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(CASE REPORT)

Extrusion of the body of the talus with reimplantation: A case report

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Abstract

Complete talar extrusion is a rare and severe injury, typically resulting from high-energy trauma. This case report describes the management of a 19-year-old patient who sustained an open talar extrusion with associated fractures following a motorcycle accident. The extruded talar body was decontaminated and surgically reimplanted using pin fixation, followed by arthrodesis of the talonavicular, subtalar, and ankle joints. Despite the high risk of complications such as avascular necrosis (AVN) and infection, reimplantation was pursued to preserve ankle architecture and function. Early surgical debridement, rigid fixation, and staged soft tissue management were critical in minimizing infection risk. Although AVN and post-traumatic osteoarthritis remain significant concerns, salvage procedures may offer better functional outcomes compared to primary talectomy. This case highlights the importance of prompt intervention, meticulous surgical technique, and long-term follow-up in managing complete talar extrusions.

Keywords: Talus extrusion; Talar dislocation; Reimplantation; Avascular necrosis (AVN); Open ankle fracture

1. Introduction

Talus extrusion or complete dislocation of the talus is a rare lesion following high-energy trauma [1]. These are rare injuries with long-term implications [2]. The talus is rarely completely detached. In the case of ligament rupture, part of the talus may be ejected outside the wound [2].

The mechanism of injury is supination and plantar flexion of the foot [3]. This type of injury is generally associated with damage to the soft tissue or surrounding bone structures, increasing the risk of complications. [3]

Open dislocation fractures of the talus require emergency decontamination and reduction of the fracture. The most serious complication is infection [2]. The prognosis of reimplantation following extrusion is rarely favorable [4].

The incidence is estimated at 0.06, and 2% of all talar lesions/extrusion of the body is rarely described.

(boden) series of 19: 88% osteonecrosis / 44% arthrosis

2. Clinical observation

We report the observation of a 19-year-old patient admitted following a motorbike accident with a point of impact on the left ankle. On admission, the patient presented with total functional impotence, a localized cutaneous opening on the anterolateral aspect of the ankle with contusion of the edges, and a soiled bone fragment that was recovered at the

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scene of the accident and brought back by the family. The emergency course of action was to carry out an X-ray and decontaminate the bone fragment by washing it with saline and leaving it in gentamicin-soaked compresses.

The radiological findings were a fracture of the neck of the talus with enucleation of the body of the talus, and the CT scan showed a fracture of the neck of the talus with subluxation of the head and detachment of the posterior tubercles of the talus held in place, probably by the attachments of the posterior bundles of the medial collateral ligament and the lateral collateral ligament.

In the operating theatre, after washing, the ankle was widened using the anterolateral approach. Exploration revealed a rupture of the lateral ligamentous plane involving the anterior and middle bundle, the head was subluxated and fractured with two large medial and lateral fragments, and posteriorly, the two detached tubercles were found.

Reimplantation of the body of the talus was carried out with fixation using anteroposterior pins to allow arthrodesis of the talonavicular joint, followed by an arthrodesis pin for the subtalar joint and ankle joint.

Figure 1 A the wound in the antero lateral aspect of the ankle B. The unique continuity of the neck where in his inferieur part C. talus was extruded and soiled D. talus was decontaminated and prepared

Figure 2 Preoperative Imaging: Revealed a fracture of the talar neck with complete extrusion of the talar body from the ankle joint and post operative imaging Showed successful reimplantation of the talar body with anteroposterior pin fixation and Arthrodesis of the talonavicular joint was visible, along with stabilization of the subtalar and ankle joints using additional pins

3. Discussion

Extrusion or complete dislocation of the talus is an uncommon lesion following high-energy trauma (Dimitrios). Reimplantation is a reasonable option, but in the case of significant soiling or a lost talus, the choice of treatment remains controversial (Dimitrios).

More than 60% of the talus surface is covered with hyaline cartilage and ligament attachments, and there are no muscular attachments (bandar).

Depleting its blood supply (john t watson). This precarious vascularisation is easily interrupted by dislocation of the talus, resulting in avascular necrosis.

