Arthroscopic Reduction and Internal Fixation of Talus Fractures: An All-Inside Soft-Tissue Preserving Technique
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Category: Arthroscopy; Hindfoot; Trauma

Keywords: Talus Fractures; Arthroscopy; Trauma

Introduction/Purpose: Talus fractures, although rare, can lead to devastating complications of posttraumatic osteoarthritis (PTA), mal-union, non-unions, and avascular necrosis (AVN). The timing and method of fixation has been controversial, especially for open and extruded fractures. The purpose of this study is to present short-term outcomes using a posterior talus arthroscopic reduction internal fixation (TARIF) technique. The authors hypothesized that talus fractures reduced arthroscopically and fixed percutaneously would have similar outcomes with reduced overall complications compared to traditional open techniques.

Methods: We performed a retrospective study on 14 consecutive patients undergoing primary posterior arthroscopic reduction internal fixation for talus fractures from August 2020 to January 2021. All cases were performed completely arthroscopically, utilizing a posterior approach and cannulated screws. Patient demographics, fracture pattern, perioperative complications, and radiographic findings were collected.

Results: The mean age of our cohort was 37.3 years (range, 19-75), including 8 males and 6 females, with 58% utilizing nicotine. Motor vehicle accidents accounted for 64% of injuries, followed by falls and gunshot wounds. Fracture location included 9 body fractures, 5 neck fractures Hawkins type 2 (1), 3 (3), and 4 (1). Five fractures were open injuries, 2 of which had vascular injuries that underwent irrigation and debridement followed by external fixation. Intraoperatively, all patients had 2-3 anterior to posterior 3.5mm cannulated headless screws placed with a mean tourniquet time of 87 minutes (range, 0 - 88). Postoperatively, all fractures had the articular surface restored to within 2mm on radiographs. No patients required antibiotics and no debridements were performed. No acute AVN has been recorded.

Conclusion: Our short-term results indicate posterior arthroscopic reduction internal fixation of talus fractures is safe and able to restore the articular surfaces. It also suggests that an all-inside soft tissue preserving technique may reduce short term complications.