

Short Report

Open Access

Clinical Case Report on Neglected Traumatic Subtalar Dislocation

Biruk Ferede Zewdu*, Endalk Fenta Andualem

Department of Orthopedics & Trauma Surgery, School of Medicine, College of Medicine and Health Sciences, Bahir Dar University, Ethiopia

Article Info

Article Notes

Received: July 01, 2025

Accepted: September 05, 2025

*Correspondence:

*Dr. Biruk Ferede Zewdu, Department of Orthopedics & Trauma Surgery, School of Medicine, College of Medicine and Health Sciences, Bahir Dar University, Ethiopia;
Email: amanbiruk9741@gmail.com

©2025 Zewdu BF. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License.

Keywords

Neglected Subtalar Dislocation
Tibiototalcalcaneal Nail
Tibiototalcalcaneal Arthrodesis

Abstract

The subtalar joint is a complex joint in the foot formed by the articulation of the talus, calcaneus and navicular bone. Subtalar dislocations occur due to simultaneous dislocation of both talocalcaneal and talonavicular joints, without significant talus fracture. Neglected talar dislocations pose a significant challenge due to the high risk of complications. Tibiototalcalcaneal arthrodesis is an effective treatment for neglected talar dislocations, providing pain relief and functional improvement. Early surgical intervention is crucial to prevent long-term complications and achieve optimal outcomes. We report the functional results of case of a neglected subtalar dislocation in a 23-year-old man treated with open reduction and a tibiototalcalcaneal arthrodesis with a tibiototalcalcaneal nailing.

Introduction

The subtalar joint is a complex joint in the foot formed by the articulation of the talus, calcaneus, and navicular bone. Subtalar dislocations occur due to simultaneous dislocation of both talocalcaneal and talonavicular joints, without significant talus fracture. These dislocations are classified based on the position of the foot in accordance with the talus as medial, lateral, anterior, and posterior¹. Approximately 85% of these injuries involve the foot moving inward relative to the talus, which is called medial subtalar dislocation². Such dislocations usually result from high-energy injuries like falls from heights or car crashes, which twist the foot inward³. It is important to diagnose and treat these injuries promptly, as delays can lead to chronic pain, joint stiffness, arthritis, and long-term mobility issues⁴.

If subtalar dislocations are not treated within three weeks, they become neglected and more difficult to manage due to delays, which can lead to tightened soft tissues, scar tissue formation, and joint cartilage damage⁵. If we do not treat early, the foot's biomechanics can change, making treatment very challenging and increasing the likelihood of complications⁶. While new cases may be treated without surgery, neglected cases often require surgical treatments⁷. This might include procedures like open reduction and arthrodesis, which fuses bones to stabilise the foot and reduce symptoms⁷. Early diagnosis and treatment are crucial to avoiding severe long-term complications.

Clinical Presentation

A 23-year-old male visited Tibebe Ghion Specialised Hospital OPD after he sustained a fall from his standing position of 2 months duration. He sustained trauma to his right ankle area, which resulted in immediate pain, swelling, and deformity of right ankle

area. Following the trauma he immediately visited a local traditional bone setter and treated with a bamboo splint.

On presentation, he complains of swelling and deformity of the right ankle, failure to weight bear, and a pus draining wound on the lateral side of the right ankle.

Clinical Examination

On physical examination, there was right ankle swelling and club deformity, limited talotibial and subtalar joint range of motion, and discharge from lateral side of the ankle. (Figure 1)

Investigation

He was investigated with CBC, which shows normal value, ESR 5 mm/h and CRP < 1 mg/l. In addition, an ankle and foot x-ray and CT scan of the foot and ankle were performed; they show right medial subtalar dislocation with articular degenerative change. (Figure 2 & 3)



Figure 1: Clinical pictures during presentation show club deformity



Figure 2: Ankle and foot x-ray show talar dislocation with articular degenerative change



Figure 3: Foot and ankle CT scan show medial subtalar dislocation

Treatment

On initial presentation, he was diagnosed with fracture site infection. Even though the initial CBC, ESR and CRP were normal, there was pus discharge from the ankle area. Therefore, He was given PO ciprofloxacin 500 mg twice daily for 1 month and appointed for 1 month. On the next visit, the discharge disappeared, and the repeated CBC, ESR, and CRP were normal. Given the chronic nature of the injury and the degenerative changes, surgical intervention was deemed necessary. To achieve a stable and pain-free ankle, the patient underwent open reduction and tibiototalcalcaneal arthrodesis with a tibiototalcalcaneal nail using a Surgical Implant Generation Network standard nail. Open reduction and external fixation incorporated with K-wires was our alternative plan if internal fixation was difficult or there was gross infection intraoperatively.

