

Total Talar Dislocation Requiring Complete Talectomy and Reimplantation with Posterior Tibial Tendon Impingement: A Case Report and Surgical Technique Review

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Objective

A rare case of total talar dislocation complicated by posterior tibial tendon impingement and complete talectomy with reimplantation, detailing the surgical management, wound care, and long-term follow-up that resulted in an outstanding outcome without avascular necrosis (AVN) with return of full weight-bearing status.

Introduction

Total talar dislocations are rare, high-energy injuries complicated by soft tissue disruption and the talus's poor vascularity. This case is unprecedented in requiring complete talar removal and reimplantation due to posterior tibial tendon impingement. Given the talus's minimal soft tissue attachments, successful reimplantation is exceptionally rare, with few cases documented in the literature.



Case Overview and Surgical Technique

A 26-year-old male sustained a rare medial total talar dislocation with associated fractures. After failed closed reduction, open reduction was performed via a curvilinear medial incision. Intraoperatively, the talus was rotated and irreducible due to posterior tibial tendon impingement, requiring tenolysis with tendon incision after proximal and distal clamping. The talus, completely detached from capsuloligamentous support, was fully removed, anatomically realigned, and re-implanted into the ankle mortise. The posterior tibial tendon was repaired using a modified Krackow technique, and the deltoid ligament was reapproximated. A postoperative medial wound was treated with serial debridement and topical agents (Santyl, gentamicin). At 12 weeks, MRI confirmed multifocal bone infarcts without collapse or AVN. The patient progressed to full weight-bearing without complications.



Result

Postoperatively, the patient reported immediate pain relief and maintained good alignment. At 9 weeks, superficial medial wound necrosis was managed with local debridement. A secondary plantar wound resolved by week 12, allowing return to activity. By week 24, MRI showed diffuse talar marrow infarcts and a partial posterior tibial tendon tear, but the talus remained well-aligned with no signs of AVN. The patient progressed to full weight-bearing with orthotic support, and no surgical reintervention was needed.

Discussion

This case highlights the challenges of managing total talar dislocations with associated tendon and soft tissue injuries. While surgical intervention restored alignment and controlled pain, postoperative complications such as wound necrosis and tendon changes required extended follow-up. MRI findings emphasize the need for long-term monitoring. Although total talectomy with reimplantation is rarely reported and typically associated with a high risk of AVN, this case demonstrates that with meticulous technique and careful postoperative care, excellent outcomes are achievable. The patient's weight loss and adherence to physical therapy further contributed to recovery, despite some residual functional limitations.



Conclusion

This case demonstrates that with meticulous surgical technique, even complex total talar dislocations with posterior tibial tendon impingement can achieve excellent outcomes. Despite the talus's limited vascularity, the reimplantation preserved alignment without AVN, showcasing the efficacy of the approach. These findings expand our understanding of managing complex talar injuries and highlight the potential for successful outcomes in challenging clinical scenarios.

References

- Weston JT, Liu X, Wandtke ME, Liu J, Ebraheim NE. A systematic review of total dislocation of the talus. *Orthop Surg*. 2015;7(2):97-101. doi:10.1111/os.12167.
- Tan E, Chua HS, Ooi CL, Zulkiflee O. Open total talus dislocation: a case report. *Malays Orthop J*. 2012;6(3):60-62. doi:10.5704/MOJ.1207.009.
- Rhanim A, El Zanati R, Ouchrif Y, Ameziene Hassani Z, Kharmaz M, Berrada MS. Nonoperative treatment of closed total talus dislocation without fracture: a case report and literature review. *J Clin Orthop Trauma*. 2014;5(3):172-175. doi:10.1016/j.jcot.2014.05.010.
- Itsiopoulos I, Vasiliadis AV, Goulios V, Bangeas P, Sapalidis K. Open treatment of closed talus dislocation without fracture: a case report and literature review. *J Orthop Case Rep*. 2018;8(6):34-37. doi:10.13107/jocr.2250-0685.1246.