

Operative Fixation of Rib Fracture Nonunions

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Purpose: Rib fractures are common injuries in trauma patients that often heal without intervention. Infrequently, symptomatic rib fracture nonunions are a complication after rib fractures. There is a paucity of literature on the surgical treatment of rib fracture nonunion. The purpose of this study was to describe the efficacy of rib fracture nonunion operative fixation with particular focus on technique, healing rates, and complications.

Methods: Patients aged ≥ 18 years with symptomatic rib fracture nonunions treated with open reduction and internal fixation (ORIF) with locking plates at a single urban Level I trauma center were retrospectively reviewed. Pertinent demographic, clinical, radiographic, and surgical data were collected and analyzed.

Results: A total of 18 patients met inclusion criteria. The mean time from injury to undergoing ORIF for rib fracture nonunion was just under a year and the number of ribs plated was 2.95 ± 1.16 (range, 1-5 ribs) with bone grafting used in 6 cases. All patients (100%) showed evidence of healing at an average of 2.65 ± 1.50 months (range, 2-8 months). All patients reported a decrease in pain. No narcotic pain medication was used at an average of 3.88 ± 3.76 weeks (range, 0-10 weeks) postoperatively. Intraoperative and postoperative complications were found in 4 patients (22.2%).

Conclusion: This study demonstrated that operative fixation of symptomatic rib fracture nonunion demonstrated favorable outcomes with reduction in preoperative pain levels, decreased use of narcotic pain medication, minimal complications, and a high rate of fracture union. This described method provides symptomatic relief, reduction in pain, and promotes bony healing of the fracture nonunion without development of major complications. We suggest that operative fixation should be considered as the primary method of treatment of symptomatic rib nonunions.