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Case Report

Intraosseous lipoma of the iliac: case report☆

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ABSTRACT

Lipomas are benign tumors that attack fat cells and most often affecting soft tissues in adulthood. On rare occasions, they may affect bones, preferentially the metaphyses of the long bone. They are generally asymptomatic and radiography shows radiolucent lesions with a thin sclerotic rim or radiodense lesions with a thick sclerotic rim. Malignant transformation of these tumors is rare, as is their recurrence, and there is no need for surgery in most cases. In this report, we present a rare case of intraosseous lipoma in the iliac bone.

Lipoma intraósseo do ilíaco: relato de caso

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RESUMO

Os lipomas são tumores benignos que acometem células adiposas, mais comumente afetam os tecidos moles na idade adulta. Raramente podem afetar os ossos, preferencialmente metáfises dos ossos longos. São geralmente assintomáticos, na radiografia verifica-se lesão radiotransparente, com uma fina borda esclerótica ou lesão radiodensa com uma espessa borda esclerótica. A transformação maligna do tumor é rara, assim como a recorrência, sem necessidade cirúrgica na maioria dos casos. Neste relato apresentamos um caso raro de lipoma intraósseo do ilíaco.

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Introduction

Lipomas are benign tumors that affect adipose cells. They most commonly affect soft tissues in adulthood and are rare in bones.[1] The incidence of intraosseous lipomas is approximately 0.1% among all primary bone tumors and it is believed that they do not preferentially affect either sex. The age group affected is very wide, and cases can be found both among children and among elderly people. They are most commonly diagnosed in the fourth decade of life. Their etiology remains unknown and is a matter of controversy.[2]

Intraosseous lipomas may affect any part of the skeleton and are most frequently located in the transtrochanteric region of the proximal femur (34%), tibia (13%), fibula (10%), calcaneus (8%), iliac bone (8%) and humerus and ribs (5%). They preferentially affect the metaphyses of long bones and present as single lesions. However, reports of multiple tumors scattered around the entire skeleton have been made.[3]

Lipomas present few symptoms. Pain is the commonest of these, and the absence of specific symptoms may cause difficulty in making the diagnosis. There is a need for the aid of imaging examinations. However, once the lipoma has been found, the prognosis is generally good and a full cure can be achieved.[4] The objective of this study was to report on a rare case of intraosseous lipoma of the iliac.

Case report

The patient was a 45-year-old man who reported having insidious pain in his right hip that had started three months earlier. It was unrelated to trauma and did not have any specific characteristics. The pain score on a visual analogue scale (VAS) was 5/10, and it improved through use of non-steroidal anti-inflammatory drugs and worsened with slight effort.

Physical examination did not show any limitation of movements of the pelvis, lumbar spine or right hip. Radiography was then performed on the pelvis in anteroposterior view. A circumferential osteolytic lesion in the wing of the right iliac, of approximately 3 cm in diameter, with well-defined edges, was observed (Fig. 1A). Because of the nonspecific nature of the image obtained through radiography, tomography with three-dimensional reconstruction was requested. A lesion affecting the posterior cortical bone of the wing of the right iliac could be seen (Fig. 1B).

A coronal slice for a bone window (Fig. 2A) and an axial slice for a soft-tissue window (Fig. 2B) showed that the lesion extended through the medullary tissue, from the anteromedial to the posterolateral region of the right iliac bone. In this region, there was fracturing of the cortical bone, of osteolytic and insufflative nature.

Bone scintigraphy with technetium was performed and did not show the lesion (Fig. 3A and B), which suggested that the lesion was of benign nature. To complement the evaluation, magnetic resonance was performed on the pelvis. In this, T1 coronal imaging showed a lesion with hyposignal, without invasion of soft tissues (Fig. 4A). T2 coronal imaging of the pelvis (Fig. 4B) showed a lesion with hypersignal in the right iliac.

Thus, the patient underwent surgical curettage of the tumor in the wing of the right iliac bone, which showed fatty tissue with adipocytes, without atypia, in a firm whitish-brown fragment of 2.8 cm, with bone tissue comprising thickened sclerotic trabeculae, hematopoietic cellular tissue, extensive adipose replacement and absence of signs of malignity in the material. The suspicion of benign tumor formation was thus confirmed and it was diagnosed as an intraosseous lipoma. Around three months after the procedure, the patient no longer presented pain and there was no recurrence of the lesion.

Discussion

Intraosseous lipoma is a rare benign type of bone tumor. It mainly affects the metaphysis of long bones and is asymptomatic in approximately half of the cases.[5,6] It affects the sexes almost equally, such that it is slightly more prevalent among males.[6] It occurs in all age groups, and it slightly more prevalent in the fourth and fifth decades of life.[5] Involvement of the iliac bone is even rarer.[6,7]

Dhalin calculated the incidence of intraosseous lipomas as one in every 1000 bone tumors.[8] However, the incidence may be greater because of the difficulty in diagnosing cases of this type of lipoma. It is common for such diagnoses to be made accidentally through imaging examinations.[5,9]

The first report of intraosseous lipoma of the iliac bone was made by Buckley and Burkus[10] in 1988. Since then, due mainly to development of diagnostic techniques, the number of cases of intraosseous lipoma reported has increased. Nonetheless, a location in the iliac bone continues to be extremely rare.[11]

When intraosseous lipomas are symptomatic, they may generate clinical manifestations such as pain, local swelling and pathological fractures.[5,6] The lack of signs and symptoms differs intraosseous lipomas from other bone tumors and this is a difficulty that is found in diagnosing this type of tumor.[5,7] Its etiology is a matter of controversy.[9] However, there are reports in the literature of patients with hyperlipoproteinemia and macrodystrophia lipomatosa who developed multiple intraosseous lipomas.[12,13] Sauer and Ozonoff[14] demonstrated a possible relationship between congenital bone abnormalities and lipomas. Another reason why diagnosing intraosseous lipomas may be difficult, which has been reported in the literature, is that its radiological images may be confounded with bone infarction, osteoblastomas and, more rarely, enchondromas.[9]

According to Milgram's classification, intraosseous lipomas are divided into three stages. Stage I comprises solid tumors with viable adipocytes; stage II comprises cases of focal transition in which fatty necrosis and focal calcification are seen, along with regions with viable adipocytes; and lastly, stage III consists of late-stage cases in which there is fatty necrosis, cyst formation, calcification and reactive formation of a new bone structure. Most of the lesions that have been described are in stage I. These stage changes result from a process of involution and infarction that these lesions undergo with the passage of time.[6] Lesions at the initial stages cause reabsorption of the bone trabeculae that existed previously.[15]