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## Case Report

# Intra-articular osteoid osteoma of the calcaneus: a case report and review

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### ABSTRACT

Osteoid osteoma of the calcaneus is rare and frequently misdiagnosed as arthritis because of similar symptoms. In addition, radiographic findings may be nonspecific, and magnetic resonance imaging (MRI) may show a bone marrow edema and changes in adjacent soft tissue. A 19-year-old man presented with a 6-month history of persistent pain and swelling in the left hind foot; diagnostic computed tomography and MRI analyses revealed lesions suggesting an intra-articular osteoid osteoma of the calcaneus. Initial MRI did not show specific findings. On operation, the tumor was removed by curettage; pathologic findings demonstrated woven bone trabeculae surrounded by connective tissue, confirming the diagnosis. To the best of our knowledge, MRI scans in all cases of calcaneal osteoid osteoma reported till 3 months after the injury exhibited a nidus. We believe that calcaneal osteoid osteoma should be considered as a differential diagnosis in patients undergoing MRI 3 months after symptom presentation; early computed tomography is critical in diagnosis.

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## Introduction

Osteoid osteoma accounts for approximately 11% of all benign bone tumors and is usually found in children and young adults [1]. It causes localized pain that typically peaks at night and has to be resolved with aspirin or other nonsteroid anti-inflammatory drugs (NSAIDs) [2]. In over 50% of cases, the tumor localizes in the femur and tibia, whereas in 4% of cases, it occurs in the foot and ankle region [3,4].

Osteoid osteomas are usually found in the cortex of the shaft of long bones and have a characteristic radiographic and clinical appearance [5]. Furthermore, osteoid osteoma in the hind foot may exhibit less reactive sclerosis which may often lead to misdiagnosis. When osteoid osteoma develops in the hind foot, there is often a delay in diagnosis as it mimics other, more frequently occurring pathologies. This is a report of a rare case of intra-articular osteoid osteoma of the calcaneus in a young male who was initially misdiagnosed with stress fracture and subtalar arthritis.

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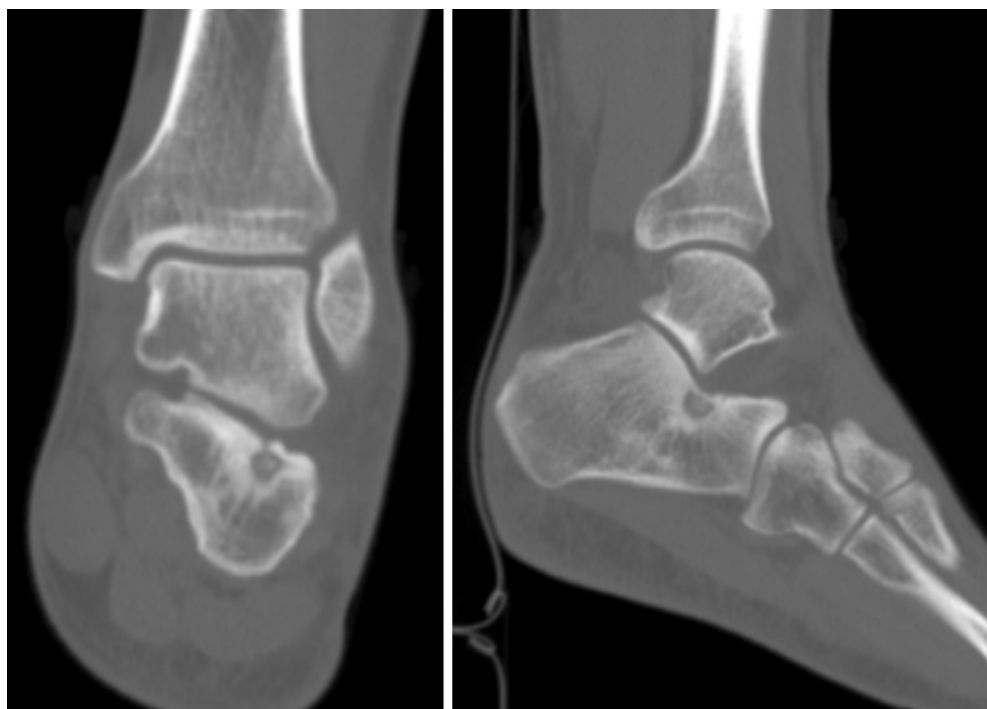


**Fig. 1** – MRI performed 4 months after the onset of symptoms. Coronal and sagittal T2-weighted MRI showing bone marrow edema of the calcaneus and development of arthritis.

### Case report

A 19-year-old man presented with a 6-month history of persistent pain and swelling in the left hind foot. He was recreational tennis player, with no previous history of trauma or any medical conditions. Initial magnetic resonance imaging

(MRI) of the foot performed at the family doctor's clinic did not show any abnormality compared with the other foot, except for bone marrow edema of the calcaneus. Under a possible diagnosis of stress fracture in the calcaneus, he was treated with NSAIDs and physiotherapy. Since these conservative treatments had no effect, he consulted a hospital 4 months after the onset of initial symptoms. Here, T2-weighted MRI



**Fig. 2** – CT performed 6 months after the onset of symptoms. Coronal and sagittal CT showing the nidus with a sclerotic rim.

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