Abstract: Subtalar dislocation refers to dislocation of distal articulations of talus at talocalcaneal and talonavicular joints. These dislocations are rare. Subtalar dislocations can occur in any direction. Medial dislocations are more common comprise up to 85. Lateral dislocations are rare and comprise up to 15. The direction of subtalar dislocation has important effects with respect to both management and outcome. Lateral dislocations are associated with higher-energy mechanisms and a worse longterm prognosis compared to medial subtalar dislocations. Closed reduction and immobilization remains the treatment of choice. The tibialis posterior tendon, talar head impaction, and entrapment of the joint capsule may cause difficulty in closed reduction of lateral dislocations which necessitates open reduction of lateral dislocations. This case report presents an unsuccessful closed reduction of a lateral subtalar dislocation with associated calcaneal fracture which required an open reduction technique using wire stabilization.

Keyword: Lateral subtalar dislocation, tibialis posterior tendon, open reduction

Introduction:
Subtalar dislocation is a rare foot injury, which disturbs the normal anatomy and function between the talus, calcaneus and navicular bone.1,3,4,8,9 The talocalcaneal and talonavicular joints can be dislocated simultaneously, without a fracture of the neck of the talus. This has also been referred to as a peritalar dislocation.2 There are basically two types of dislocations reported in the literature. In lateral subtalar dislocation, the head of talus is found laterally and the rest of the foot is dislocated laterally. In medial subtalar dislocation, the head of the talus is found laterally and the rest of the foot is dislocated medially.2,5 However, in a lateral subtalar dislocation, the talus can remain fixed while the remaining structures of the foot are dislocated laterally along the talus. So in any case of subtalar dislocation it is important to check the stability and congruity of the talus in the ankle mortise. Some dislocations may completely or even partially on its own. Subtalar dislocations present with a significant amount of deformity.

Medial dislocation have been referred to as acquired clubfoot, while lateral type referred as acquired flatfoot.5,9 Lateral dislocations are particularly prone for poorer outcome, due to the frequency of open injuries and associated fractures.2 We report a case of lateral subtalar dislocation with associated calcaneal fracture in a 26 years old male in whom closed reduction was unsuccessful hence open reduction was performed.

Case history:
A 26 years old male, presented to our hospital with alleged history of fall from a running train. He had tenderness in both feet. The right foot was diffusely swollen. The skin was distorted and markedly tented over the prominent head of the talus medially (fig: 1). The posterior tibial artery was not palpable due to severe swelling and the dorsalis pedis artery was palpable. On the left side, tenderness was present over the calcaneus. Radiographs showed that the foot along with calcaneum had moved laterally off the talus, calcaneal fracture and ankle subluxation on right side and calcaneal fracture on left side (fig: 2). Below knee slab was given for left side.

Fig 1: ‘Skin tenting’ in the medial side caused by entrapment of tibialis posterior tendon
Rarely, a subtalar dislocation is reported to occur in a direct anterior lateral to the talus and the talar head is prominent medially.2,8 University Journal of Surgery and Surgical Specialities

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Discussion:
Dislocations around talus are usually associated with major fractures of talus. However dislocations can occur with no associated fractures or relatively minimal appearing fractures.2,6 First described by Judcy and Dufauret9in 1811, clinical reviews of subtalar dislocations are relatively infrequent and limited to small number of patients. Subtalar dislocation can occur in any direction and associated with significant deformity. Up to 85% of the dislocations are medial. Calcaneus with rest of the foot is displaced medially while the talus head is prominent medially and associated fractures or relatively minimal appearing fractures.2,6

In lateral subtalar dislocation, the calcaneus and navicular is displaced lateral to the talus and the talus head is prominent medially.2,8 Rarely, a subtalar dislocation is reported to occur in a direct anterior or posterior direction,4,9 but these are usually associated with medial or lateral displacement as well.

Fig: 2: Radiograph showing lateral subtalar dislocation, calcaneal fracture and ankle subluxation. Initially closed reduction was attempted and it was unsuccessful. Hence the patient was prepared for open reduction. Anterolateral approach was used. Longilongitudinal incision made just proximal to the ankle joint to the cuboid. Superficial peroneal nerve branches identified and protected. Tendons of extensor digitorum longus and extensor hallucis longus retracted medially and the peroneus tertius tendon retracted laterally. The talus and midtarsal joints exposed (fig: 3). The capsule over the head of the talus incised and subtalar joint space reached. A periosteal elevator inserted into the subtalar joint.

By leverage, adduction and inversion of the foot the dislocation was reduced. After reduction the skin tenting on the medial side found was reduced. Ankle mortise examined and the foot found stable. Two K wires inserted from the calcaneus to tibia along the talus (fig:4). Below knee slab was applied Post-operative radiographs showed reduced joint. Calcaneal fracture was made out in the post-op radiograph which was undisplaced, so planned to treat conservatively. Drain removed after 48 hours and below knee cast with window was applied.

Fig: 3. Antero lateral approach showing extensor and peroneal tendons

Fig: 4. Post operative radiograph showing reduced joint with K wires

References: