Primary Subtalar Arthrodesis for Acute Intra-articular Displaced Calcaneal Fractures
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Introduction/Purpose: Many patients who sustain intra-articular calcaneus fractures have persistent pain and ultimately require subtalar fusion secondary to posttraumatic arthritis. Although often recommended for severe fractures, little evidence exists describing outcomes of primary subtalar arthrodesis for calcaneal fractures. The purpose of this study was to evaluate primary subtalar arthrodesis for the management of acute, displaced, intra-articular calcaneal fractures.

Methods: A retrospective chart review was completed for all primary subtalar arthrodeses of acute displaced, intra-articular calcaneus fractures over a 6 year period. 25 patients were identified. Preoperative CT scans were reviewed for Sanders classification and CT scans obtained at a minimum of 3 months postoperatively were evaluated to quantitate the fusion mass by a blinded reviewer. Subtalar union was defined as greater than 50% bony bridging of the posterior facet based on CT sagittal and coronal views. Patients were contacted to complete the VR-12 mental and physical components, and the Foot and Ankle Ability Measurement (FAAM) score.

Results: Median patient age at the time of surgery was 49.9 years (41.5-55.9). Mean follow up was 35 months (range 5-80). Four percent (1/25) of patients had a Sanders II calcaneus fracture, 40% had a Sanders III fracture, and 56% (14/25) had a Sanders IV fracture. Median VR-12 mental component was 66.9 (62.9-68.6), median VR-12 physical component was 41.44 (33.0-49.9), median FAAM ADL score was 66.7 (36.9-83.3), and median FAAM sports score was 58.9 (28.6-69.6). One patient had a nonunion of the subtalar joint (4%), 3 patients had 51-75% fusion of the posterior facet, and 21 patients (84%) had greater than 75% union of the posterior facet. One patient required hardware removal after fusion.

Conclusion: Primary subtalar fusion for acute, displaced, intra-articular calcaneus fractures has a high rate of union and good pain and function outcomes. It should be considered for patients with significant cartilage injury and comminution of the posterior facet.

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