

Medial Subtalar Dislocation Secondary to Low-Energy Trauma: A Rare Case Report

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Abstract

Case Report

Subtalar dislocation is a rare injury that usually results from high-energy trauma and is frequently associated with soft-tissue damage and osteochondral defects, which may compromise the long-term functional outcome. Computed tomography (CT) is recommended after reduction to detect associated osteochondral lesions that are easily missed on plain radiographs. We report an unusual case of medial subtalar dislocation secondary to a low-energy injury in a 34-year-old man, together with a review of the relevant literature.

Keywords: Subtalar dislocation; talus; osteochondral fracture; closed reduction; computed tomography.

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INTRODUCTION

Subtalar dislocation corresponds to the simultaneous dislocation of the talonavicular and talocalcaneal joints [1]. It is a rare injury, accounting for approximately 1% of all foot injuries and dislocations [7,15,16,21,22]. It occurs predominantly in young adult men [2,6,12,18,25–27] and usually follows high-energy trauma [2,15–18,22,33]. We report the case of a medial subtalar dislocation in a 34-year-old man following low-energy trauma, and we review the mechanism, management, and prognosis of this uncommon injury.

CASE REPORT

A 34-year-old man with no relevant medical history presented to the emergency department after a closed injury to his right ankle. The reported mechanism was a forced inversion of the foot in equinus following a misstep on a staircase.

On examination, the foot showed a characteristic “clubfoot-like” deformity together with a superficial abrasion over the lateral aspect of the ankle (Figure 1). The distal pulses were difficult to palpate, but capillary refill time and foot sensation were preserved.



Figure 1: Characteristic clinical deformity of a medial subtalar dislocation

Plain radiographs demonstrated a subtalar dislocation associated with a fracture of the base of the ipsilateral fifth metatarsal (Figure 2). Closed reduction was performed urgently under sedation, with the knee flexed to 90°. Traction was applied along the axis of the foot, first accentuating the deformity in equinus and

inversion, then reversing it into dorsiflexion and eversion. An audible reduction click was obtained, and the ankle was immobilized in a posterior splint after confirming vascular and neurological integrity as well as joint stability.

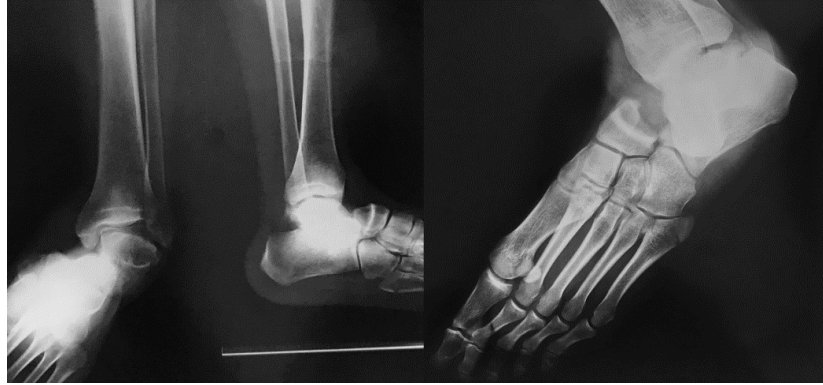


Figure 2: Radiograph showing a medial subtalar dislocation associated with a fracture of the base of the fifth metatarsal

Post-reduction radiographs confirmed a satisfactory reduction (Figure 3). A CT scan was then

obtained to assess joint congruence and, in particular, to look for osteochondral fractures (Figure 4).



Figure 3: Radiographic appearance after closed reduction by external maneuvers



Figure 4: Post-reduction CT scan showing satisfactory joint congruence without osteochondral fracture or intra-articular incarceration

The ankle was subsequently immobilized in a non-weight-bearing cast for four weeks.

At six months of follow-up, the course was complicated by type I complex regional pain syndrome

(CRPS), with no evidence of talar osteonecrosis on magnetic resonance imaging (MRI) (Figure 5). The patient continued to report pain on walking with stiffness of the subtalar joint.

