

Osteoid osteoma of the talus: a case report

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ABSTRACT

Diagnosing osteoid osteomas in the small bones of the hands and feet is difficult because of their atypical presentations. We report an 8-year-old boy who presented with pain in the left ankle and a limp. Plain radiographs of the ankle and foot were normal; the diagnosis was eventually made using magnetic resonance imaging.

Key words: ankle; osteoma, osteoid; talus

INTRODUCTION

Osteoid osteomas are benign circumscribed tumours of spongy bone occurring most often in the bones of the extremities and vertebrae of young people. They are often missed in the small bones of the hands and feet because of their atypical presentations. Common causes of ankle pain in children are trauma, infection,

juvenile chronic arthritis, osteochondrosis, and tumours. Early diagnosis of osteoid osteomas enables early treatment and avoids unnecessary suffering and late complications such as contractures.

CASE REPORT

In May 2002, an 8-year-old boy presented with a 4-month history of pain in the left anterior ankle joint on exertion and at night, with vague swelling and tenderness over the dorsal talus. He had been limping for the past 6 weeks and had no fever or history of trauma. Dorsiflexion of the ankle was terminally limited, but the subtalar joint and heel inversion when standing on his toes were normal.

Blood investigations revealed a haemoglobin level of 130 g/l, a total white cell count of $8 \times 10^9/l$, an erythrocyte sedimentation rate of 14 mm/h and a C-reactive protein level of <5. The rheumatoid factor was negative. The patient was initially treated with activity modification, non-steroidal anti-inflammatory drugs, and a walking cast, but the symptoms persisted.

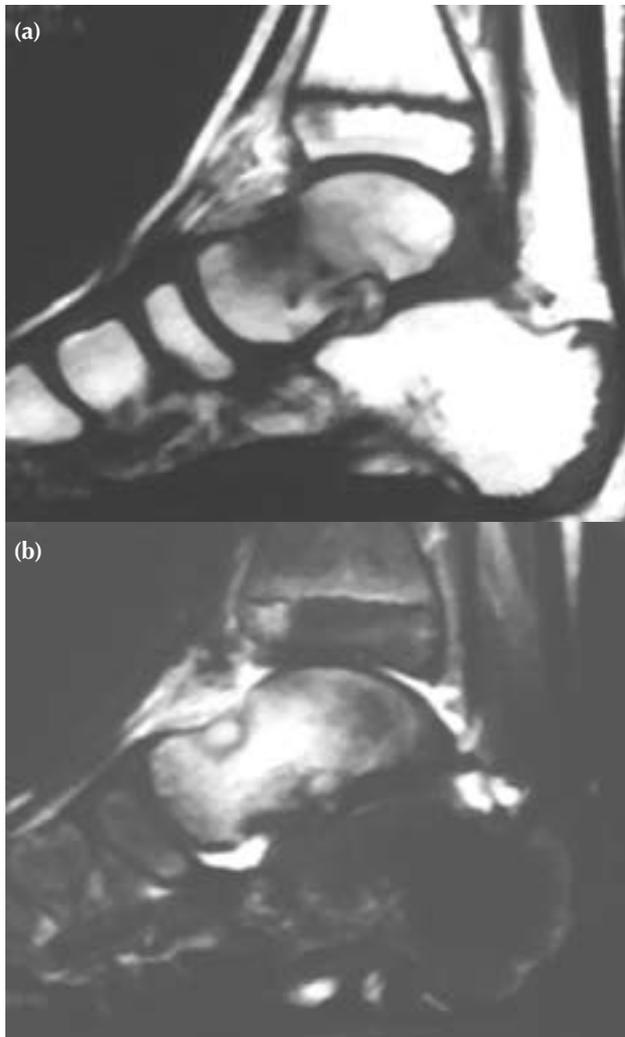


Figure 1 Magnetic resonance images of the ankle showing an increased signal in T2-weighted imaging and a decreased signal in T1-weighted imaging suggestive of a benign lesion.

Six months later, the joint was aspirated under anaesthesia, and 2 ml of straw-coloured fluid showed no organism after Gram staining. A culture grew no organisms and the white cell count of $<2 \times 10^9/l$ was suggestive of non-specific synovitis.

