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Oncology

Chondro-Myxoid Fibroid of Calcaneus: An Exceptional Entity

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Case Report

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Abstract: Chondromyxoid the fibroid is a primary tumor of bone, benign, rare, reaching preferably young patients and preferentially affecting the long bones but all the bones of the skeleton can be achieved. His heel localization is rare and difficult to diagnose. We report an exceptional case of chondromyxoid fibroma calcaneus for which the diagnosis confirmation was histological and the treatment was an aggressive curettage with filling without postsurgical recurrence at 12 months of decline.
Keywords: fibroma ,Chondromyxoid , calcaneus.

INTRODUCTION

Chondromyxoid fibroma is a very rare benign cartilaginous tumor, representing less than 1% of all primary bone tumors [1,2]. It affects the young subject preferentially and is most often located at the metaphyses of the long bones of the lower limbs (particularly the tibia) [3]. Its location at the foot is rare [1, 3, 4]. No clinical signs are specific for this tumor. It is a slow-growing, locally aggressive tumor [5, 6]. It can be confused with other benign or malignant bone tumors and its histological polymorphism associated with its aggressive nature make the differential diagnosis difficult with chondrosarcoma [7]. The treatment of chondromyxoid fibroma is essentially surgical conservative and the main post-therapeutic complication remains recurrence [6,7]. The originality of this observation lies in the rarity of this type of bone tumor, the calcaneal localization which is even rarer, and the problems of differential diagnosis that it poses.

CASE REPORT

This is a young patient aged 24, student, who consults for left foot pains evolving for 10 months. Clinical examination reveals non-inflammatory painful swelling of the lateral surface of the right hind foot. The articular mobility is normal at the level of the back foot and the ankle, the skin is of normal aspect, the ganglion areas are free. Vascular and neurological examination of the foot and ankle are normal. The rest of the physical examination is peculiar. The general state was preserved with no biological stigmata of infection.

The standard radiograph of the left ankle, in profile, had shown a lytic lesion at the level of the calcaneal base, well limited, blowing the cortical without breaking, partitioned and bordered by a border of osteocondensation, without periosteal reaction or anomaly of the soft parts (Fig. 1,2).

Computed tomography of the right foot revealed the presence at the level of the calcaneal base of an osteolytic process, hypodense, multilocular, with polycyclic contours traversed by septal ridges, blowing the cortex which disappeared in places, without periosteal reaction or extension. soft tissue (Fig. 3,4). The mass is of heterogeneous density after intravenous injection of iodinated contrast medium.

In front of this aspect, the patient benefited from a biopsy. Histological examination had demonstrated a tumor proliferation of lobulated architecture and cartilaginous matrix, its lobules are delimited by fibrous septas approaching a few giant cells, the cartilaginous matrix consists of stellate cells with eosinophilic cytoplasm and whose nuclei have a certain degree of anisocoryosis, some rare foci of calcifications are also observed.The anatomopathological examination concludes with a chondromyxoid fibroma.

The patient was operated on and had an aggressive tumor recess associated with a spongy and cemented graft (Figure 5,6). The operative follow-up was simple; the bone consolidation was obtained at a month and a half.

The patient is always followed in consultation and does not present a tumor recurrence. The current decline is 1 year.

DISCUSSION

Chondromyxoid fibroma is a tumor that has been extensively confused with other benign and even malignant bone tumors, and has been described for the first time as a distinctive neoplasm by Jaffe and Lichtenstein in 1948 [8].

The origin of the tumor was debated by the researchers, while Jaffe and Lichtenstein considered it to be fibroid with myxoid and chondroid traits [8], Schajowicz opted for the term fibromyxoid chondroma [9] and Steiner described the tumor as intermediate neoplasia in chondroblastic differentiation between enchondrome and chondroblastoma [10]. The most recent studies have agreed that the tumor has a chondrogenic potential while being a particularly unique entity [11-13], thus leaving the exact origin and classification of the tumor imprecise. As well as its origin, the etiology of this neoplasia has not yet been determined. Some publications speak of a 6q13 aberration found in patients with chondromyxoid fibroma as possibly characteristic of this tumor [14] [15].

The diagnosis of chondromyxoid fibroma is based on the combination of clinical, radiological (suggestive in the typical tumor form) and histological (essential to the diagnosis) [1, 7].

Chondromyxoid fibroma or fibromyxoid chondroma is one of the rarest benign tumors of bone tissue. It represents 0.5% of primary bone tumors and 2% of benign tumors [16, 4]. This tumor is found in the majority of cases between the second and third decade of life with a low male predominance [1, 17]. The preferred localization is represented by metaphysis of the long bones of the lower limbs (80% of cases) with a clear predominance for the proximal tibial metaphysis [1-18]. Its location in the calcaneus is rare, accounting for 4% of cases [19].

