Medial Malleolus Fixation in Combination with Fibular Intramedullary Nailing: Are We Wasting our Time?

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Purpose: The fibular nail aims to minimize trauma to the soft-tissue envelope, particularly in high-risk patients. While the lateral malleolus appears to be crucial in controlling anatomical reduction of the talus, the role of the medial malleolus is less clear. Fixation of associated medial fractures requires generous skin incisions, periosteal stripping, and internal fixation. We have noted an increase in medial wound complications in our trauma unit. This study compare the rates of failure and complications among medial malleolar fractures, treated operatively and nonoperatively.

Methods: We identified 336 patients from our prospective trauma database that were managed for an unstable fracture dislocation with a fibular nail over an 8-year period. Isolated lateral malleolar fractures were excluded. All patients had adequate preoperative, intraoperative and postoperative radiographs. Demographic data, fracture classification, and detailed radiographic parameters were recorded. Patients completed the EQ-5D, Olerud-Molander, and Manchester/Oxford Foot Questionnaire (MOXFQ).

Results: There were 237 included patients with a mean age of 66.2 years (range, 25-96 years); 81% (n = 191) were female. There were 188 (79%) AO/OTA 44-B2/44-B3 fractures. Medial malleolus fixation was performed in 186 cases (79%). In the remaining cases the surgeon left the medial malleolus fracture without fixation. The 2 groups were well matched with respect to demographics, fracture type, and presence or absence of a posterior malleolus fracture. There was no significant difference between the 2 groups with respect to failure of fixation requiring revision surgery (P = 0.634) or loss of talar reduction postoperatively (P = 0.157). Nonunion of the medial malleolus occurred in 16 patients (31%) treated nonoperatively, compared with 22 patients (12%) undergoing fixation (P = 0.002). This was not associated with increased pain or impaired functional outcome. No patient required revision surgery for nonunion. Nine patients (5% of fixation group) required late removal of medial hardware.

Conclusion: We have demonstrated no significant difference in revision rates between fixation and nonfixation groups. We believe associated medial malleolus fractures can be treated nonoperatively in the presence of stable fibular fixation, offering decreased operative time, wound complications, and reoperation. The higher rate of radiographic medial malleolus nonunion appears to be of minimal clinical significance.

See pages 401 - 442 for financial disclosure information.