SHORT REPORT

Pathological fracture of the talar neck associated with amyloid deposition

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We present the case of a 61-year-old man who attended our accident and emergency department in January 2007 complaining of pain in his right ankle region. He reported feeling a "crack" in his right foot while walking at home, without any history of trauma. He subsequently developed right heel pain and could only bear weight on his toes. He also reported suffering from longstanding pain in his right ankle, albeit of lesser severity, for the last 3 years. A previous magnetic resonance imaging (MRI) scan of his right ankle, performed in 2004, showed amyloid deposits in the talus but no evidence of cortical discontinuity to suggest a fracture.

The patient suffered from Waldenström's macroglobulinaemia and systemic AL amyloidosis. Amyloid deposition in his kidneys resulted in chronic renal failure requiring maintenance dialysis. He was a non-smoker, otherwise well and not taking any regular medications except calcium supplements.

The initial clinical examination revealed bruising and swelling of the hind foot and tenderness over the talar neck on palpation. Ankle and subtalar movements were pain-free. The skin was not endangered, and there was no distal neurovascular compromise.

Anteroposterior and lateral radiographs of the ankle showed a minimally displaced talar neck fracture. An MRI scan confirmed the presence of amyloid deposits in the calcaneum and distal tibia as well as a fracture through a deposit on the talar neck, with no involvement of the subtalar, tibiotalar or talonavicular joints (fig 1).

A biopsy of the talar neck was carried out to confirm the diagnosis before commencement of radiotherapy. Histopathological examination of bone and synovial tissue specimens showed extensive infiltration by amorphous eosinophilic material (fig 2) with Congo Red positivity, confirming the diagnosis of amyloid deposits.

Figure 1 Magnetic resonance image of the ankle showing extensive amyloid deposits in the distal tibia and calcaneum, as well as the fracture through a deposit at the talar neck. The subtalar, tibiotalar and talonavicular joints are congruent.

Figure 2 Histological examination of the specimen showing extensive infiltration by amorphous eosinophilic material.

Non-operative management yielded satisfactory results, with the patient being asymptomatic and able to mobilise full weight bearing 4 months after the diagnosis.

DISCUSSION

The talus is an infrequently fractured bone, accounting for only 0.5% of all skeletal injuries and 3% of foot fractures.¹ Talar neck fractures account for 50% of all talar injuries² and are commonly associated with other injuries such as medial malleolar and calcaneal fractures. Pathological fractures through amyloid deposits are uncommon and the vast majority occur in the femoral neck. To our knowledge, no amyloid related pathological fractures of the talus have been reported in the English literature.

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