture. The purpose of this study was to utilize these RCT data to assess predictors of patient-reported outcomes in each group.

Methods: Data from a previously presented RCT were analyzed. Patients aged 16-60 years with a displaced, closed fracture of the distal third clavicle were included. Functional outcomes were assessed using the DASH scores at 1 year, where a higher score indicates worse symptoms and disability. Stratified by treatment type, bivariate analyses were used to evaluate unadjusted relationships between patient demographics and DASH scores, while multivariable linear regression was used to identify independent predictors of DASH scores while adjusting for other relevant covariables. Variables with P value <0.20 on bivariate analysis were included in the multivariable models.

Results: 53 patients with complete DASH scores at 1 year postfracture were analyzed (28 treated nonoperatively, 25 treated with ORIF). In the nonoperative group, older age and current smoking were associated with worse DASH scores. Each 1-year increase in age increased DASH scores by 0.56 points (95% confidence interval [CI] 0.13-0.98 points), while current smokers scored 9.83 points (95% CI 0.54-19.13 points) higher than nonsmokers. In the ORIF group, only female sex was associated with worse DASH scores. Females scored 10.12 points (95% CI 3.7-16.7) higher on the DASH compared to males, P = 0.004.

Conclusion: These data indicate that older patients and current smokers have worse outcomes following nonoperative treatment of distal clavicle fractures, while female patients have worse outcomes following ORIF of distal clavicle fractures. These data can be used to inform patients and providers regarding outcomes following treatment of these injuries.

See the meeting app for complete listing of authors' disclosure information.