

**Case Blog** 

# Nonunion of the Posteromedial Tubercle of the Talus: Interest of SPECT/CT

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Recieved date: June 14, 2016; Accepted date: August 04, 2016; Published date: August 11, 2016

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#### Abstract

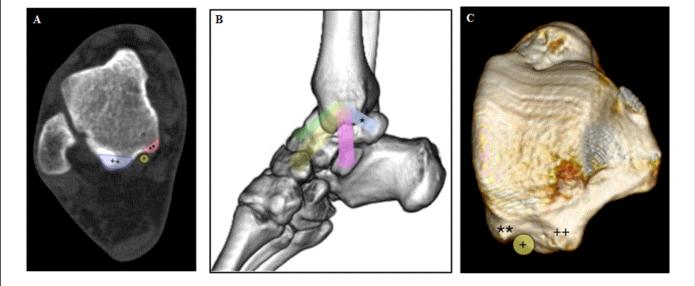
We report the case of an isolated fracture of the posteromedial tubercle of the talar process caused by a posterior tackle in a football player, which is an unusual and misdiagnosed fracture leading to a nonunion causing a chronic ankle pain. To our knowledge, this is the first reported case demonstrating the major interest of SPECT/CT to diagnose an unusual nonunion of the posteromedial tubercle of the talus.

**Keywords:** Cedell's fracture; SPECT/CT; Posteromedial tubercle; Talus, Nonunion; Scintigraphy

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The below mentioned case of talar fractures are very rare [1] and first case was described by Cedell in 1974 [2]. Rogosic et al. [3] found 26 cases available in 17 reports through PubMed. Misdiagnosing can

lead to complications in early phase: there is a risk of interposition of the tendon of the flexor hallucis longus. (FHL (+)) running in the groove of the posterior process when the bone fragment involved is large, preventing closed reduction [4]. There is also a risk of future subtalar joint arthritis because undersurface of posterior process constitutes around 25% of the posterior articular facet of the subtalar joint [5]. Moreover, no appropriate treatment goes on to develop painful nonunion for several years [6].

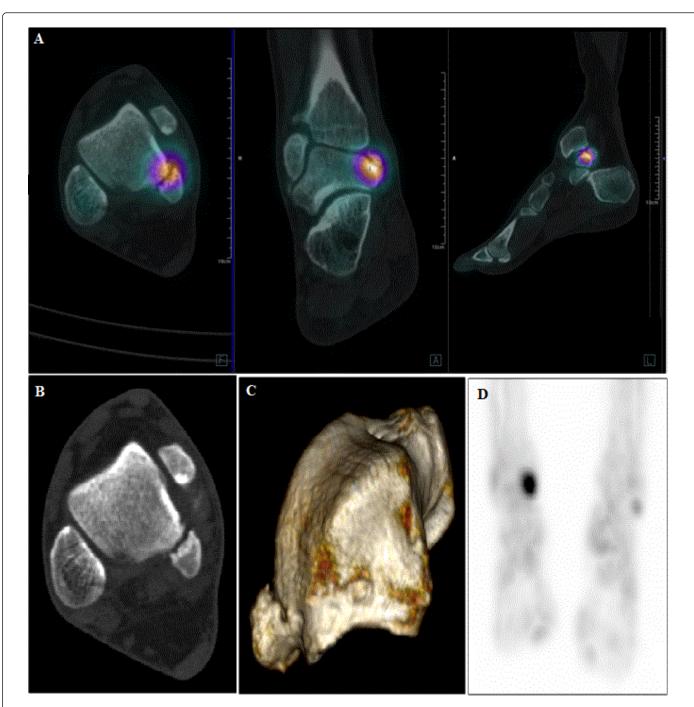


**Figure 1:** The posterior process of the talus is composed of two tubercles (a): posterolateral tubercle (++) and posteromedial tubercle (\*\*), where inserts the posterior talotibial ligament (\*) (b): Talar fractures are unusual and fractures of the medial tubercle are even rarer. (c): (FHL (+)) running in the groove of the posterior process when the bone fragment involved is large, preventing closed reduction.

A 18-year-old man was directed to our nuclear department for SPECT/CT 99mTc-MDP imaging to explore a chronic right ankle and rearfoot pain subsequent to a posterior tackle while playing football 13 months earlier. Radiographs performed after trauma did not reveal fracture. Van Tongel et al. [7] had previously described the same fracture in planar bone scan ans Kanbe et al. [8] on computed tomography.

To our knowledge, this is the first reported case demonstrating the major interest of SPECT/CT to diagnose an unusual nonunion of the posteromedial tubercle of the talus.





**Figure 2:** Bone scan showed uptake on an interface (a) with irregular ossification (b) separating the internal side of the posterior process of the talus from a well mineralized nondisplaced hypertrophic bone fragment (c) measuring  $15 \times 13 \times 18$  mm, revealing hypertrophic nonunion evolution of a fracture of posteromedial tubercle of the talus (d) in SPECT/CT expresses very active bone remodeling, even long after the trauma, reflecting an unfavorable evolution of an unrecognized fracture and explaining the pain.

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