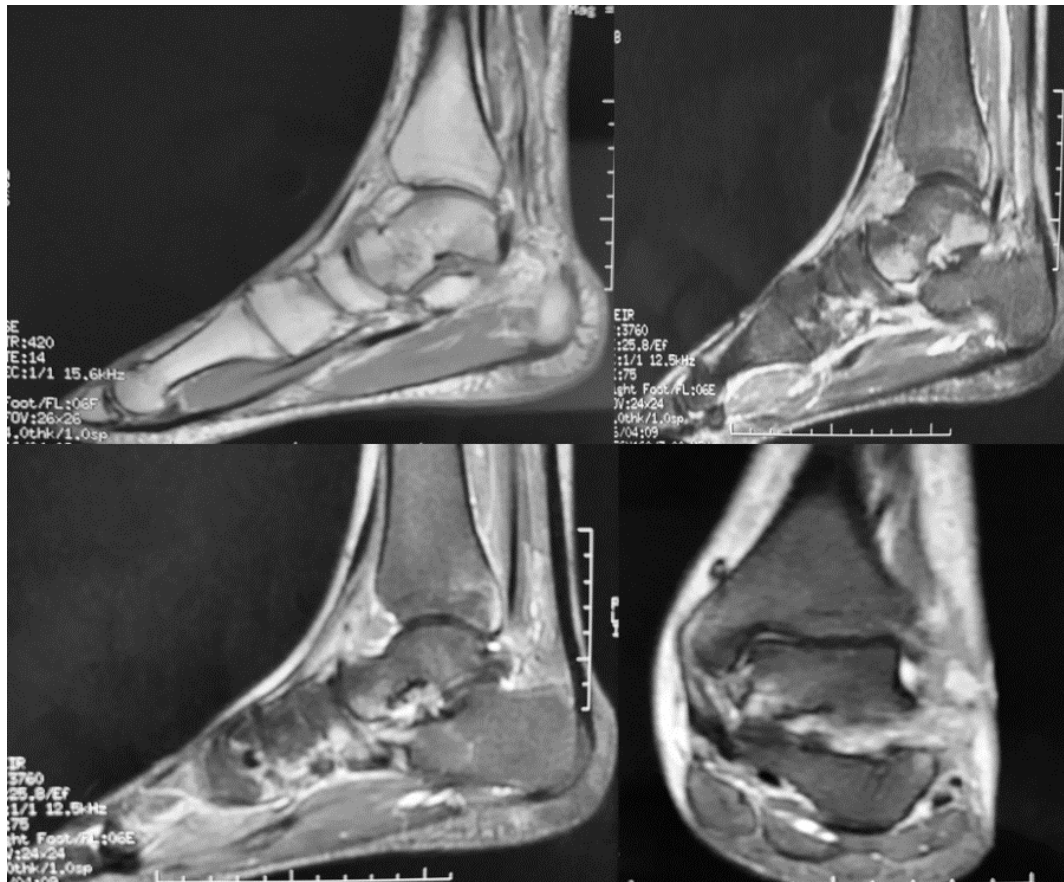


Figure 5: MRI at six months of follow-up showing bone edema consistent with type I complex regional pain syndrome

DISCUSSION

Pure subtalar dislocation is defined as the simultaneous dislocation of the talonavicular and talocalcaneal joints, without involvement of the calcaneocuboid joint and without an associated major fracture [1–8]. It is an extremely rare injury [2,6,9–14], accounting for about 1% of all foot injuries [10,11] and 15% of peritalar injuries [2,8,12]. Subtalar dislocation typically occurs in men [2,9,13,16] in the third decade of life [16], as in our patient, a 34-year-old man.

In 1853, Broca described three types of subtalar dislocation according to the position of the foot relative to the talus: medial, lateral, and posterior [17]. A few years later, Malgaigne [18] and Henke [19] described the anterior variant. The medial form is the most common, representing 80–85% of all pure subtalar dislocations, followed by the lateral (15–20%), anterior (1%), and posterior (0.8%) forms [2,11,16,18,20–23]. Our patient presented with the most common form, a medial subtalar dislocation.

Subtalar dislocations usually result from high-energy trauma [2,10–13,20], such as a fall from height [24,25], a road-traffic accident [13,20,22,25], or a sports injury [5,9,11]. This last mechanism is referred to as “basketball foot” in the medial forms [5,20]. In our case, the dislocation followed a misstep on a staircase — a low-energy mechanism reported only once previously in the literature [9].

The subtalar joint is stabilized laterally by the lateral talocalcaneal and calcaneofibular ligaments, and medially by the medial talocalcaneal and deltoid ligaments, which are stronger than their lateral counterparts [9,23]. This relative weakness of the lateral ligamentous complex makes the subtalar joint vulnerable in inversion and explains the higher frequency of the medial form [3].

