

Calcaneal Intraosseous Lipoma: A Case Report

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Abstract

This case report is presented to increase awareness among clinicians about the existence of this rare cause of calcaneal pain. Intraosseous lipoma is a rare, benign primary tumour occurring in the bone. We report a 40-year-old lady who presented with the history of one week old trauma with pain in the lateral aspect of right ankle which was clinically diagnosed to be right lateral collateral ligament sprain. The radiographs of the right ankle and heel incidentally revealed a lytic lesion. The patient had no symptoms persisting to foot and heel. MRI of right foot was suggestive of calcaneal stage 2 intraosseous lipoma. In view of the subchondral location of the lesion, prophylactically the lesion was treated with curettage and bone grafting to prevent the pathological fracture. The post-operative radiographs demonstrated continued remodelling and healing of the graft site. The patient was followed up on an OPD basis and made a full recovery with good patient compliance. Even though this tumour is rare, there is a need for physicians to recognize its radiological findings and offer the appropriate treatment options. It is also important for primary care physicians to be aware that there are other causes of heel pain than the common suspects.

Keywords: Intraosseous lipoma, Heel pain, Lytic lesion, Benign primary tumour

Introduction

Heel pain is a common presentation among patients in the primary care setting. Most of the causes are degenerative or inflammatory in nature. Most presentations are due to tendoachilles tendinitis, plantar fasciitis, stress fracture or arthritis. The location of the pain itself may cause significant daily activity impairment. Intraosseous lipoma is a rare, benign tumour in the calcaneum.

Case Report

A 40-year-old lady who presented with the history of trivial trauma to the right ankle 1 week back, Pain was confined to the ankle, aggravated on walking and partially relieved by rest.

On examination tenderness noted in the lateral aspect of ankle with restriction of terminal range of movements i.e. dorsiflexion and plantar flexion there were no palpable lymph nodes in the inguinal region.

Blood investigation showed no signs of infection or inflammation.

X-ray of the ankle with heel revealed a lytic lesion in the

subchondral region of the calcaneum. X-ray of both heel lateral and axial view were done based on the incidental lytic lesion.

MRI of right ankle was suggestive of calcaneal intraosseous lipoma.

In view of subchondral location of the lesion impending pathological fracture, prophylactic surgery was advised.

Per operatively the lesion was found to be multiloculated with greyish white fatty tissue inside. The lesion was curated and the cavity was filled with cancellous allograft.

A histopathological examination confirmed the diagnosis of lipoma.

Post operatively, Patient's limb was immobilized in a below knee plaster of paris slab and regular dressings were done.

The wound healed uneventfully and sutures were removed after 14 days. The slab was removed after 3 weeks and partial weight bearing was started. Protected Full weight bearing was started at 6 weeks and the patient was able to return to her daily activities

Discussion

This tumour constitutes 0.1% of benign bone tumours and has a prevalence of 8% in the calcaneus bone [1]. The first case report of calcaneal lipoma was published in 1955 in a child [2]. There is no gender preponderance, and this type of tumour is commonly seen in the fourth decade of life. It may occur in any bone; nonetheless, the proximal femur is the most common site (34%) [1, 3]. Most of the cases are asymptomatic; however,

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Figure 1: X-ray of both heel lateral and axial view showing the lytic lesion

symptoms such as pain, are seen when the lesion is in the calcaneum. Intraosseous calcaneal lipoma is usually located between the anterior and middle third of the calcaneum, also referred to as the neutral triangle. This area is devoid of the trabecular network crossing the calcaneum [4].

As most patients are asymptomatic, its diagnosis is made incidentally on a routine plain radiography, computed tomography (CT) scan or MRI [5]. Identification of the fat component signal on MRI is diagnostic of an intraosseous lipoma on the basis of the high signal intensity on both T1- and T2-weighted sequences, and obvious signal reduction on fat suppression images [6,7].

The definite diagnosis is still made through histopathological examination. Therefore, it is mandatory that the clinical and radiological findings and biopsy be correlated. The differential

diagnoses which must be ruled out include a non-ossifying fibroma, a bone cyst, a bone infarct, a giant cell tumour or even a metastatic bone tumour. In the case of an asymptomatic patient with suspicion of malignancy or impending fracture, surgery has to be considered. Intraosseous calcaneal lipoma ‘of critical size’ has been defined as a lesion extending the full breadth of the calcaneus in the coronal plane, and occupying $\geq 30\%$ of the anteroposterior length of the calcaneum [8]. Curettage and bone grafting is the surgical option of choice.

The bony defect or cavity can be filled and packed with bone, hydroxyapatite or polymethylmetacrylate (bone cement) [9, 10, 11].

Even though this tumour is rare, there is a need for physicians to recognize its radiological findings and offer the appropriate treatment options.

Conclusion

it is important for primary care physicians to be aware that there are other causes of heel pain than the common suspects. And, also to understand the vital importance of routine radiography in our practice and its role not to be undermined for patients presenting with trauma irrespective of the nature injury.

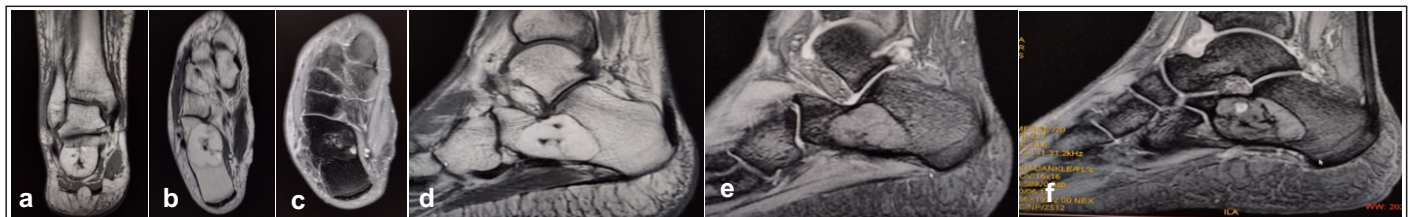


Figure 2: MRI of right ankle showing the intraosseous lipoma (2 a) coronal section of MRI showing the hyper intense lesion in the calcaneum, (2 b) axial section showing the hyper intense area, (2 c) STIR hypointense lesion, (2 d) sagittal section showing the hyperintense area, (2 e) calcaneum showing area of central calcification, (2 f) subtle enhancement of the lesion on post contrast study

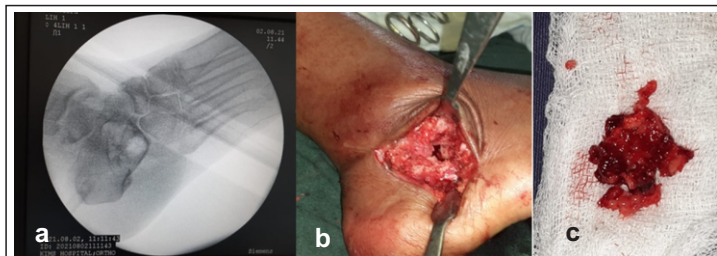


Figure 3: intraoperative images- (a) Fluoroscopic image showing the lesion (b) clinical image (c) curated material

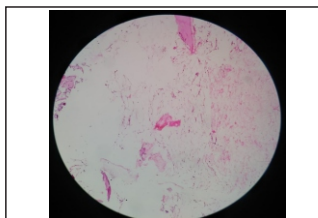


Figure 4: histopathological image showing the intraosseous lipoma



Figure 5: follow up X-ray at 8 weeks showing consolidation of the graft

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Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the Journal. The patient understands that his name and initials will not be published, and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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