

Operative vs. Non-operative Treatment of Acute Displaced Distal Clavicle Fractures: Two-year Follow-up of a Multicentre Randomized Controlled Trial

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INTRODUCTION:

To compare the 2-year outcomes of patients who were randomized to operative versus non-operative treatment for distal clavicle fractures. The one-year results for this study have been previously reported.

METHODS:

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

RESULTS:

57 patients were enrolled in the trial, with 27 randomized to operative treatment and 30 to non-operative treatment. Follow-up was 68% at 2 years. DASH scores were similar between the two groups at 2 years (operative group median = 1.67, IQR = 0.8 to 6.5; non-operative group median = 1.67, IQR = 0 to 5.8; p-value = 0.94) and demonstrated excellent function. Between one- and two-years, DASH scores improved slightly (p=0.03), but were not clinically significant. In the operative group, 13 patients underwent a re-operation for implant removal due to symptomatic hardware or implant failure (13/27, 48%), with only one patient requiring removal between one and two years. Six patients in the non-operative group underwent operative intervention (6/30, 20%): one refused non-operative treatment, one underwent operative intervention at 6 weeks (both required subsequent removal of the hardware) and four patients with non-unions required ORIF, with two subsequently requiring removal of hardware (one removal occurred between one and two 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.

DISCUSSION AND CONCLUSION:

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