

Closed Talar Dislocation without Associated Fracture a Very Rare Injury, a Case Report

Yashavntha Kumar C¹, Sandeep Reddy¹, Dinesh Kumar Golla¹, Niranthara Ganesh¹

What to Learn from this Article?

Management of Isolated Closed Talar Dislocations.

Abstract

Introduction: Total talar dislocations are uncommon injuries and usually seen following high velocity injuries. Total talar dislocations (missing talus) without fractures around the ankle are extremely rare. There are no consensuses on the best treatment of such injuries. To best of our knowledge very few cases have been reported in literature. We hereby report a closed total talar dislocation in a 25 year old male without an associated fracture around ankle. He was managed with emergency closed reduction and below knee splint. At one year follow up there were no complications.

Case Report: A 25 year old male presented to orthopaedic casualty with injury to right ankle following a road traffic accident. Patient complained of severe pain and deformity of ankle following injury. On examination ankle was deformed and swollen. Plain radiographs of right ankle joint revealed total anterolateral dislocation of talus without any accompanying ankle fracture. CT scan with 3D reconstruction also confirmed our radiographic findings. Under spinal anaesthesia and fluoroscopic guidance closed reduction was performed. To maintain reduction a 3mm K-wire was passed from calcaneum to tibia through talus. A posterior below knee splint was applied. Patient was followed every three months till one year. At one year follow up patient had good range of motion at ankle and subtalar joint.

Conclusion: Total talar dislocations are very rare injuries and should be treated as impending open fractures. There is no consensus on treatment of such complex injuries as very few cases have been reported in literature.

Keywords: Malleolar fracture, Missing talus, Talar dislocation.

Author's Photo Gallery



Dr. Yashavantha Kumar C



Dr. Sandeep Reddy



Dr. Dinesh Golla

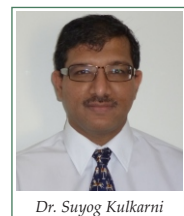


Dr. Niranthara Ganesh

Reviewer's Photo Gallery



Dr. Rajendra Abhyankar



Dr. Suyog Kulkarni

¹Dept of Orthopaedics, M S Ramiah Medical college and Hospitals, Bangalore. India.

Address of Correspondence

Dr Yashavantha Kumar C, No 20, Sri Tiru Nivas , Lotte Golla Halli, RMV II STAGE, Bangalore -560094. India. Mobile: 919663581868
E-mail: kumyashwanth@gmail.com

Introduction

Talar fracture dislocations are very rare injuries accounting for 0.06% of all dislocation and 2% of all talar injuries and are usually associated with malleolar fracture or a talar fracture itself[1-2]. Total extrusion of the talus with interruption of all ligaments is called missing talus. Total talar dislocation is synonymously used with missing talus. Total dislocation of the talus bone from all of its three joints (tibiotalar, subtalar, and talonavicular) without a fracture is a extremely rare injury[3-5]. These type of injuries are usually caused by high velocity injury with disruption of almost all ligaments and capsular attachments of the talus[6]. It usually leads to degenerative changes in neighbouring joints and frequently avascular necrosis is a predictable outcome[7]. We present a case of total talus dislocation without any fracture which was treated by closed reduction and immobilization for six weeks.

Case Report

A 25 Years old male presented to orthopaedic casualty with injury to right ankle following a road traffic accident. Patient complained of severe pain and deformity of ankle following injury. On examination ankle was deformed and swollen with very tense skin. Abrasion was present on the medial aspect [Fig.1, 2]. Foot was in equinus and



Figure 1: Pre-operative Clinical Photograph showing Talar Dislocation

supination with no distal neurovascular deficits. Plain radiographs revealed total anterolateral dislocation of talus without an accompanying ankle fracture [Fig.3, 4]. CT scan with 3D reconstruction also confirmed our radiographic findings



Figure 2: Pre operative Clinical Photograph showing Abrasion over Lateral Malleolus.

[Fig.5]. Under spinal anaesthesia and fluoroscopic guidance, closed reduction was performed by longitudinal traction and pushing the talus in the posteromedial direction. Following this technique talus was reduced and click was felt. Reduction was confirmed by fluoroscopy images and were acceptable. To maintain reduction a 3mm K-wire was passed from calcaneum to tibia through talus [Fig.6, 7]. A posterior below knee splint was applied. Splint was removed after six weeks and mobilised. Patient was followed every three months till one year. At one year follow up patient had good range of motion at ankle and subtalar joint. Plain radiographs at one year follow up showed no signs of avascular necrosis of talus or arthritis of subtalar joint.

Discussion

Proposed treatments for total talus dislocation varied from primary talectomy or arthrodesis to closed reduction and below knee cast. The few case reports found in the literature and the non-existent guidelines add to the confusion regarding the best method of treatment. The mechanism is thought to be excessive supination or pronation. Depending on whether the foot comes to supination or pronation the dislocation can be either anterolateral (the most usual) or posteromedial [8]. This type of injury is supposed to be in continuation of subtalar dislocation when the force magnifies and continues. Dislocation of subtalar joint is the first stage of the injury. When the force progress, talonavicular joint dislocates and finally tibiotalar joint dislocation occurs. Because of all capsular and ligamentous attachments of the talus are ruptured in this injury and dependence of talus bone vascularization on these ligaments, avascular necrosis of the talus is mostly predictable.

