Extraperiosteal Plating of Pronation-Abduction Ankle Fractures

Reference:

Scientific Literature Reviews

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Podiatric Relevance:
This study provides an effective surgical method for reduction and fixation of pronation-abduction ankle fractures.

Methods:
The study consisted of thirty-one patients with an unstable comminuted pronation-abduction ankle fracture which were treated with extraperiosteal plating of the fibular fracture. There were nineteen bimalleolar and twelve lateral malleolar fractures with associated deltoid ligament injury. In cases of bimalleolar fractures, the medial malleolar fracture was reduced first to restore medial support, gain talar congruence and assist in reduction of the lateral malleolar fracture. The tibial fracture was fixated with two cortical lag screws inserted perpendicular to the fracture line. The lateral malleolar fracture was visualized by fluoroscopy, reduced and the talocrural angle on the affected side was compared with the contralateral side to confirm fibular length. A skin incision was then made leaving the entire periosteum intact. The fibular plate was placed into the wound making certain to be centered between the anterior and posterior borders of the bone and screws were placed from proximal to distal. Once both medial and lateral stability was restored the syndesmosis was tested for stability. If syndesmotic fixation was indicated, the syndesmotic screws were placed through the plate just proximal to the subchondral bone of the plafond. Postoperative care for patients with stable syndesmosis consisted of non-weight-bearing for six weeks with passive and active motion permitted as soon as wounds healed. Patients with syndesmotic screws were non-weight-bearing for 12 weeks with active and passive motion beginning at 4 weeks. Patients with syndesmotic repair were offered syndesmotic screw removal at 12 weeks. Patients were evaluated functionally (using the American Orthopaedic Foot and Ankle Society score), radiographically, and clinically (range-of-motion testing).

Results:
Immediate postoperative and final follow-up radiographs showed that all patients had well aligned ankle mortise on the fractured side as compared with the unaffected side. All the fractures healed without displacement. No significant wound infections were noted. After a 2 year follow-up for twenty-one patients the American Orthopaedic foot and Ankle Society score was 82. Adequate range-of-motion at the ankle joint was also noted for all patients.

Conclusions:
This study shows that extraperiosteal plating for fibular fractures in pronation-abduction ankle fractures is a viable treatment option with predictable results.