

Bone Pseudotumors: Retrospective Study of 7 Cases

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Abstract

Original Research Article

Our work reports a series of 7 cases of bone pseudo-tumors of limbs including 5 essential bone cysts and 2 aneurysmal bone cysts collected between 2014 and 2016 in the orthopedic department. The average age of the patients was between 16 and 26 years old. The involvement affected the long bones in more than 90% of cases, the metaphyseal location is predominant in both cystic types. Pain, swelling and pathological fracture are the most prominent clinical signs in most cases. Radiologically, the elementary lesion is a mono or multilocular gap blowing the cortical. The diagnosis was confirmed by the biopsy. All patients were treated surgically by curettage and cement filling. The clinical and radiological results were satisfactory. The evolution was good without recurrences or complications.

Keywords: Pseudotumors, Essential Bone Cyst, Aneurysmal Bone Cyst.

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INTRODUCTION

Bone tumor tumors are defined as dystrophies or inflammatory reactions, which can mimic, by their clinical and radiological presentation, a benign or malignant bone tumor that does not meet the definitions and criteria of the tumors. The diagnosis is based on the triple confrontation: clinical, imaging and histology. Most often, these pathologies are the result of a specific etiological treatment that can be summarized as simple curettage avoiding aggressive surgical treatment. There are different pseudotumors, in our study we will focus on two types of reaction lesions that are the aneurysmal bone cyst and the essential bone cyst.

METHODS

Our retrospective study includes all cases of essential and aneurysmal bone cysts, diagnosed in our orthopedic department over a 3-year period from 2014 to 2016. The file analysis, the subject of this study, includes epidemiological, clinical, radiological, pathological, therapeutic and progressive information. We report the clinical observations and imaging aspects of 7 cases in patients followed and treated.

RESULT

We revealed 7 cases spread over 3 years. Or 2.3 cases per year. The age varies between 16 and 26 years for the essential bone cyst with a mean age of

21.5 years, and between 25 and 26 years for the aneurysmal bone cyst. We noted a slight male predominance with 3 men and 2 women for the essential bone cyst. On the other hand, there was no predominance for sex concerning the aneurysmal bone cyst: 1 man and 1 woman. The most frequent localization was in the proximal femur with 4 cases (Figure-1), for the rest there was one case in the distal femur (Figure-2), one case in the proximal tibia and one case in the calcaneum (Figure-3).

The time elapsed between onset of symptomatology and consultation ranged from 6 months to 24 months with an average delay of 15 months. Pain was present in almost all our patients associated with swelling in 6 cases. Functional impotence was marked in 3 patients, and often partial. A patient presented a pathological fracture treated orthopedically. Standard radiography was performed in all our patients. For the essential bone cyst, the site of the tumor was metaphyseal in 3 cases, metaphyseal and epiphyseal in one case and lesion in the calcaneus. All the lesions were of lacunary type, one of which had a bulging multilocular aspect. For the aneurysmal bone cyst the seat was metaphyseal in one patient and metaphyseal-epiphyseal in the other. All the lesions were of lytic type of centered seat. The blowing aspect is objectified in a patient. CT and MRI were not performed in any of our patients. A blood test based on blood count, ionogram and crushing balance was

normal for all patients. The purpose of treatment is to promote cyst healing and to avoid recurrence of the cyst or refracture.

Surgical treatment consists of curettage-filling: all the essential cysts of our series have been curetted and grafted. Osteosynthesis was done in two cases (Figure-4). Aneurysmal bone cysts were also curetted and grafted and osteosynthesis was done in one case only. In the short term, the evolution was good in all patients; none of our patients had thromboembolic complications or postoperative pathological fractures. In the long term none of our patients had recurrences. 3 patients in our series are lost to follow-up.