The blood supply is provided by the anterior and posterior tibial arteries: the body of the talus, the medial wall and the neck of the talus. the artery of the tarsal canal, which anastomoses with the artery of the tarsal sinus, a branch of the perforating peroneal artery, the inferior surface of the neck and body (bandar). The risk of avn is greatest when soft tissue attachments are lost (bandar)

This risk is aggravated by the occurrence of an infection in the postoperative period, particularly in the case of a cutaneous opening (john t), as well as the association with a fracture, which will lead to an additional interruption in vascularisation.

(John Watson) The majority of fractures are articular, contributing to the risk of osteoarthritis.

Avascular necrosis (bandar) is generally observed between 6 months and 2 years after the accident: the Hawking sign with subchondral radiolucency at the level of the talar dome after 6 to 8 weeks.

(bandar) The incidence of infection can be reduced by the use of the open fracture protocol and careful manipulation of the soft tissue: reducing the frequency of infection can be achieved by a staged approach, multiple debriments, early soft tissue closure and rigid fixation.

(John Watson) Historically, total dislocation of the talus was managed by primary telectomy and arthrodesis with the aim of limiting the complications described above, i.e., infection or repeat surgery, with similar rates between talectomy/salvage. In addition, the results of the primary telectomies were much poorer than those of the conservative treatment group.

4. Conclusion

Complete talar extrusion is a rare and severe injury, often resulting from high-energy trauma. This case highlights the challenges in managing such injuries, particularly regarding vascular compromise, infection risk, and long-term complications like avascular necrosis (AVN) and post-traumatic osteoarthritis.

Despite the high risk of AVN, reimplantation of the extruded talus remains a reasonable option when the bone is salvageable, as it preserves ankle architecture and may delay or reduce the need for complex arthrodesis. However, meticulous surgical debridement, rigid fixation, and staged soft tissue management are crucial to minimizing infection risk.

Historically, primary talectomy was favored to avoid complications, but recent evidence suggests that salvage procedures may yield better functional outcomes. Close follow-up is essential to monitor for AVN, which typically manifests within 6 months to 2 years post-injury.

This case underscores the importance of early intervention, thorough debridement, and careful postoperative management in optimizing outcomes for patients with complete talar extrusion. Further studies are needed to refine surgical strategies and improve long-term prognosis in these complex injuries.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

References

[1] Kitridis D, Lampridis V, Rigkos D, Savvidis I, Georgiannos D, Bisbinas I. Posttraumatic missing talus: Staged allograft interposition and fusion. Should we fuse the "talo-navicular" joint? Clin Case Rep. 2022 Sep 14;10(9):e6328. doi: 10.1002/ccr3.6328. PMID: 36177071; PMCID: PMC9474910

[2] Cujba G, Angan N, Dragusanu M. Open Fracture Dislocation of the Talus With Partial Talar Extrusion: A Case Report. Cureus. 2023 Jun 20;15(6):e40673. doi: 10.7759/cureus.40673. PMID: 37485107; PMCID: PMC10357340.

[3] Kasha S, Yalamanchili RK. The Masquelet technique in an extruded talus injury after open peri-talar dislocation-A case report. Trauma Case Rep. 2021 Nov 23; 36: 100559. doi: 10.1016/j.tcr.2021.100559. PMID: 34901372; PMCID: PMC8639462.

[4] Weston JT, Liu X, Wandtke ME, Liu J, Ebraheim NE. A systematic review of total dislocation of the talus. Orthop Surg. 2015 May;7(2):97-101. doi: 10.1111/os.12167. PMID: 26033988; PMCID: PMC6583369.

[5] AlMaeen BN, ElMaghrby IS, AlNour MK, Alrefeidi TA, Abu Adas SM. Complete Revascularization of Reimplanted Talus After Isolated Total Talar Extrusion: A Case Report. Cureus. 2020 May 3;12(5):e7947. doi: 10.7759/cureus.7947. PMID: 32377500; PMCID: PMC7199902.

[6] Moussa MK, Bou Raad R, Ghanem I, Mansour O. Complete Extrusion of Talar Body Associated With Ipsilateral Floating Knee. Cureus. 2020 Sep 9;12(9):e10346. doi: 10.7759/cureus.10346. PMID: 33062470; PMCID: PMC7549865.