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Radiology

Rare Location of Aneurysmal Bone Cyst: The 5th Metacarpal: A Case Report

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Abstract | **Case Report**

Aneurysmal bone cyst is a benign, locally destructive bone lesion occurring most often in the metaphysis of long bones. However, it is a truly rare tumor with pathological and radiological features common to other benign and malignant bone lesions, the diagnosis being all the more difficult when the tumor is of unusual location. We report a case of a very rare location in the 5th metacarpal.

Keywords: Mycetomas, Madura foot, foot, imaging.

INTRODUCTION

Aneurysmal bone cyst is a benign, locally destructive bone lesion, occurring most often in the metaphysis of long bones. However, it is a truly rare tumor with common pathological and radiological features with other benign and malignant bone lesions; the diagnosis is all the more difficult when the tumor is of unusual location. We report a case of a very rare location in the 5th metacarpal.

PATIENT AND OBSERVATION

Patient

A two-year-old child, without any particular pathological history, who presented for 4 months with a painful swelling of the left hand, of moderate intensity, not ameliorated by usual analgesics, evolving in a context of conservation of the general state,. The standard X-ray of the left hand (figure 1) showed a well-limited, multicompartmental osteolytic lesion of the 5th metacarpal, surrounded by a marginal sclerosis, with associated cortical blowing without any detectable periosteal reaction. The CT scan of the hand (figure 2) showed a cystic metaphyseal tumor, on the 5th metacarpal without cortical rupture. The patient underwent a bone curettage associated with a graft (figure 3). The intraoperative appearance was in favor of an aneurysmal bone cyst, which was subsequently confirmed by an anatomopathological study. The postoperative course did not reveal any complications and the clinical and radiological evolution was good (Figure 4).

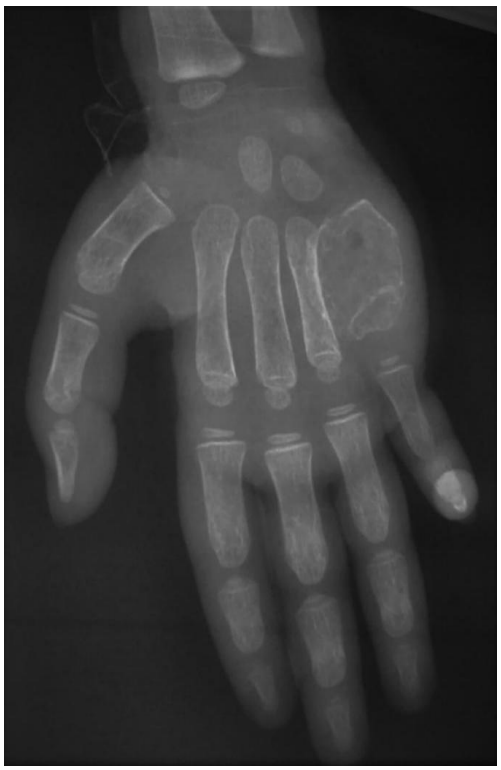

Figure 1: Initial standard radiograph showing a CAPANNA *et al.*, type 2 aneurysmal bone cyst located in the 5th metacarpal

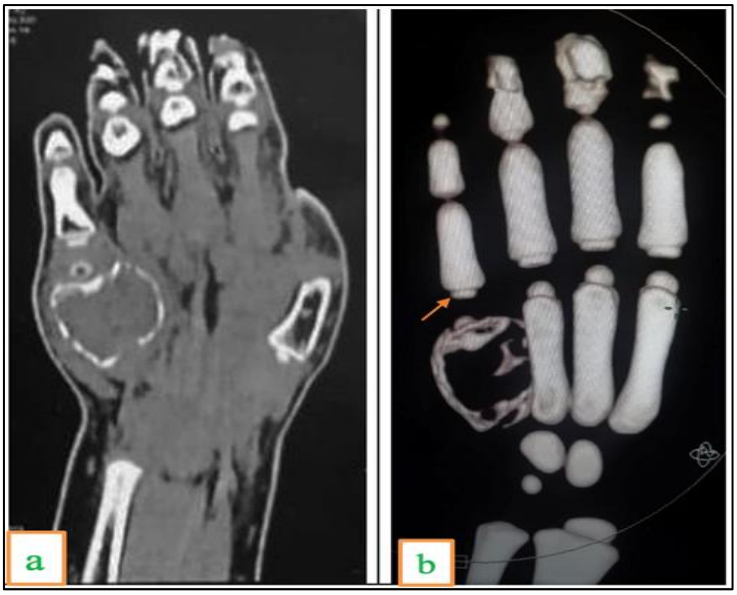

Figure 2: CT scan of the left hand in coronal section (a) and 3D reconstruction (b), showing a lytic bone mass in the 5th metacarpal measuring 1.8*2.1 *1.8 cm blowing the cortex

