

Comparative Analysis of Locking Plate Osteosynthesis Versus Coracoclavicular Stabilization Using a Suture Button Device for Neer Type IIB Lateral Clavicle Fractures

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Purpose: Controversy remains on the optimal operative treatment approach for unstable Neer IIB lateral clavicle fractures. The purpose of this study was to analyze and compare outcomes (ie, clinical, radiological, complications) of locking plate osteosynthesis (LPO) versus coracoclavicular stabilization (CCS) using a suture button device.

Methods: Between January 2010 and May 2018, 46 consecutive patients with Neer type IIB fractures were treated with LPO (17 patients, 37%) or CCS (29 patients, 63%). All 17 LPO patients received a 3.5-mm LCP superior lateral clavicle plate (Acumed, Hillsboro, OR) and all 29 CCS patients received a TightRope device (Arthrex, Naples, FL). The mean follow-up period was 23.7 months (range, 12-75). Radiologic outcomes were assessed using serial plain radiographs. Clinical outcomes were evaluated using the University of California, Los Angeles (UCLA) score, the American Shoulder and Elbow Surgeons (ASES) score, and subjective shoulder value (SSV). Intraoperative and postoperative complications were also evaluated.

Results: Of the 46 cases, 42 (91.3%) demonstrated complete bony union within 6 months. All 17 cases (100%) treated with LPO achieved bone healing with no complications; 25 of the 29 (86.2%) cases treated with CCS achieved bone healing. The difference in union rate between the 2 treatment methods was significant ($P < 0.001$). Clinically, there was no difference between the groups in terms of UCLA score, ASES score, or SSV ($P > 0.05$). Four patients who developed a nonunion after treatment using CCS refused reoperation due to a perceived absence of clinical problems; they are currently undergoing a simple follow-up.

Conclusion: Although treatment with CCS resulted in higher nonunion rate compared with LPO, both approaches achieved satisfactory clinical outcomes. Both techniques can be useful options for the treatment of Neer type IIB lateral clavicle fractures.