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Bone Lipoma of the Calcaneus: An Exceptional Cause of Talalgia

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Abstract

Introduction: *Bone lipoma is a rare, benign, and usually silent tumor. We describe here a calcaneal intra osseous lipoma revealed by mechanic heel pain and discuss clinical, radiological and therapeutic features of this affection.*

Case Report: *A 45-year-old woman presented with chronic mechanic pain of the right heel for six months. There was no history of trauma and analgesics were not efficacy. Physical examination was normal. Laboratory investigations were within normal limits. Conventional radiographs of the right calcaneus showed a 1×1.5 cm sharply defined lytic lesion with sclerotic margins. Computerized tomography detected a central low-density (-117 H) calcaneal mass without complications. Surgical treatment was indicated under the patient insistence and histopathological features confirmed the diagnosis of intra osseous lipoma.*

Conclusion: *Intra osseous calcaneal lipoma is rare. Progress in imagery, especially computed tomography and magnetic resonance made easy the correct noninvasive diagnosis of this unusual lesion.*

Keywords: *intraosseous lipoma, calcaneus, talalgia, bone, tumor.*

Introduction

First described by Wehrsig in 1910 [1], intraosseous lipoma is an extremely rare benign tumor [2-5]. It represents only 0.1 to 2.5% of all primary bone tumors [6-8], making it the rarest primary bone tumor [4].

These tumors remain classically asymptomatic [3,4] and are discovered incidentally on routine radiological examinations [4,9,10], thus explaining the fact that their frequency is increasingly noticed.

Modern imagery; in particular, magnetic resonance imaging (MRI) has greatly facilitated their diagnosis, thus avoiding the need for aggressive diagnostic methods.

We report a rare and symptomatic localization of this exceptional bone tumor.

Case Report

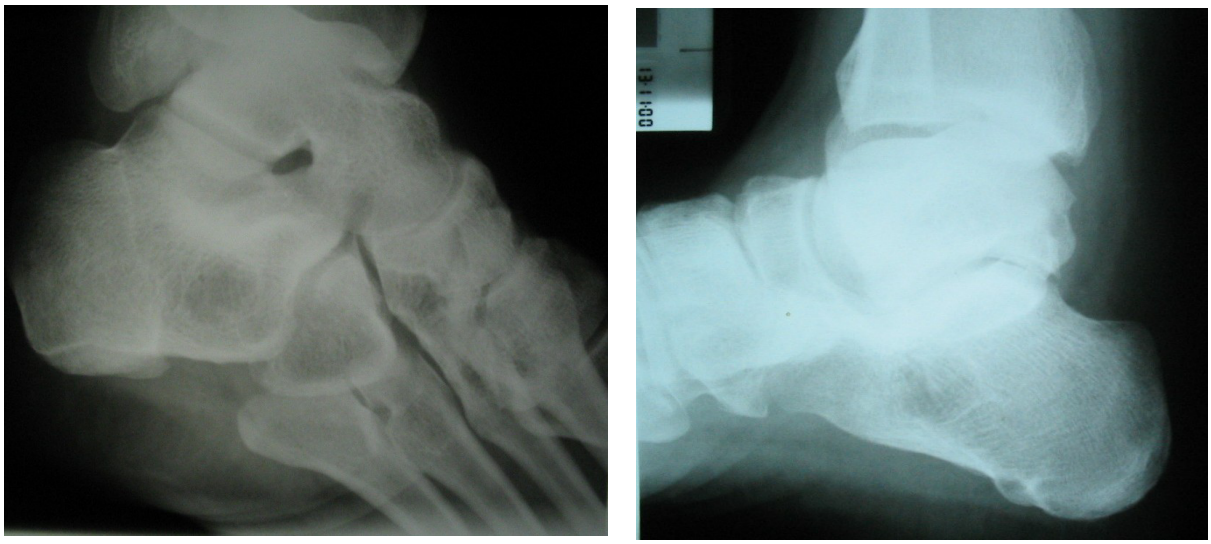
A 45-year-old female patient with no pathological medical history was admitted for mechanical right talalgia.

These complaints had progressed for more than six months, with no notion of local trauma, and were not improved by symptomatic medical treatment.

The clinical examination was unremarkable. The biology did not show any significant abnormalities. The standard X-ray of the right forefoot noted the presence of a well-defined, oval intracalcaneal lacunar image, 1.5 cm in diameter, and well surrounded by peripheral osteosclerosis (Fig 1). The CT scan showed a well-defined intracalcaneal lacunar lesion, measuring 1 / 1.5 cm in diameter, of fatty density (-117 HU), heterogeneous, and surrounded by a fine peripheral osteosclerosis compatible with the diagnosis of an intraosseous lipoma (Fig 2a, 2b and 2c).