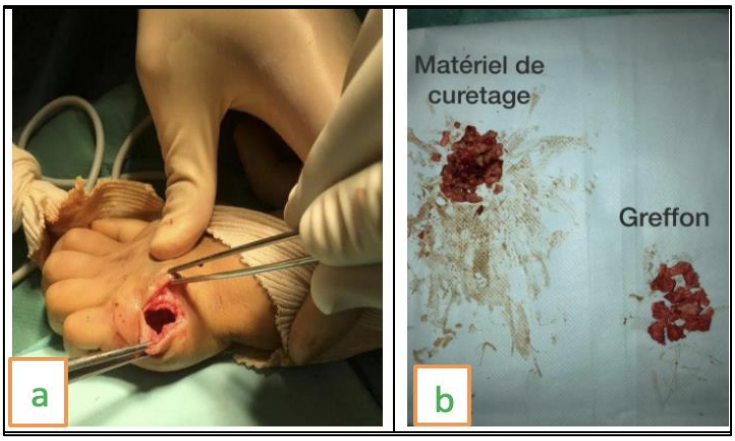

Figure 3: (a). Intraoperative image: curettage of the cyst and placement of a graft from the iliac crest. (b). Intraoperative image showing the curettage material and the graft used to fill the residual cavity

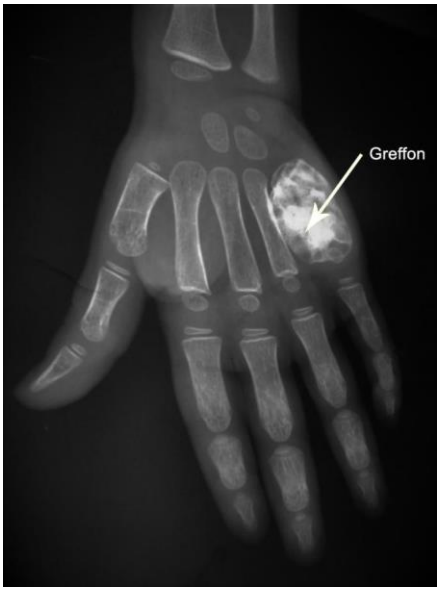

Figure 4: **Standard radiograph of the face at 16 months post-op**

DISCUSSION

The aneurysmal bone cyst ABC was first described in 1942. It is a benign bone dystrophy that can affect the whole skeleton with predilection of long bones (50 to 60%). Localization in the hand is rare (3-5%). It can be seen at any age but the vast majority of cases occur between the ages of 10 and 20. The clinical presentation is essentially a swelling that evolves on average between 4 and 12 weeks. In the tubular bones of the hand, the preferred location is the distal metaphysis of the second and third metacarpals. Involvement of the phalanges and metacarpals occurs with the same frequency, unlike chondromas, which are mainly phalangeal and are the main differential diagnosis of ABC in the hand.

Radiographically, the appearance of ABC of the tubular bones of the hand is that of the long bones of the skeleton, metaphysial, sometimes eccentric, expandable polylobed lesions without cartilage deposition, with cortical erosions sometimes blowing,

making the diagnosis suspicious. Epiphyseal locations are rare but may also involve the growth plate.

The CT scan reveals fluid levels in almost two thirds of cases without lesion extension into the soft tissues. It may also show destruction of the cortical bone. MRI shows intracystic septa, with their "soap bubble" appearance, well highlighted by gadolinium fixation.

When the diagnosis is suspected, a systematic bone biopsy, ideally under CT scan control, confirms the diagnosis and warns the patient of a significant risk of post-surgical recurrence, which has been reported to be up to 60% for conservative treatment of the bones of the hand.

In terms of treatment, curettage is the most important step, which can lead to a good result. However, the association of an autograft seems preferable, often leading to better results than curettage alone, as in the case of our patient.

CONCLUSION

Aneurysmal cyst in metacarpal is rare, but should be suspected in the presence of localizes progressive swelling, clinical finding combined with imaging and histopathology findings are the cornerstone of an accurate diagnosis before any treatment, and in most cases the surgical intervention is a satisfactory.

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