Operative Versus Nonoperative Treatment of Acute Displaced Distal Clavicle Fractures: Two-year Follow- up of a Multicenter Randomized Controlled Trial

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Purpose: We sought to compare the 2-year outcomes of patients who were randomized to operative versus nonoperative treatment for distal clavicle fractures. The 1-year results for this study have been previously reported.

Methods: Patients with a displaced type II distal clavicle fracture were randomized to nonoperative care or operative intervention. The primary outcome was the Disabilities of the Arm, Shoulder and Hand (DASH) score at 2 years.

Results: 57 patients were enrolled in the trial, with 27 randomized to operative treatment and 30 to nonoperative treatment. Follow-up was 68% at 2 years. DASH scores were similar between the 2 groups at 2 years (operative group median = 1.67, interquartile range [IQR] = 0.8 to 6.5; nonoperative group median = 1.67, IQR = 0 to 5.8; P = 0.94) and demonstrated excellent function. Between 1 and 2 years, DASH scores improved slightly (P = 0.03), but were not clinically significant. In the operative group, 13 patients underwent a reoperation for implant removal due to symptomatic hardware or implant failure (13/27, 48%), with only 1 patient requiring removal between 1 and 2 years. Six patients in the nonoperative group underwent operative intervention (6/30, 20%): 1 refused nonoperative treatment, 1 underwent operative intervention at 6 weeks (both required subsequent removal of the hardware), and 4 patients with nonunions required open reduction and internal fixation, with 2 subsequently requiring removal of hardware (1 removal occurred between 1 and 2 years). At 2 years, similar rates of union were achieved by both groups: 94% (16/17, operative) versus 85% (17/20, nonoperative) (P = 0.61) with 2/17 having required further surgery in the latter group. There were no differences in satisfaction with shoulder appearance (94% vs 81%, P = 0.35) or return to activities (94% vs 86%, P = 0.61) at 2 years.

Conclusion: We did not find a significant difference in outcomes at 2 years between patients managed operatively or nonoperatively for displaced, type II distal clavicle fractures. Operative management resulted in a frequent need for hardware removal, and nonoperative management led to higher rates of nonunion early on, requiring surgical intervention to obtain comparable rates of union.

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