The attack mainly affects the young subject between 10 and 30 years of age with a frequency that varies between 50 and 58% depending on the series [20,21]. A slight male predominance has been reported by most authors [22, 23,24] with a sex ratio ranging from 1 to 2 [24,23], moreover other authors do not report a predominance of sex [25].

As in the majority of benign bone tumors, there is no specific symptomatology for chondromyxoid fibroma. However, Dahlin *et al*. [26] described three common signs found in patients with chondromyxoid fibroma:

•Spontaneous pain frequent in the bearing areas (in particular tibia and femur).
•The mass often palpable.
•The soft consistency of the tumor found on palpation [27].

The usual telltale sign is mild, localized pain that develops over months to years, and more rarely, swelling [28, 29]. The chance finding is possible; the revealing pathological fracture is rare [30].

The radiological aspect of chondromyxoid fibroma is nonspecific, it is a lesion that is preferentially located in the metaphyseal regions, and often eccentric [20], more rarely an epiphyseal localization can be seen.

On standard radiographs, the characteristic image of FCM is a metaphyseal, rounded or oval geographic osteolysis that thins or blows the cortex [4,17,31]. The gap contains dense stalls of curvilinear shape, corresponding to healthy bone ridges between tumor lobules [1, 4, 18]. Punctate calcifications may occur within the tumor matrix [18, 16].

In computed tomography, it is the morphological criteria that make it possible to approach the diagnosis [4]. However CT is useful in the detection of matrix calcifications and evaluation of the cortical state [16].

In MRI, the appearance of FCM is most often heterogeneous. The myxoid zones have a hyposignal in T1-weighted sequences and a hypersignal in T2-weighted sequences. The behavior of the fibrous zones depends on their vascularity. Hemorrhagic or cystic areas can be found.

CMF poses the problem of differential diagnosis in its exceptional calcaneal localization, notably with the lipoma (15%), the essential cyst (3%) and the aneurysmal cyst where the imaging is specific [18, 31].

Histologically, macroscopically, chondromyxoid fibroma is a tumor of variable size whose contours are often well limited with an intraosseous expansive character [7]. The tumor tissue has a whitish blue-grayish appearance with a rather firm consistency [32]. Microscopically (Figure (5) it is a tumor lobulated by densely cellular fibrous septa. These septas are composed in various proportions by: fibroblasts, inflammatory cells (macrophages and siderophages [28], giant cells of osteoclastic type or chondroblast-like cells. When the latter are numerous, the problem of the differential diagnosis with chondroblastoma arises [32, 28]. Within the lobules, of various sizes, are distributed in a myxoid or fibro-myxoid stroma, star-shaped or spindle-shaped cells [8] with abundant cytoplasmosinophil (ramous-cell appearance) [28] with rounded or elongated nuclei [28]

They may present degenerative nuclear atypia [8] with hyperchromatic nuclei of increased size and a slight mitotic activity. This matrix may be home to micro-cystic or fibro-hyaline changes giving the tumor cells a more compact oval appearance [32] the cartilaginous nature of these cells is notably the positivity for PS100 in immunohistochemistry [28]. There may also exist: foci of hyaline cartilage, calcifications, reactive osteogenesis [28, 8]. Foci of necrosis are rare and not extensive (10% of cases) [28].

Conservative treatment must be the rule. It consists of a large resection of the tumor tissue, with filling of the residual cavity with spongy or corticocancellous tissue. Some authors have performed simple curettage, but the risk of recurrence appears to be higher than in the case of associated spongiosis.

The frequency of recidivism varies between 12.5% [33] according to the authors; it is even more important that the initial resection was incomplete. The malignant transformation of these chondromyxoid fibroids seems exceptional. In the case of our patient, no recurrence was noted at 10 months of decline.

CONCLUSION

FCM is a very rare benign cartilaginous tumor, usually located in the metaphysis of long bones. Its calcaneal localization is very rare and difficult to diagnose. Some semiological elements allow evoking the diagnosis in imaging. However, the diagnosis of certainty of FCM remains histological. Treatment with aggressive resection or curettage (with filling) should be as conservative as possible while taking into account the risk of post-surgical recurrence. This risk of recurrence is less important if curettage is associated with filling and is even less important in case of resection.