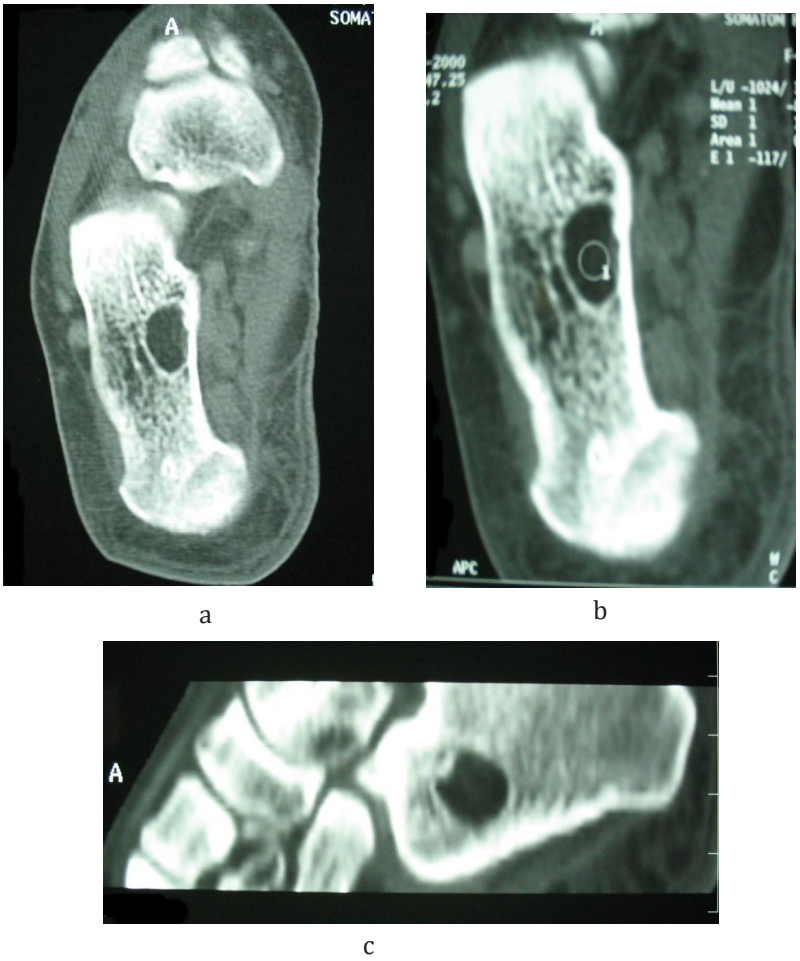
Given the repercussions on activities of daily living and the lack of improvement under medical treatment, the patient was operated on with complete resection of the bone lesion, without complications.

Histological examination confirmed the diagnosis of bone lipoma of the calcaneus.



a b

Fig1. *Standard x-ray of the right calcaneus in lateral internal (a) and external (b) view: well-defined intracalcaneal lacunar lesion surrounded by peripheral osteosclerosis.*



a b

c

Fig2. *CT scan of the right foot in axial slices (a and b) and in sagittal reconstruction (c): well-limited intracalcaneal lacunar lesion, of fatty density (-117 HU), and surrounded by a fine peripheral osteosclerosis.*

The evolution was quickly favorable with disappearance of the walking pains after one month postoperatively.

Long-term follow-up over seven years did not show any local or contralateral recurrence..

Discussion

The calcaneus represents the fourth location of fatty tumors: proximal femur (34%), tibia (21%), fibula (10%), calcaneus (8%) etc. [10] and this is explained by certain characteristics of this bones allowing the development and growth of these tumors; in particular a large medullary space and a rich vascularization [11-13]. The calcaneal involvement can be exceptionally bilateral [3,4,11,13]

These tumors remain asymptomatic for a long time [3,4,9] and their natural evolution is towards spontaneous involution by processes of infarction, calcification, cystic transformation [4,10,14] or intratumoral bleeding [15,16]. Malignant transformation remains a possible but exceptional possibility [10].

A few cases of symptomatic calcaneal lipomas revealed by chronic mechanical, non-traumatic talalgia, and resistant to nonspecific analgesic treatments have however been reported [3,15]. Intraosseous ischemic lesions as well as bone remodeling induced by tumor expansion could explain the pain associated with bone lipomas [10]. The clinic can sometimes be obvious with misleading presentations that can even mimic a plantar faciitis; especially in bilateral forms [3].

The physical examination is usually non-contributory; rarely pain can be caused by deep palpation of the heel [17]. Likewise, the biology is classically normal [17]. The positive diagnosis of this condition remains in the field of medical imaging, especially since the advent of CT and MRI [2,4,9,18].

Indeed, the histological proof, formerly necessary for the definitive diagnosis of these tumors is now replaced by CT and MRI which make it possible to avoid biopsy for diagnostic purposes. MRI remains particularly interesting for the diagnosis of intraosseous lipomas complicated by recent intra-tumor hemorrhage [15].

Standard bone radiographs may miss these lesions, especially if they are small [3,10]. Thus, it is currently recommended to systematically complete with a CT scan of both feet in any patient reporting non-traumatic mechanical talalgia with an X-ray showing an intra-calcaneal lytic lesion suggestive of lipoma so as not to overlook an infra-radiological contralateral involvement [3].

Therapeutic abstention is classic for these tumors given their often asymptomatic character [10,13]. Surgical treatment is only indicated for large lipomas that are symptomatic and resistant to medical treatment or complicated by pathological fractures [7,8,10].

It is a simple surgery that can be done under general or even local anesthesia [19]. It consists of complete curettage of the lesion followed by filling the residual cavity with a bone graft [13].

Currently, endoscopic resection is as effective as conventional surgery even in bilateral forms of calcaneal lipoma [11].

Surgery may be indicated preventively for large calcaneal lipomas given the high potential risk of pathological fracture [11,19].

Conclusion

As rare as it is, intraosseous lipoma of the calcaneus should be kept in mind as a possible diagnosis of any non-traumatic mechanical heel pain that is unproven and / or does not respond to symptomatic analgesia.

A CT scan should be performed even if the standard bone X-ray is normal given the possibility of infra-radiological forms.

Surgical treatment is not the rule but if ever indicated it is a simple surgery with very satisfactory results.

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