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Interposition of Tibialis Posterior and Flexor Digitorum Longus Tendons Resulted in Irreducible Ankle Fracture-Dislocation

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ABSTRACT

Irreducible ankle fracture-dislocations are very rare entities. The present case report demonstrates an unusual finding of tibialis posterior and flexor digitorum longus tendons interposed in the tibiofibular joint impairing successful closed reduction of ankle fracture-dislocation. A 45-year-old patient presented with a bimalleolar pronation-external rotation ankle fracture-dislocation after a motorcycle accident. Attempts to perform closed reduction before surgery were unsuccessful. Subsequent urgent open reduction and internal fixation surgical management revealed interposition of the tibialis posterior and flexor digitorum longus tendons in the tibiofibular joint. In irreducible fracture-dislocation of the ankle with severe lateral displacement of the talus, one should be aware of the possibility of soft tissue interposition of the tibialis posterior and flexor digitorum longus tendons in the tibiofibular joint.

The incidence of ankle dislocations is less than that of ankle fractures (11.5 versus 71 per 100,000 people annually). An associated fracture will be present in about 94% of ankle dislocations or subluxations. Ankle fracture-dislocations are more common in older females (1,2).

Almost all ankle fracture-dislocations will be initially reducible in the emergency department using closed reduction techniques. On rare conditions, soft tissue or bone interposition can obstruct closed reduction. Entrapment of fracture fragments or dislocation of the fibula, either anteriorly or posteriorly to the ankle joint, can result in an irreducible tibiotalar fracture-dislocation (3–5). The soft tissue structures include the deltoid ligament (6), tibialis posterior tendon (7–14), tibialis anterior tendon (15), and extensor digitorum tendon (6), all of which can prevent closed reduction of ankle fracture-dislocations. In the present case, we describe an irreducible ankle fracture-dislocation due to interposition of the tibialis posterior and flexor digitorum longus tendons in the ankle syndesmosis and tibiotalar joint. The study was performed at Bone and Joint Diseases Research Center, Department of Orthopedic Surgery, Shiraz University of Medical Sciences, Iran, in collaboration with the Department of Orthopedic Surgery, Dalhousie University, Canada.

Case Report

A healthy 45-year-old male motorcyclist presented to the emergency department with bilateral painful ankles. An obvious deformity

Fig. 1. Anteroposterior radiograph of the left ankle showing minimally displaced medial malleolus fractures.

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Conflict of Interest: None reported.

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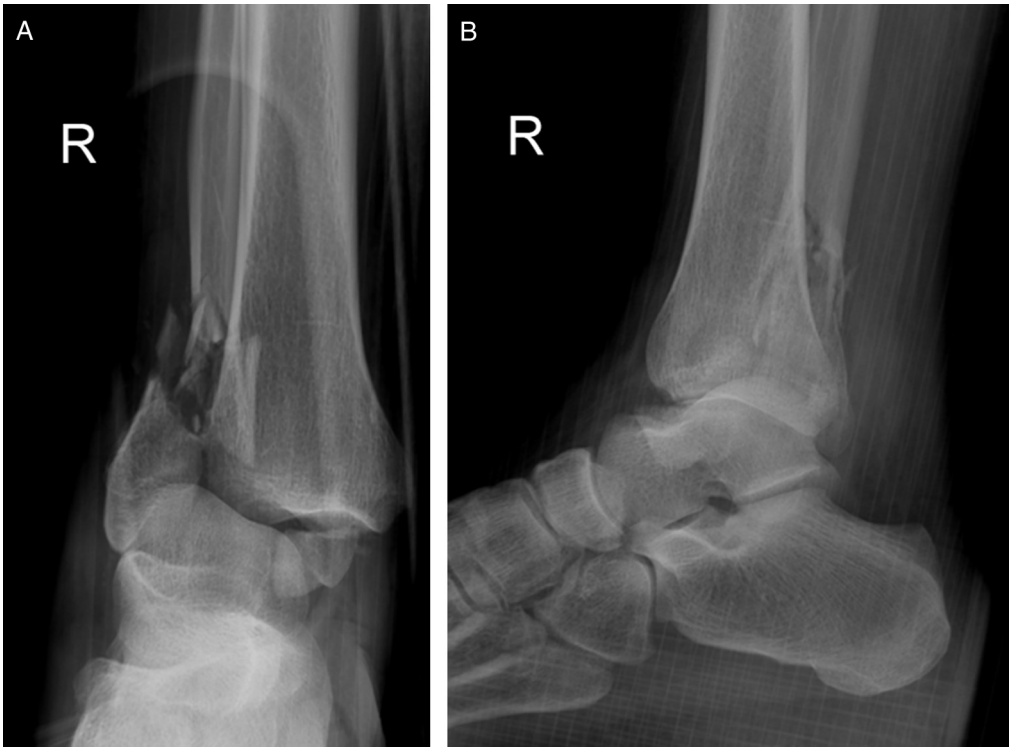