Medial dislocations occur when the foot is fixed in equinus and forced into inversion [1,24,25]. The talar neck pivots around the sustentaculum tali, rupturing both the dorsal talonavicular ligament and the passive lateral stabilizers (Figure 6) [4,23–25,27].



Figure 6: CT images showing the talonavicular and talocalcaneal dislocation in a medial subtalar dislocation

This produces a talonavicular and talocalcaneal dislocation with medial displacement of the calcaneopedal block, while the talus remains within the ankle mortise and its head points laterally to the navicular [1–4,11,16,20,25]. If the deltoid or calcaneocuboid ligament also ruptures, talar enucleation or a peritalar dislocation, respectively, may occur [10,28].

Lateral subtalar dislocations, in contrast, occur with forced eversion of a foot fixed in equinus [24,26], causing the talus to pivot around the anterior process of the calcaneus [24]. The medial stabilizers rupture first, producing a talocalcaneal dislocation, followed by rupture of the dorsal talonavicular ligament and a talonavicular dislocation [24,29]. The calcaneopedal block then displaces laterally, while the talar head is carried posteriorly and medially [24].

Soft-tissue injuries — such as open wounds and vascular, nerve, or tendon damage — are uncommon and

are seen mainly in the lateral forms [11–13,23–25,30]. Goldner *et al.*, reported tibial nerve injury (a source of chronic pain) in 77% of lateral subtalar dislocations and rupture of the posterior tibial artery in 5% of cases [12]. The passage of the calcaneus beneath the talus during dislocation can also cause cartilage damage; Lancaster *et al.*, found such lesions in 67% of cases [31].

Clinically, subtalar dislocation presents as an “acquired clubfoot” [12,29] in the medial form and an “acquired flatfoot” [4,21,22] in the lateral form. These deformities may cause skin lesions and neurovascular compromise, which are better assessed once the dislocation has been reduced.

After plain radiographs confirm the dislocation, define its direction, and identify associated bone lesions, closed reduction by external maneuvers should be attempted urgently to relieve the skin tension over the talar head [3,10,17,26]. Lancaster *et al.*, reserve this approach for type I subtalar dislocations (Table 1) [31].

Table 1: Lancaster classification of subtalar dislocations

Classification	Description
Type I	Pure closed subtalar dislocation
Type II	Closed subtalar dislocation associated with soft-tissue injury and/or articular or extra-articular fractures
Type III	Open subtalar dislocation and/or talar neck fracture

Reduction is performed under general or spinal anesthesia. The knee and hip are flexed to 90° to relax the gastrocnemius and the calcaneal tendon [3,16]. Traction is then applied along the axis of the foot with counter-traction at the leg. The deformity is first accentuated (equinus and inversion for the medial form, eversion for the lateral form) and then reversed (dorsiflexion and eversion for the medial form, inversion for the lateral form); finally, digital pressure is applied to the talar head while maintaining traction until an audible

click confirms reduction [3,5,8,11,16]. The stability of the subtalar and Chopart joints is then tested, along with the neurovascular status [6]. In selected cases, transcaneal traction can facilitate reduction [8]. Sudden maneuvers, excessive traction, and repeated attempts should be avoided, as they may cause additional soft-tissue injury [25,26]. A control radiograph is obtained after applying a posterior splint to confirm the reduction [29]. No internal fixation is required after a stable reduction [3,21]; however, temporary talonavicular

and/or talocrural percutaneous pinning (K-wires) is useful when the dislocation is unstable [12,24,30].

In some cases, the dislocation is irreducible. This occurs in approximately 10% of medial dislocations and 15–32% of lateral dislocations [10,13,16], with different causes depending on the type. Irreducibility of the medial form is due to interposition of the peroneal tendons between the talus and the lateral malleolus [10], the extensor retinaculum or the extensor digitorum brevis [10,24], or bony fragments beneath the talus or in the talonavicular joint [29]. In the lateral form, irreducibility is caused by interposition of the tibialis posterior tendon or the flexor digitorum longus [10,11].

Irreducible subtalar dislocations require emergency open reduction, together with treatment of any osteochondral fractures by either excision or fixation of the fragments [11,16,25,26,30].

Occult fractures, osteochondral fractures, and peritalar lesions occur in up to 60% of cases [13]. They are missed in 39–88% of cases [7,9,11] and are difficult to identify on plain radiographs [11,16,21]. This underscores the value of post-reduction CT, which allows assessment of joint congruence and detection of associated osteochondral lesions [1,11,16,21,30] that determine the long-term prognosis [11,29].

The optimal duration of non-weight-bearing cast immobilization remains debated [1,11]. Most authors recommend 4–6 weeks, which does not appear to compromise the stability or mobility of the subtalar joint [1–4,22,23].

The prognosis of subtalar dislocation depends mainly on associated injuries, which are more frequent in the lateral forms [1,23,24,31]. Reported poor-prognosis factors include open injury [13,16,24], associated fractures, neglected dislocation, avascular necrosis of the talus [3,4,8,11,22,24,31], and high-energy trauma [1,20,24]. High-energy injuries are associated with poor functional results in up to 85% of cases, unlike dislocations following low-energy trauma [12,20], and especially pure forms reduced by external maneuvers, which retain good functional outcomes [3,11,25].

The main complication is stiffness of the subtalar joint. Immobilization for more than six weeks appears to promote stiffness and pain on walking through subtalar and peritalar fibrosis [1,8,20,24,25,29], whereas early mobilization or immobilization for less than four weeks may lead to subtalar instability due to inadequate ligament healing [34].

Other, rarer complications reported in the literature include avascular necrosis of the talus, subtalar osteoarthritis, skin necrosis, complex regional pain syndrome, and infection [7,8,11,23,32–34].

Avascular necrosis of the talus rarely complicates subtalar dislocation [2], particularly the medial form, because the talus remains within the mortise and its vascular supply is preserved through the deltoid branches of the posterior tibial artery and the dorsalis pedis artery [32]. It occurs in fewer than 10% of closed dislocations [2,12], although the risk increases with open injury or associated fractures [3,22].

Post-traumatic osteoarthritis occurs in 40–89% of subtalar dislocations [13]. It results from cartilage damage caused by the calcaneus sliding beneath the talus [11,24] and is more frequent in subtalar fracture-dislocations [30].

CONCLUSION

This case illustrates an unusual mechanism of a rare injury. Although subtalar dislocations most often follow high-energy trauma and are commonly associated with osteochondral fractures, they may occasionally result from low-energy injury. Urgent closed reduction is essential to minimize the risk of long-term complications, and post-reduction CT is mandatory to detect osteochondral fractures that may be missed on plain radiographs.

Informed Consent

Written informed consent was obtained from the patient for the publication of this case report and the accompanying images.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

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REFERENCES

1. Buckingham WW Jr, LeFlore I. Subtalar dislocation of the foot. *J Trauma*. 1973; 13:753–765.
2. Zimmer TJ, Johnson KA. Subtalar dislocations. *Clin Orthop Relat Res*. 1989; 238:190–194.
3. Jarde O, Trinquier-Lautard JL, Mertl P, Tran Van F, Vives P. Subtalar dislocations: à propos of 35 cases. *Rev Chir Orthop Reparatrice Appar Mot*. 1996; 82:42–48.
4. Merianos P, Papagiannakos K, Hatzis A, Tsafantakis E. Peritalar dislocation: a follow-up report of 21 cases. *Injury*. 1988; 19:439–442.
5. Gantsos A, Giotis D, Giannoulis DK. Conservative treatment of closed subtalar dislocation: a case report and 2-year follow-up. *Foot (Edinb)*. 2013; 23:107–110.
6. Prada-Cañizares A, Auñón-Martín I, Vilá y Rico J, *et al.*, Subtalar dislocation: management and prognosis for an uncommon orthopaedic condition. *Int Orthop*. 2016; 40:999–1007.
7. Gaba S, Kumar A, Triha V, Das S, *et al.*, Posterior subtalar joint dislocation without associated