Surgical Procedure

Written informed consent was taken from the patient. The patient was placed in the supine position. A standard extensile lateral calcaneal approach was used. In addition, a separate 4 cm incision was used over the talonavicular joint area to reduce the talonavicular joint. The tibiotalar, talonavicular, subtalar, and calcaneocuboid joints were exposed. After the joints were exposed, reducing the talus into the tibiotalar, subtalar, and talonavicular joints was difficult. Therefore, the contracted soft tissue was released, and articular cartilages and subchondral bone were debrided. As a result, the talus was reduced to its anatomic position. In addition, a separate 4 cm incision was used over the talonavicular joint area to reduce the talonavicular joint. A tibiototalcalcaneal nail was inserted through the calcaneus, talus, and tibia to achieve stable fixation. Additionally, two K-wires were inserted to hold the calcaneocuboid and talonavicular joint reduction. An Autologous bone graft harvested from the distal fibula was placed around the fusion sites to promote bone healing. Harvesting graft from the distal fibula allows for simultaneous exposure and graft preparation without additional incision and injury to other sites. The wound was closed in layers, and a sterile dressing was applied.

Postoperatively, the patient was discharged after staying

2 days in the ward and followed with at 2 weeks interval for the first 6 weeks and then after every 2 months. He was kept non-weight bearing for six weeks, followed by gradual weight bearing in a walking boot. The K-wire was removed at the 6th postoperative week. Radiographs were taken at regular intervals to monitor fusion progress. (Figure 4)

Outcome

At the six-month follow-up, the patient reported significant pain relief and was able to bear weight comfortably. Radiographs showed solid fusion at the tibiotalar and subtalar joints. The patient returned to light activities and was satisfied with the outcome. (Figures 5-8)



Figure 4: Clinical pictures show lateral extensile calcaneal approach (A) and a tibiototalcalcaneal nail insertion (B)

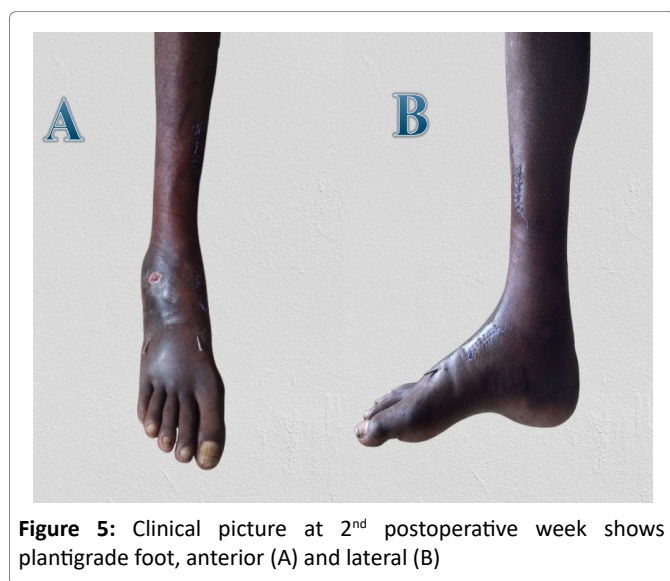


Figure 5: Clinical picture at 2nd postoperative week shows plantigrade foot, anterior (A) and lateral (B)

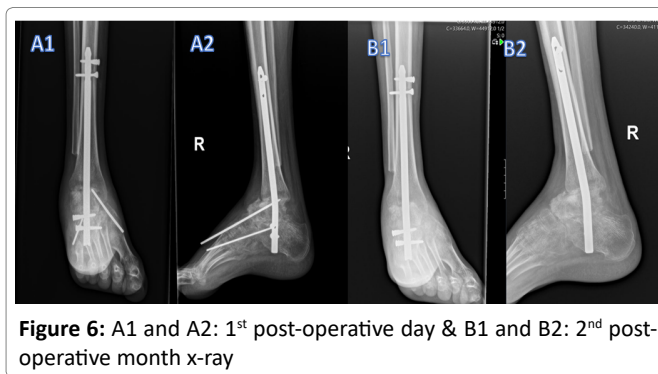


Figure 6: A1 and A2: 1st post-operative day & B1 and B2: 2nd post-operative month x-ray

