CLINICAL CASE

Bone lipoma: case report and review

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KEY WORDS

Bone lipoma;
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Abstract Bone lipomas are infrequently in the current dairy medical practice, those tumor represent 0.1% of all bone tumors. Aetiology is unknown and surgery is the best treatment. In this tumors is necessary to do a relation physical - radiological and histopatological and, in this way is necessary to known a prognosis about them tumors. The bone tumors do not develop symptoms in general, its tumor become evident when we ask for a TC or radiography near to some articulation with pain or other clinical signal. This tumors can miss diagnosticated with other bening bone tumors. We present this case because is anecdotal in a female patient 67 years old. (creativecommons.org/licenses/by-nc-nd/4.0/).

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CLINICAL CASE

This is the case of a 67-year old female patient with a 3-year history of chronic knee pain that was exacerbated since 3 weeks prior, which prompted seeking medical care. Plain radiographies demonstrated an irregular, radiopaque and radiolucent (mixed) lesion with a sclerotic halo on the left tibia proximal diaphysis. The patient referred no family or personal history of malignancies, and as important comorbid condition, an 8-year history of type 2 diabetes mellitus on medical treatment with acceptable control was reported.

The metastatic bone survey demonstrated that the tibial lesion was single. A mammography was ordered, which demonstrated a Breast Imaging-Reporting and Data System (BIRADS) score of 2. Physical examination was negative. Laboratory tests such as blood count, blood chemistry, liver function tests and coagulation times showed no alterations outside the ranges regarded as normal. The lesion was not evident on physical examination.

Performing a curettage-biopsy, covering the defect with bone cement, was decided. Pathology final result reported a mature bone lipoma. The patient has had a 14-month postoperative period free of symptoms and with good functional status (Fig. 1-6).

INTRODUCTION

Bone lipomas account for 0.1% of all bone tumors and can develop in all bones of the human body. The first description was made in 1880^{1,2}. Seventy percent of these lesions are located in the lower limbs and, owing to their rareness, they

Figure 1. Bone tumor.

Figure 2. Bone tumor lateral view.

Figure 3. Bone lipoma, adipocytes.

Figure 4. Intraosseous adipocytes.

Figure 5. Defect repair with bone cement.

Figure 6. Defect repair with bone cement lateral view.

are confused with other entities such as non-ossifying fibroma, simple bone cyst, aneurysmal bone cyst, bone fibrous dysplasia, giant-cell tumor, bone infarcts and chondroid tumors. Radiologic imaging is unspecific and it can be mixed up with other benign tumors^{3,4}.

Bone tumors histopathological correlation is decisive in oncologic clinical practice for diagnostic certainty, and performing a clinical-radiological-histopathological assessment will allow for the clinical behavior of the disease to be known, and intervening the best way will be possible in order to establish adequate disease control.

Unspecific bone lesions generally warrant histopathological correlation, and leaving them without treatment or diagnosis is feasible, but on a very cautious and individualized basis^{5,6}.

Being a radiologic finding on tomography or plain radiography, it is described as an osteolytic or mixed irregular lesion with a sclerotic halo and can occur at any bone. There is no predilection for occurrence between males and females, but some authors refer it predominates in males^{4,7}.

These lesions are symptomatic when they involve any innervated structure by contiguity or when there is direct compression of nerve roots^{2,8}.

DISCUSSION

The etiology of these lesions is unknown, but they are probably originated by adipose cells intramedullary located within the bone. It can occur in all bones, including the facial skeleton and the skull^{9,10}.

One author proposes that there are three types of lipomas that affect the bone: soft-tissue lipomas, which secondarily can invade the bone by pressure-induced growth, parosteal lipomas, which stem from the underlying periosteal bone and damage the bone by direct invasion, and intraosseous lipomas, which originate in bone tissue of the medullary cavity¹¹.

The diagnosis is often established by means of radiographies obtained in the assessment of joint pain close to the tumor. Clinical presentation can be with pain, swelling or hypoesthesia, depending on the site and size of the lesion. Symptoms can be the result of bone remodeling owing to expansion or intralesional ischemia.

Milgram proposed a classification for bone lipomas:

- Stage I: tumor with viable adipose cells.
- Stage II: tumor in transition, partially composed of viable lipid cells, but with evidence of fat necrosis and calcifications.
- Stage III: tumor demonstrating fat necrosis, fat necrosis calcification at variable degrees of cystic formation and reactive bone tissue in formation³.

One group of authors propose a conservative approach, i.e., non-surgical, with radiologic follow-up with tomography and/or magnetic resonance and avoiding surgery. However, we disagree with this proposal, since establishing a precise radiologic and pathologic correlation is not possible with such an approach, and it can be about other lesions with different biological behavior⁵.

The main site of occurrence is the lower limbs (in up to 70% of cases)^{6,12}, as in the presented case, and the radiologic features of sclerotic halo and irregular calcifications are consistent with observations described by other authors. However,

the topography and site of stress the bone undergoes or pre-existing lesions can change the radiological presentation^{6,13}.

The common radiologic feature is a lytic lesion with well-defined margins, as in the present case. Radiologic examinations are unable to establish the bone lipoma diagnosis, which can be mistaken for other bone lesions^{7,14}.

Some authors believe that less than really existing cases are diagnosed, owing to an association or transformation of many bone lipomas into myxomatous tissue, cystic degeneration or necrosis, which results in the characteristic adult adipose tissue not appearing^{15,16}.

These lesions can occur at any age, but there are small series that mention that they are commonly diagnosed at 37.6 years of age and, according to another series, at 41. The intramedullary presentation accounts for 84% of all bone lipomas, thus being the most common^{11,17,18}.

These radiologic lesions can be tumors and, sometimes, they can be infectious: chronic tuberculosis, hyperlipoproteinemia-associated deposits, rheumatoid arthritis pseudocysts, fungal infections, desmoplastic fibromas. An accurate diagnosis is useful in terms of prognosis and treatment^{12,19}.

Patients with solitary lipomas may have genetic rearrangements, such as translocations involving chromosome 12. Hyperlipidemia IV has been associated with multiple lipomas. Bone lipomas with malignant dedifferentiation have been reported in isolated cases²⁰.

CONCLUSIONS

Bone lipomas are infrequent and can mimic several benign bone diseases. They are generally findings with few symptoms and can be conservatively managed, but surgery with surgical specimen procurement for pathological correlation is irreplaceable for diagnosis and prognosis to be established. The treatment of choice is surgical. Owing to the low frequency of this condition in the oncology and orthopedics practice, the present case is published, with satisfactory results for the patient.

CONFLICT OF INTERESTS

The authors declare not having any conflicts of interest with regard to the present publication.

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