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Lateral Hindfoot Impingement After Nonunion of Fracture of the Lateral Process of the Talus

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ABSTRACT

Fracture of the lateral process of the talus is a relatively uncommon ankle injury, and the diagnosis is easily delayed. Lateral hindfoot impingement is characteristically related to chronic hindfoot valgus malalignment, with lateral ankle pain localized to the subtalar region. In a review of the published data, lateral hindfoot impingement after nonunion of fracture of the lateral process of the talus was not found. We present the case of a patient with such an injury. The patient was treated operatively and was followed for 18 months.

Fracture of the lateral process of the talus has historically been an unusual injury. However, the incidence has been much greater in patients with snowboarder's talus fractures (1). It has often been missed or confused with a lateral ankle sprain, which can cause nonunion, malunion, and subtalar joint osteoarthritis in long-term untreated cases (2). We describe a rare case of lateral impingement syndrome that occurred after nonunion of a fracture of the lateral process of the talus. The importance of the long-term sequelae of misdiagnosis and subtalar fusion is emphasized.

Case Report

A 52-year-old male had experienced left lateral ankle pain for 37 years. He had hurt his ankle during a side-thrust kicking action while playing with a friend, sustaining forced eversion and a dorsiflexion impact to his left ankle when he was 15 years old. Left ankle pain and swelling were noted immediately; however, the symptoms had subsided within a few days. As an adult, he was a heavy physical laborer. The lateral ankle pain had become progressively aggravated, in particular when lifting heavy materials, and he had difficulty squatting. No improvement in symptoms had been noted after conservative treatment in recent years.

On physical examination, he had a left flat foot, a bunion, local tenderness in the lateral subtalar joint, and positive findings on a heel rise test. The subtalar joint mobility was restricted compared with the right side. A plain radiograph showed pes planus, sclerotic changes, and radiolucent lesions at the talar neck (Fig. 1). Magnetic resonance

Fig. 1. Lateral foot standing radiograph revealing sclerotic changes and radiolucent lesions at the talar neck. The calcaneal pitch angle was 11° and the talar-first metatarsal angle was >4°, compatible with pes planus.

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Fig. 2. (*A* and *B*) Sagittal T_1-weighted and T_2-weighted images demonstrating bone marrow edema at the lateral process of the talus and the adjacent calcaneus. A subcortical intraosseous cyst had formed at the lateral talus. (*C*) Coronal T_2-weighted image showing a severe hindfoot valgus angle of 30°. (*D*) Coronal T_2-weighted image revealing a focal linear fracture of the lateral talus and subcortical bone marrow edema at the talocalcaneal and calcaneofibular regions. (*E*) Computed tomography image revealing a focal linear fracture and subcortical cyst of the lateral talus.

imaging and computed tomography of the left ankle revealed a hindfoot valgus angle of around 30° (>26° indicates greater severity), focal osteosclerosis, intraosseous cyst formation, a linear fracture of the lateral talus, edema at the lateral aspect of the tarsal sinus, mild subluxation of the peroneal tendons, and bulging posterior synovial cyst formation behind the ankle joint. The posterior tibialis tendon was intact (Fig. 2). Because of the finding of nonunion of the fracture of the lateral process of the talus with lateral hindfoot impingement and hallux valgus, he underwent subtalar fusion and a Chevron procedure under general anesthesia in the supine position (Fig. 3). A