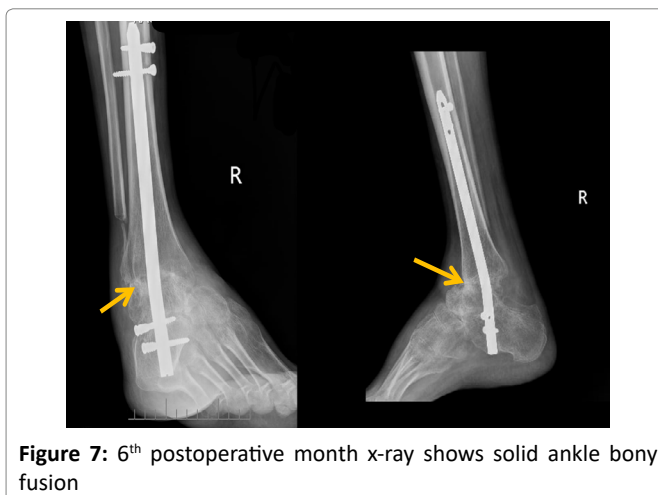


Figure 7: 6th postoperative month x-ray shows solid ankle bony fusion



Figure 8: Clinical picture of foot and ankle at 2nd postoperative month

Discussion

Neglected talar dislocations pose a significant challenge due to the high risk of complications. Tibiototalcalcaneal arthrodesis by using tibiototalcalcaneal nail provides a viable option for achieving a stable, pain-free ankle in such cases. This technique allows for immediate stability and promotes fusion across the affected joints.

Many case reports and series provide context for treating neglected subtalar dislocations. Sikora et al., described a case report of neglected medial subtalar dislocation with fracture of talus and calcaneus, treated with open reduction and arthrodesis, showing very satisfying functional outcomes⁸. Siddiqui et al., presented

a neglected medial peritalar dislocation treated with open reduction and K-wire fixation, stressing the importance of early physiotherapy for recovery⁹.

However, tibiototalcalcaneal arthrodesis is usually definitive, alternative methods may be considered. External fixation utilized in open or infected cases. It allows for soft tissue management and gradual correction. Bibbo et al., noted that up to 32% of subtalar dislocations need open reduction as a result of soft tissue blocks¹⁰. Stages procedures using distractive frames followed by arthrodesis can be useful in complex deformities or neuropathic joints cases^{11,12}.

Conclusion

Tibiototalcalcaneal arthrodesis by using tibiototalcalcaneal nail is an effective treatment for neglected talar dislocations, providing pain relief and functional improvement. Early surgical intervention is crucial to prevent long-term complications and achieve optimal outcomes.

References

1. Cheruvu MS, Narayana Murthy S, Siddiqui RS. Subtalar dislocations: Mechanisms, clinical presentation and methods of reduction. *World J Orthop.* 2023; 14(6): 379-86.
2. DeLee JC, Curtis R. Subtalar dislocation of the foot. *J Bone Joint Surg Am.* 1982; 64(3): 433-7.
3. Zimmer TJ, Johnson KA. Subtalar dislocations. *Clin Orthop Relat Res.* 1989(238): 190-4.
4. Christensen SB, Lorentzen JE, Krogsøe O, et al. Subtalar dislocation. *Acta Orthop Scand.* 1977; 48(6): 707-11.
5. Goldner JL, Poletti SC, Gates HS, et al. Severe open subtalar dislocations. Long-term results. *J Bone Joint Surg Am.* 1995; 77(7): 1075-9.
6. Merchan EC. Subtalar dislocations: long-term follow-up of 39 cases. *Injury.* 1992; 23(2): 97-100.
7. Wagner R, Blattert TR, Weckbach A. Talar dislocations. *Injury.* 2004; 35 Suppl 2: Sb36-45.
8. Cytowanie Sikora H. Chronic, Neglected Medial Subtalar Dislocation with Associated Talar and Calcaneal Fractures. A Case Report. *Ortopedia Traumatologia Rehabilitacja.* 2022; 24: 61-7.
9. Yasir Salam Siddiqui YS, Sabir AB, Siddiqui HQ. Neglected Peritalar Dislocation: A Case Report with Review of Literature. *Journal of Clinical and Diagnostic Research.* 2011; 5(4): 849-852.
10. B Cea. Subtalar dislocations: management and prognosis. *J Bone Joint Surg Am.* 2003.
11. Subtalar Dislocations - Trauma. *Orthobullets Summary* [Internet].
12. Subtalar Dislocation [Internet].