Plain radiographs of the ankle and foot were normal. Bone scans revealed an increased uptake in the talus. Computed tomographic (CT) scans showed a small lesion over the superior talus but this was missed by the radiologist and treating doctor. Magnetic resonance images revealed an increased signal in T2-weighted images and decreased signal in T1-weighted images and increased enhancement with gad, suggestive of a benign lesion (Fig. 1).

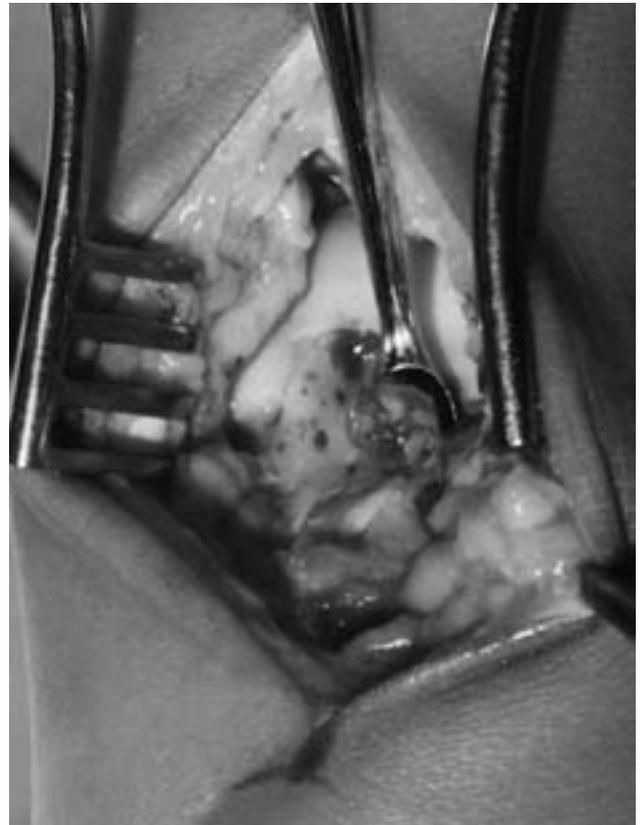


Figure 2 Exploration of the ankle through an anterolateral approach showing irregularity over the superior talar neck suggestive of an intra-articular osteoid osteoma.

The left ankle was surgically explored through an anterolateral approach (Fig. 2). The sensory branch of the musculocutaneous nerve was preserved. The superior talar neck was irregular and was easily curetted. The wound was closed in layers. The ankle was held in a neutral position in a slab.

Histopathological examination showed abundant osteoid in a fibrovascular stroma. The trabeculae were rimmed by prominent osteoblasts with no mitotic activity. The diagnosis of osteoid osteoma was confirmed. At the one-year follow-up, the patient was asymptomatic and had no recurrence.

DISCUSSION

The most common presenting symptom of osteoid osteomas is pain in the diaphysis of the long bones (femur or tibia). Radiologically they present as diaphyseal lesions (nidi) of <10 mm surrounded by extensive sclerosis.¹ The lesions may eventually

become asymptomatic after a mean of 3 years of non-operative treatment,² but most diaphyseal lesions require surgical excision. Other modalities of ablation include radiofrequency ablation under CT or ultrasound guidance,³ laser photocoagulation,⁴ laser-guided interstitial thermal therapy, cryo-ablation, and ethanol injection. Nonetheless, these modalities are not applicable to atypical osteoid osteomas as biopsy tissues cannot be obtained.

Atypical osteoid osteomas have different clinical and radiological findings and are rarely seen in feet.⁵⁻⁹ They are usually seen as osteoid osteomas of small bones or juxta- or intra-articular osteoid osteomas. Their non-specific features include synovitis,

stiffness, joint contractures or scoliosis. Sclerosis is not apparent on plain radiographs. Because of variable clinical presentations and the lack of radiological findings, the diagnosis is very often delayed (for 6 to 24 months).^{10,11} When suspected, bone scanning followed by magnetic resonance imaging is essential.

In a case of osteoid osteoma of the left ankle,¹² radiographs and magnetic resonance images appeared normal. The diagnosis was based on the results of a triphasic bone scintigraphy followed by CT.

Diagnosing osteoid osteomas in the small bones of the hands and feet is difficult. Early diagnosis enables early treatment and avoids unnecessary suffering and late complications such as contractures.

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