Fig-1: Radiograph of an essential bone cyst of the superior femoral metaphysis



Fig-2: X-ray of aneurysmal cyst of the distal femur

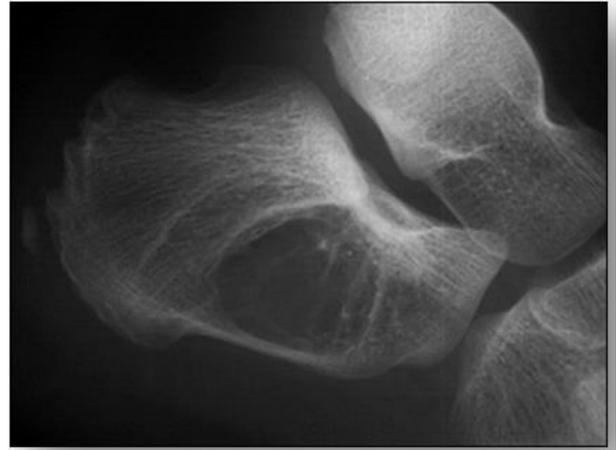


Fig-3: X-ray of an essential calcaneal bone cyst



Fig-4: X-ray of a stable elastic centromedullary nailing of an essential bone cyst



Fig-5: MRI of an essential bone cyst of the proximal femur

DISCUSSION

Epidemiologically, the essential bone cyst is very common. It ranks third in frequency among bone lesions after non-ossifying fibroids and exostoses during growth. The essential bone cyst affect both sexes and are two to three times more common in boys, these main locations are the humerus and the proximal femur then comes the proximal tibia and other localizations Regarding the aneurysmal bone cyst, it is a rare lesion (1% of bone tumors) [1]. With a slight female predominance (sex ratio of 1.17), which occurs at any age, but especially during the first two decades of life. Clinically: The Essential Bone Cyst is a lesion that quietly evolves silently until the "inaugural fracture" or the appearance of microfractures that cause pain. In contrast, tumefaction and pain are the main symptoms of aneurysmal bone cyst. Standard radiography is often sufficient to carry the diagnosis of a essential bone cyst [2]. It is, in its typical form, a central metaphyseal gap without partitions, located on the proximal humerus or proximal femur, ovoid.

CT in the case of the essential bone cyst is radiating and not very useful, but in the case of the aneurysmal bone cyst it makes it possible to determine the volume of the lesion to better see the peripheral periosteal osteogenesis border and to analyze the contents of the cyst well [3].

MRI in the case of the essential bone cyst is useful, it shows in its typical form a single gap without partitions with a low signal in T1 and hypersignal in T2 (Figure-5). In the case of the aneurysmal bone cyst, MRI becomes indispensable if the lesions are close to

the trunk [4]. Other examinations can be performed such as technetium bone scintigraphy, puncture and cystography, ultrasound and angiography.

Histological examination in the case of the essential bone cyst can be performed if the puncture does not allow the diagnosis or in case of atypical localizations but concerning the aneurysmal bone cyst histological examination is essential before any management [5]. Different surgical means are available. The biopsy may be the first of the surgical methods of an aneurysmal cyst, the surgical curettage which was the initial treatment of the essential bone cyst, and in the end the resection as opposed to curettage allows to remove the entire cyst by passing into healthy zone associated with a bone graft, it is indicated if it does not involve a functional decrease [6-8].

The minimally invasive primary mechanical stabilization allows progressive healing of the cyst, immediate mobilization and protection against fracture. For non-surgical means, we find Ethibloc Injection, the injection of corticosteroids and especially the injection of the demineralized bone matrix associated with bone marrow [9].

For therapeutic indications it is necessary to know that the essential bone cyst is a benign lesion which is not painful and can heal alone with time [10]. Treatment is only justified to prevent a fracture. In this case we can consider.

The therapeutic indications of the aneurysmal bone cyst depend on its radiological aggressiveness, its size, the age of the patient, the location of the cyst and finally its relationship with a possible growth cartilage [11, 12].

The evolution of these cysts can be towards a fracture, an epiphysiodesis, a malignant transformation or a growth disorder especially in the localizations close to the cartilage of growth [13, 14].

CONCLUSION

The bone can be the seat of malignant tumors, benign but also of pseudotumors with very variable mechanisms from one tumor to another and of which a better knowledge will make it possible to establish new therapeutic approaches to avoid the invasive and decaying treatments.

Conflicts of Interest: The authors do not declare any conflict of interest.

Contributions of the Authors: All authors have read and approved the final version of the manuscript.

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