

Plate fixation compared with nonoperative treatment of displaced midshaft clavicular fractures. A randomized controlled trial.

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Introduction: Newer studies have questioned traditional nonoperative treatment of midshaft clavicular fractures, indicating superior results following operative treatment, including higher healing rates.

Aim: To compare the efficacy of osteosynthesis with that of nonoperative treatment regarding shoulder function, non-union rates, and sick leave in patients with a displaced midshaft clavicular fracture.

Methods: In a multicenter, prospective trial, 147 adult patients with an acute displaced fracture of the middle third clavicle were randomized to either osteosynthesis with a precontoured plate and locking screws (75) or nonoperative treatment with a sling (72). Outcome parameters included Disabilities of the Arm, Shoulder and Hand (DASH) Score, Constant Score, duration of sick leave, and radiographic union. Patients were followed for 1 year.

Results: At three months follow-up both DASH (median 1,7 vs. 8,3) and Constant Scores (97 vs. 90) were significantly better in the operated group ($p < 0.05$). After one year there was no difference in DASH (0.83 in both groups) or Constant Scores (98 vs. 97). The non-union rate was lower in the operated group (2 of 65 vs. 12 of 64 patients, $p < 0.02$). Eight patients in the non-operated group were surgically treated for non-union. Plate removal was performed in sixteen patients after primary osteosynthesis. Ninety percent of surgically treated patients had returned to work after three months compared with seventy-four percent of conservatively treated patients ($p < 0.05$).

Conclusion: Osteosynthesis of displaced midshaft clavicle fractures with precontoured plates and locking screws results in higher union rate and quicker return to work. There is, however, no difference in functional outcome after one year.