



## CASE REPORT

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**A Rare Case of Bilateral Non-Traumatic Subtalar Lateral Dislocation**

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Published September 22, 2025**KEYWORDS**Subtalar Dislocation;  
Posterior Tibial Tendon  
Dysfunction; Arthrodesis;  
Flatfoot**ABSTRACT**

**Introduction:** Subtalar dislocations are rare injuries, typically traumatic and involving both the talonavicular and talocalcaneal joints, accounting for less than 1% of all dislocations. Bilateral non-traumatic subtalar lateral dislocation is exceedingly rare and often results from posterior tibialis tendon dysfunction (PTTD).

**Case Presentation:** A 57-year-old woman with a remote mild ankle sprain presented with a 5-year history of bilateral ankle and foot pain and gait difficulty. Examination revealed flatfoot deformity, severe valgus and abduction of both feet, lateral heel displacement, and a medially palpable but reducible talar head (Figure 1). Radiographs and CTs confirmed bilateral lateral displacement of the calcaneus with dislocation of the talonavicular and talocalcaneal joints (Figure 2). Management included staged subtalar arthrodesis with talonavicular and calcaneotalar fixation using cannulated screws, plus tarsal tunnel spondyoplasty (Figure 3). Postoperative rehabilitation involved six weeks of casting, eight weeks of non-weight-bearing, and gradual mobilization with an ankle brace and physiotherapy. At follow-up, the patient reported significant pain relief and functional improvement, despite persistent flatfoot deformity (Figures 4–5).

**Conclusion:** Bilateral non-traumatic subtalar lateral dislocation due to PTTD is extremely rare. Subtalar arthrodesis can provide pain relief and functional improvement, though adjunctive procedures such as calcaneal osteotomy may be required to correct residual deformity.

**Keywords:** Subtalar Dislocation; Posterior Tibial Tendon Dysfunction; Arthrodesis; Flatfoot

**Introduction**

Subtalar dislocation is a rare injury, accounting for less than 1% of all traumatic dislocations. It typically results from high-energy trauma such as falls or motor vehicle accidents, with both the talonavicular and talocalcaneal joints disrupted [1,2].

Non-traumatic subtalar dislocations are extremely uncommon and usually caused by posterior tibialis tendon dysfunction (PTTD). This leads to medial arch collapse, peritalar subluxation, and in advanced cases, frank dislocation. Adult-acquired flatfoot deformity (AAFD) caused by PTTD has been the focus of recent surgical innovations, including various osteotomies and fusion techniques [3-7].

Here, we present a rare case of bilateral, non-traumatic subtalar lateral dislocation managed with staged subtalar arthrodesis, reviewing both surgical outcomes and contemporary literature.

**Case Report**

A 57-year-old female presented with chronic bilateral ankle and foot pain for five years, with progressive difficulty walking. She reported a mild ankle sprain 30 years earlier.

**Examination:** Bilateral flatfoot deformity, severe valgus deformity of both feet, lateral heel displacement, and a medially prominent, reducible talar head (Figure 1).



**Figure 1:** Preoperative Clinical Photograph Showing Bilateral Flatfoot Deformity with Severe Adduction And Medial Prominence of the Talar Head.

**Imaging:** Radiographs and computer tomography findings confirmed bilateral lateral displacement of the calcaneus with simultaneous dislocation of the talonavicular and talocalcaneal joints (Figure 2).

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**Figure 2:** Preoperative CT Demonstrating Lateral Displacement Of The Calcaneus and Dislocation of the Talonavicular and Talocalcaneal Joints.

**Treatment:** Staged surgery was performed:

- Right foot: Subtalar arthrodesis, fixation of talonavicular and talocalcaneal joints with cannulated screws, and tarsal tunnel spongioplasty.
- Left foot: Identical procedure six months later. Intraoperative approach is shown in Figure 3.



**Figure 3:** Intraoperative Image During Subtalar Arthrodesis with Cannulated Screw Fixation.

**Outcome:** At follow-up 4 months after surgery, the patient reported significant reduction in pain and improved ambulation. Clinical images showed improved alignment with residual flatfoot deformity (Figure 4), while postoperative radiographs demonstrated stable fusion (Figure 5).



**Figure 4:** Postoperative Clinical Photograph At 4 Months, Showing Improved Foot Alignment with Residual Flatfoot Deformity.



**Figure 5:** Postoperative Radiograph Confirming Stable Fusion

### Discussion

Subtalar dislocations are rare and usually traumatic. Non-traumatic presentations, particularly bilateral cases, are exceptionally uncommon<sup>3</sup>. PTTD is the key etiological factor, causing progressive hindfoot collapse and deformity [8-11].

Arthrodesis has been reported as a reliable method for stabilizing chronic lateral subtalar dislocation and reducing pain<sup>7</sup>. Our patient’s functional improvement aligns with findings from similar case reports. However, persistent flatfoot deformity reflects the limitation of fusion alone.

Recent literature suggests that combining fusion procedures with osteotomies may yield superior outcomes. Fischer et al. demonstrated that talonavicular arthrodesis combined with calcaneal displacement osteotomy provides results comparable to double arthrodesis. Hao et al. compared two calcaneal lengthening osteotomies in stage II AAFD, highlighting their corrective potential. Raes et al.<sup>12</sup> showed via 3D imaging that inframalleolar osteotomies improve subtalar alignment. Subtalar arthrodesis has also emerged as an alternative for alignment correction [12].

These studies emphasize that surgical planning should be individualized, with consideration of adjunctive procedures to correct alignment and improve long-term outcomes.

### Conclusion

Bilateral, non-traumatic subtalar lateral dislocation is an exceedingly rare manifestation of PTTD. Subtalar arthrodesis provides stability and pain relief, but adjunctive techniques such as calcaneal osteotomy may be required to correct flatfoot deformity. This case highlights the importance of individualized surgical management.

### Ethics Statement

The patient provided written informed consent for publication. The study was conducted according to the Declaration of Helsinki and institutional ethical guidelines.

### Conflict of Interest

The authors declare no conflict of interest.

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