Fig. 2. (*A*) Anteroposterior and (*B*) lateral radiographs of right ankle fracture-dislocation.

with significant tension on the medial soft tissues of right ankle was noted, without any laceration indicative of an open fracture. The left ankle examination showed tenderness on the medial side. The neurovascular status of both feet was intact. The left ankle plain radiograph revealed a minimally displaced medial malleolus fracture (Fig. 1). The right-sided radiograph revealed an ankle fracture-dislocation characterized by a transverse fracture of the medial malleolus, a comminuted fracture of the lateral malleolus classified as type C Danis-Weber, subluxation of the tibiotalar joint, a lateral shift of the talus, and a completely disrupted syndesmosis (Fig. 2). The injury was categorized as pronation-external rotation in accordance with the Lauge-Hansen classification. With the patient under conscious sedation, adequate closed reduction of the right ankle fracture-dislocation was impossible; thus, it was placed in a short leg slab. To find any obstacle such as a possible free bone fragment in the joint, a computed tomography scan was requested. The computed tomography scan displayed multiple small bone fragments between the tibia and fibula without an incarcerated fragment in the tibiotalar

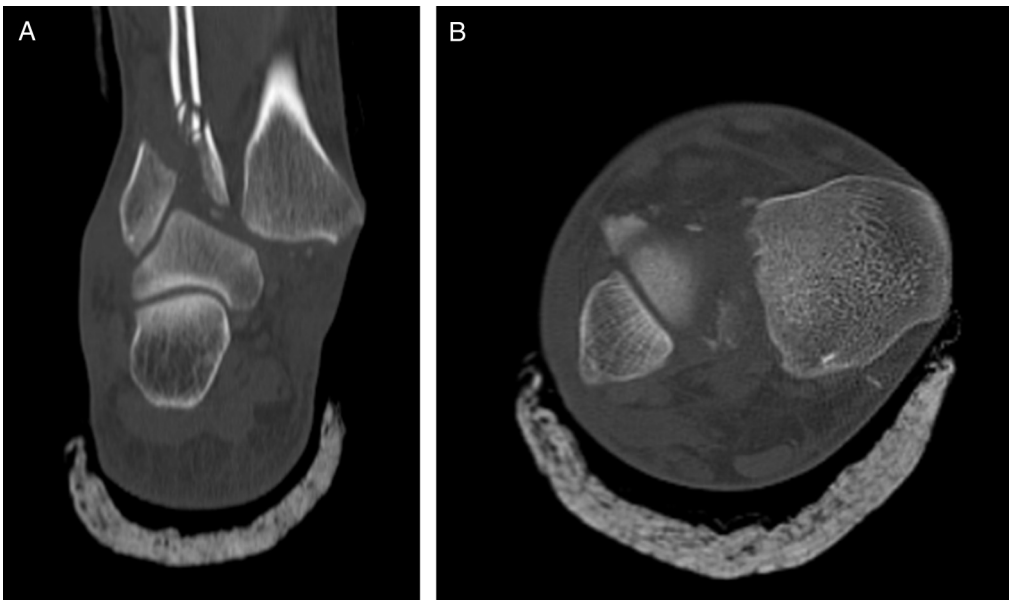

Fig. 3. (*A*) Coronal and (*B*) axial cuts of an ankle computed tomography scan showing comminuted fracture of the fibula with multiple small fragments between the tibia and fibula.