There is a deference of opinion regarding best method of treatment for closed talar dislocations. Most of the authors suggest open reduction for open talar dislocations [Table 1]. Procedures like talectomy and tibiocalcaneal fusion were reserved for later salvage. Ritsema et al suggested open reduction as the best choice of treatment for closed



Figure 3: Radiograph Showing total Talar Dislocation in Lateral View.



Figure 4: Radiograph showing Total Talar Dislocation in Anteroposterior View.

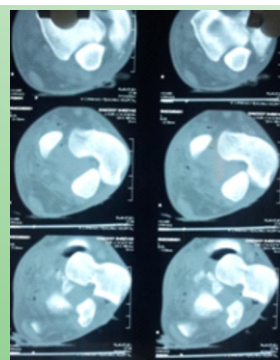


Figure 5: CT Scan of Ankle Showing Total Talar Dislocation.



Figure 6: Fluoroscopic Image after Closed Reduction and K-wire Fixation.



Figure 7: Postoperative Radiograph Lateral View.

injuries[9]. Anterolateral incision is preferred approach for open reduction as it gives an excellent approach to ankle joint. Taymaz and Gunal reported a case of closed total talus dislocation treated by closed means with excellent result[10]. Hadji et al. also reported good result after closed reduction of a complete talus dislocation on a three year follow-up[11].

talectomy and tibiocalcaneal arthrodesis are reserved for late complications.

References

1. Sanders D. Fractures of the talus. In: Bucholz RH, Heckman JD, Court Brown C, editor. Fractures in adults. 6th ed. Philadelphia: Lippincott Williams & Wilkins; 2006. p. 2249-91.
2. Hiraizumi Y, Hara T, Takahashi M, Mayehiyo S : Open total dislocation of talus with dislocation with extrusion (missing talus) : report of two cases. foot and ankle 1992, 13(8):473-7
3. Taymaz A, Gunal I. Complete dislocation of the talus - Unaccompanied by fracture. J Foot Ankle Surg 2005; 44: 156-8.
4. Hiraizumi Y, Hara T, Takahashi M, Mayehiyo S. Open total dislocation of the talus with extrusion (missing talus): report of two cases. Foot Ankle. 1992 Oct;13(8):473-7.
5. Detenbeck LC, Kelly PJ. Total dislocation of the talus. J Bone Joint Surg Am. 1969 Mar;51(2):283-8.
6. Leitner B. The mechanism of total dislocation of the talus. J Bone Joint Surg Am. 1955;37-A(1):89-95.
7. Marsh JL, et al. Major open injuries of the talus. J Orthop Trauma. 1995;9(5):371-376.
8. Bas T, Vicent V, Alcantara P, Llabres AJ. Complete dislocation of the talus: a report of 5 cases. Foot 1994; 4: 102-5.
9. Ritsema GH. Total talar dislocation. J Trauma 1988; 28: 692-4.
10. Taymaz A, Gunal I. Complete dislocation of the talus - Unaccompanied by fracture. J Foot Ankle Surg 2005; 44: 156-8.
11. Hadji M, Galli M, Moalla R, Kmantar L, Hamdi A. Conservative treatment of talar dislocation: a case report. Rev Chir Orthop Reparatrice Appar Mot 2004; 90: 285-8.

Authors	Year	Diagnosis	Treatment	Outcome
Xarchars K.C. et al	2009	Closed anterolateral dislocation of talus	Closed reduction	Good
Sharifi S R et al	2009	Closed total talar dislocation	Open reduction	Good
Naranje S et al	2010	Chronic closed dorsolateral dislocation of talus	Talectomy	Poor
Pnagiotis K P et al	2012	Closed anterolateral dislocation of talus	Closed reduction	Good
Our case	2013	Closed anterolateral dislocation	Closed reduction and K-wire stabilization	Good

Conclusion

Talar fracture dislocations are very rare injuries seen following high velocity injuries. Total talar dislocations without associated malleolar fracture are extremely rare. Very few cases of similar kind have been reported in literature. Closed reduction at the earliest will reduce complications of such injuries. Salvage procedures like

Clinical Message

Total talar dislocations are very rare injuries seen following a high velocity injuries and are associated with ankle fractures. Closed reduction at the earliest is the best method of treatment for closed talar dislocations. Open reduction is required for unsuccessful closed reductions.

Conflict of Interest: Nil
Source of Support: None

How to Cite this Article:

Yashavntha KC, Reddy S, Golla DK, Niranthara G. Closed Talar Dislocation without Associated Fracture a Very Rare Injury, a Case Report. Journal of Orthopaedic Case Reports 2014 April-June;4(2): 10-12