

Posterior Arthroscopic Subtalar Arthrodesis for Displaced Intra-Articular Calcaneus Fractures

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INTRODUCTION: The purpose of our paper is to report a retrospective review of patients who underwent primary posterior arthroscopic subtalar arthrodesis (C-PASTA) for displaced intra-articular Sanders type III and IV calcaneus fractures (DIACFs).

METHODS:

We performed a retrospective review of two fellowship trained orthopaedic foot and ankle surgeons between May 2021 and February 2023 for patients that underwent acute posterior arthroscopic subtalar arthrodesis for DIACFs. All patients had a preoperative computer tomography (CT) for classification. All procedures utilized a percutaneous reduction, arthroscopic joint preparation, and bone grafting fixated with cannulated screws. Demographic and radiographic data was collected including CT union at 3 months, complications, tourniquet time, foot and ankle disability index (FADI) scores, visual analog score (VAS), and work status.

RESULTS: Seventeen CPASTAs were performed, with mean follow up of 276 days. Two patients were incarcerated indefinitely and follow-up data was not included. Subtalar union was documented on CT scans in 14 of 15 patients (93%) at 3 months postoperatively. One patient (77 years old) experienced nonunion, hardware removal, and oral antibiotics. The mean age was 51.7 (25-82 years old), 83% males, 58% used nicotine, 42% used illegal drugs at the time of injury. A fall from 10 feet or more was the mechanism of injury in 75% of cases. In total, 83% percent had an associated spine or long bone fracture. Four patients had bilateral calcaneus fractures. The mean tourniquet time was 104 minutes (75-160). Functional outcomes at 3, 6, and 12 months were 72, 88.6, and 94 for FADI and 1.8, 1.4, and 1.1 for VAS.

DISCUSSION AND CONCLUSION: In this case series of displaced intra-articular Sanders type III and IV calcaneus fractures, acute posterior arthroscopic subtalar arthrodesis resulted in excellent rates of fusion, minimal pain, and preserved activities of daily living.

FIGURE 1. Clinical image demonstrating prone setup of arthroscopic and fluoroscopic images needed to perform CPASTA.

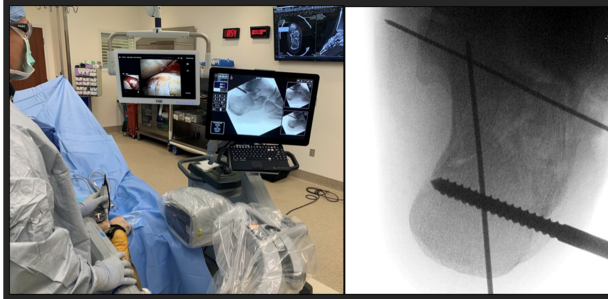


FIGURE 2. Radiographic images demonstrating intra-operative fluoroscopy and radiographs showing retention of height and fusion 6 months post-operatively.

