

Medial Approach for Reduction and Buttress Plating of Plantar Medial Tuberosity Calcaneus Fractures

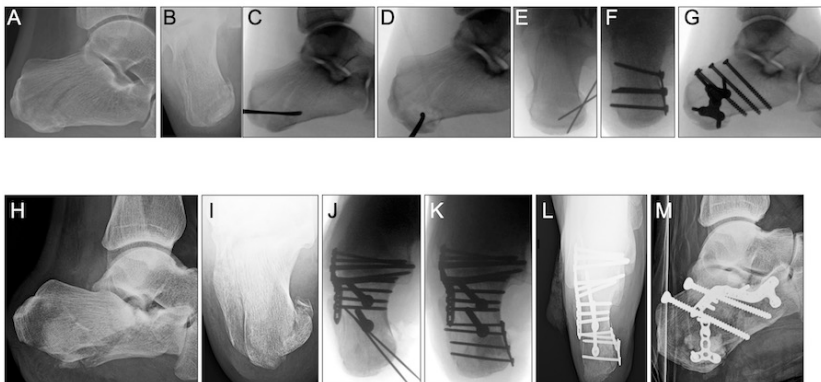
Lawrence Henry Goodnough, MD; Eli W. Bunzel, MD; Mark Robert Adams, MD; Michael Githens, MD; Stephen K. Benirschke, MD; Reza Firoozabadi, MD Harborview Medical Center, Seattle, WA, United States

Purpose: Up to 73.6% of tongue-type calcaneus fractures have a concomitant avulsion of the plantar medial tuberosity, a structure that serves as the origin for the heel pad and the plantar fascia. Failure to address displaced plantar medial avulsions may result in disability for patients. To our knowledge, an operative technique for neutralization of the medial displacement vector has yet to be described. The purpose of this study is to describe our approach to reduction and buttress plating of plantar tuberosity fractures via a medial exposure.

Methods: Twelve patients with plantar medial tuberosity fractures (Fig. 1: A, B, H, I) were treated operatively using the described technique. 11 of 12 patients were males. Age was 32.1 ± 10.7 years. A transverse incision is made over the tuberosity medially (C) at the glabrous/non-glabrous skin border and carried to the medial wall. The distal aspect of the incision is limited by the calcaneal branch of the tibial nerve. The overlapping medial wall fragment is disimpacted, translated inferiorly and laterally, with the aid of a shoulder hook (D) and small bump under the lateral heel as a fulcrum, and anchored with wires in place temporarily to help facilitate reduction (E, J). A cervical H-plate (F, G) or minifragment locking plate (K-M) is bent appropriately and screws are inserted to buttress the tuberosity medial to lateral. The skin layer is closed with Allgower-Donati nylon sutures, and the patient is placed into a splint after a gastrocnemius recession is performed to mitigate the contribution of equinus to the pathoanatomy. Patient is kept non-weightbearing for a total of 3 months. At 2 weeks, gentle ankle and subtalar range of motion begins. All patients had radiographs that were reviewed during the postoperative period.

Results: There were no reoperations or complications in this technique-based case series.

Conclusion: A medial approach to reduction and buttress plating is a viable option for fragment-specific fixation of plantar medial tuberosity calcaneus fractures.



The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.