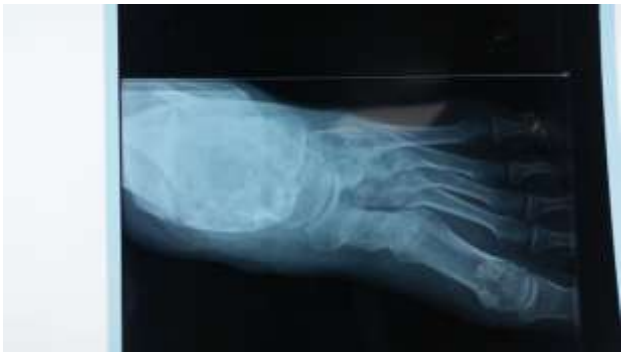

Fig-1 : Radiographie standard de face montrant la tumeur

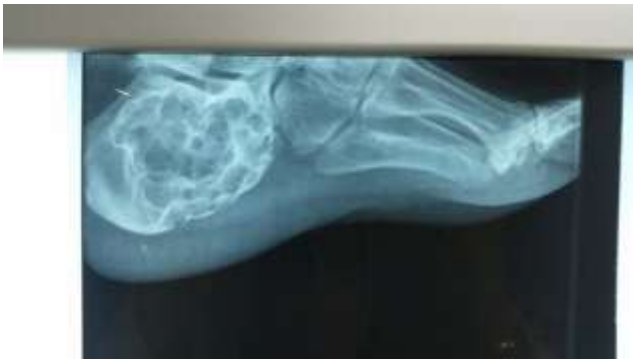

Fig-2 : Radiographie standard de profil montrant la tumeur

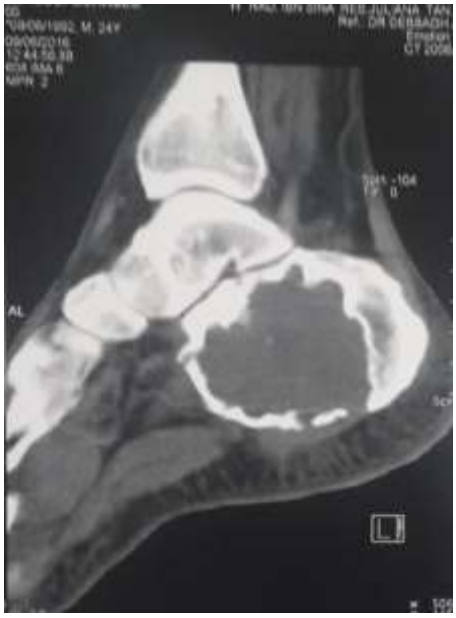

Fig-3: Image scannographique de la tumeur (coupe sagittale)

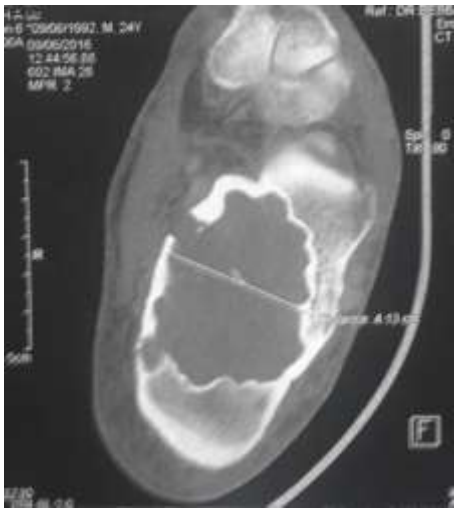

Fig-4: Image scannographique de la tumeur (coupe frontale)

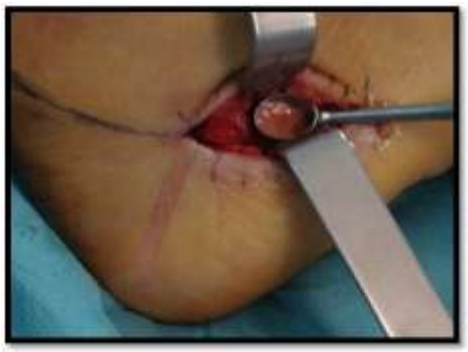

Fig-5 : Image per opératoire de l'incision

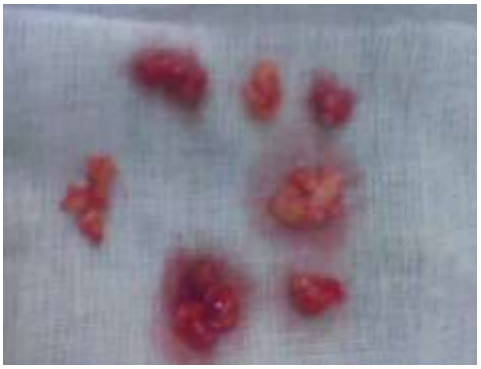

Fig-6: Image du produit tumoral

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