- fracture: a case report and review of the literature. *J Clin Diagn Res*. 2017;11:RD01–RD02.
8. Ruhlmann F, Poujardieu C, Vernois J, *et al*. Isolated acute traumatic subtalar dislocations: review of 13 cases at a mean follow-up of 6 years and literature review. *J Foot Ankle Surg*. 2017; 56:201–207.
 9. Pesce D, Wethern J, Patel P. Rare case of medial subtalar dislocation from a low-velocity mechanism. *Eur J Emerg Med*. 2011; 6:121–124.
 10. Leitner B. Obstacles to reduction in subtalar dislocations. *J Bone Joint Surg*. 1954;36-A:299–306.
 11. DeLee JC, Curtis R. Subtalar dislocation of the foot. *J Bone Joint Surg Am*. 1982; 64:433–437.
 12. Goldner JL, Poletti SC, Gates HS, Richardson WJ. Severe open subtalar dislocations: long-term results. *J Bone Joint Surg Am*. 1995; 77:1075–1079.
 13. Bibbo C, Anderson RB, Davis WH. Injury characteristics and the clinical outcome of subtalar dislocations: a clinical and radiographic analysis of 25 cases. *Foot Ankle Int*. 2003; 24:158–163.
 14. Carret JP, Schnepf J, Augoyard M, Lerat JL. Luxation sous-astragaliennne et médiotarsienne (à propos de 46 observations). *Med Chir Pied*. 1984; 1:9–16.
 15. Krishnan KM, Sinha AK. True posterior dislocation of the subtalar joint: a case report. *J Foot Ankle Surg*. 2003; 42:363–365.
 16. Jerome JTJ, Varghese M, Sankaran B. Anteromedial subtalar dislocation. *J Foot Ankle Surg*. 2007; 46:52–54.
 17. Broca P. Mémoire sur les luxations sous-astragaliennes. *Mém Soc Chir (Paris)*. 1853; 3:566–656.
 18. Malgaigne JF. Die Knochenbrüche und Verrenkungen. Stuttgart: Rieger; 1856.
 19. Henke JW. Die Beweglichkeit des Fußes am Sprungbein. *Z Rationelle Med*. 1855; 7:225.
 20. Grantham SA. Medial subtalar dislocation: five cases with a common etiology. *J Trauma*. 1964; 4:845–849.
 21. Perugia D, Basile A, Massoni C, Gumina S, Rossi F, Ferretti A. Conservative treatment of subtalar dislocations. *Int Orthop*. 2002; 26:56–60.
 22. De Palma L, Santucci A, Marinelli M, Borgogno E, Catalani A. Clinical outcome of closed isolated subtalar dislocations. *Arch Orthop Trauma Surg*. 2008; 128:593–598.
 23. Inokuchi S, Hashimoto T, Usami N, Ogawa K. Subtalar dislocation of the foot. *Foot (Edinb)*. 1996; 6:168–174.
 24. Garofalo R, Moretti B, Ortolano V, Cariola P, Solarino G, Wettstein M. Peritalar dislocations: a retrospective study of 18 cases. *J Foot Ankle Surg*. 2004; 43:166–172.
 25. Specchiulli F, Gabrieli R, Di Carlo V, Maiorana B. Peritalar dislocations. *Foot (Edinb)*. 2007; 17:10–14.
 26. Conesa X, Barro V, Barastegui D, Batalla L, Tomas J, Molero V. Lateral subtalar dislocation associated with bimalleolar fracture: case report and literature review. *J Foot Ankle Surg*. 2011; 50:612–615.
 27. Marotte JH, Samuel P, Moati JC, Lord G, Bombart M. Subtalar dislocations with medial or lateral displacement (author's transl). *Rev Chir Orthop Reparatrice Appar Mot*. 1979; 65:377–385.
 28. Berkowitz MJ, Sanders R. Dislocations of the foot. In: Coughlin MJ, Saltzman CL, Anderson RB, editors. *Mann's Surgery of the Foot and Ankle*. 9th ed. Philadelphia: Elsevier Saunders; 2013. p. 1905–1972.
 29. Bohay DR, Manoli A II. Subtalar joint dislocations. *Foot Ankle Int*. 1995; 16:803–808.
 30. Wagner R, Blattert TR, Weckbach A. Talar dislocations. *Injury*. 2004;35(Suppl 2):SB36–SB45.
 31. Lancaster S, Horowitz M, Alonso J. Subtalar dislocations: a prognosticating classification. *Orthopedics*. 1985; 8:1234–1240.
 32. Brunet P, Dubrana F, Burgaud A, Le Nen D, Lefèvre C. Subtalar dislocation: review of ten cases at means ten-year follow-up. *J Bone Joint Surg Br*. 2004;86-B(Suppl):57.
 33. Rammelt S, Goronzy J. Subtalar dislocations. *Foot Ankle Clin*. 2015;20(2):253–264.
 34. Merchan EC. Subtalar dislocations: long-term follow-up of 39 cases. *Injury*. 1992;23(2):97–100.