International Journal of Research in Orthopaedics
Bousbaa H et al. Int J Res Orthop. 2024 Jul;10(4):825-827
http://www.ijoro.org

Case Report

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20241711

Aneurysmal cyst of the thumb in young adults: about an exceptional case

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Received: 26 October 2023
Revised: 01 December 2023
Accepted: 04 December 2023

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ABSTRACT

The aneurysmal bone cyst is a benign, locally aggressive tumour. It affects children and young adults with a preference for the long bones and the vertebrae, rarely the hand. Involvement of the thumb is exceptional, the author reports an observation in a young 18-year-old patient, complaining of a painful swelling of the right thumb. The positive diagnosis is evoked on radiography, confirmed by the histology after surgical biopsy. Radical excision was opted for our patient, who, unlike conservative treatments, seems to avoid recurrence.

Keywords: Aneurysm, Bone cyst, Expansile, Amputation

INTRODUCTION

The aneurysmal bone cyst (KOA) is a benign pseudo-tumor bone dystrophy; It affects children and young adults with preference for the metaphysis of the long bones; the vertebrae but rarely the hand.[1] This locally aggressive lesion, often characterized by rapid growth, worrying and whose clinical picture is sometimes impressive.[2]

The aim of this work is to highlight the rarity of this lesion, and to discuss its therapeutic modalities through an observation and a review of the literature.

CASE REPORT

We report the case of a young adult of 18 years old; who complained of pain and partial functional impotence of the thumb for 3 years; then of swelling of the phalangeal of the thumb pushing him to consult (Figure 1). the standard X-ray performed finds an osteolytic image, expansive with local aggressiveness, which causes extensive destruction, a blown and thinned cortical, but without intrusion of the periosteum (Figure 2). The MRI objectified a mass P2 of the left thumb of heterogeneous hypo T1 hyper T2 vascular septated fluid signal at the periphery after gadolinium injection measuring 37×35 mm, blowing the bone cortical and thinning the soft parts (Figure 3). Our patient received a surgical biopsy before the surgical treatment, we had the choice between curettage-filling, and resection. We opted for a radical treatment for this patient given the late nature of the presentation. The functional recovery of our patient is total, no pain or residual pain is noted. Our patient is still under regular control with a setback of 3 years.

Figure 1: Clinical appearance of swelling of the left thumb.

Figure 2 (A and B): Preoperative X-ray showing an expansive cystic lesion of the distal phalanx of the left thumb with rupture of the cortical.

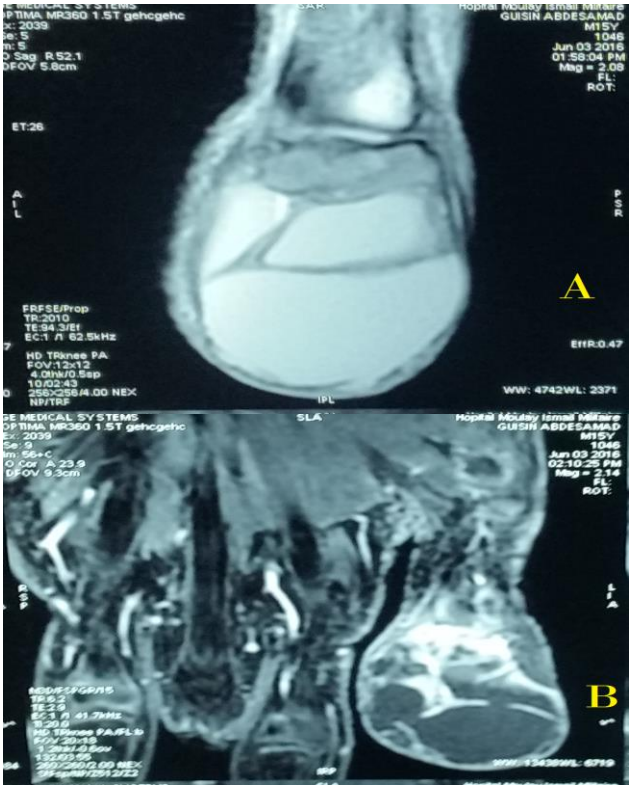

Figure 3 (A and B): MRI appearance of the P2 mass of the left thumb of hypo T1 hyper T2 heterogeneous fluid signal vascular septum at the periphery after gadolinium injection measuring 37×35 mm, single blowing the bone cortical and thinned the soft parts.

DISCUSSION

KOA is very rare; as shown by the literature review carried out by Schreuder et al concerning 897 cases of KOA collected from 1968 to 1997; the incidence of this condition is 0.14 per 100,000 inhabitants.[1,2] It is an aggressive lesion, often characterized by rapid growth, worrying and whose clinical picture is sometimes impressive. The entire skeleton can be reached and affects in descending order of frequency, long bones 60%, short bones 25% and flat bones 15%.[3] This lesion, which is as common in girls as in boys, affects adolescents under the age of 20, extremely rare before 5 years and after 45 years.[1,5]

The etiopathogenesis is still under discussion. In 1942, Jaffe and Lichtenstein pointed out that this dystrophy was secondary to a local hemodynamic disturbance with an increase in venous pressure or the creation of abnormal arteriovenous communication.[4] For Campanacci et al, it would be a tissue reaction linked to a local hemorrhage.[6]

It is necessary to point out the insidiousness of the clinical picture. Pain and swelling are the basic signs. An articular connotation with pain and limitation of movements is found in the articular juxta forms. In a third of cases, the aneurysmal bone cyst is the cause of a pathological fracture.[7]

From the radiological point of view: the characteristic sign of this lesion is an osteolytic image, expansive with local aggressiveness, which causes extensive destruction, a blown and thinned cortical, but without intrusion of the periosteum. Conventional X-ray images are supplemented by a CT scan and an MRI scan. They make it possible to appreciate the dimensions of the cyst, the internal architecture and the ratios of the cyst. The presence of level images, which represent the interface between the sedimentary medium and the liquid medium. These level images are very typical of the KOA.[8]

At the radiological stage, the diagnostic confusion can be made with the giant cell tumor, the intraosseous synovial cyst, especially since these lesions can be associated with KOA. Chondroma, bone angioma and chondromyxoid fibroma can also be mentioned. If the lesion has an aggressive appearance on the X-ray images, we must always think of a malignant process but also the bone metastases of a malignant tumor of the female genital tract in particular. Only the histological examination makes it possible to decide, it is a fundamental time of the positive diagnosis. Telangiectatic osteosarcoma can simulate a KOA, it is necessary to look for the cellular abnormalities characteristic of sarcomas.[1] The radiography-MRI combination strongly makes it possible to suspect a KOA, the biopsy remains absolutely essential before any treatment.[1,2]

The most widely used therapeutic methods comprise curettage, resection, intrakystic injection of sclerosing products, selective arterial embolization isolated or in combination with a curettage and cryotherapy isolated or associated with a curettage.[9] Radiotherapy has made it possible in the past to obtain good clinical results, due to its risk of destruction of cartilage in the long term and the risk of sarcomatous degeneration, this technique has been abandoned.[4,6,10]

The indications depend on the age, the location of the cyst, its relationship with the growth cartilage, its size, its

radiological aggressiveness and the habits of the operator.[1,9] Our patient received a surgical biopsy before the surgical treatment, we had the choice between curettage, resection. We opted for a radical treatment for this patient given the late nature of the presentation: this choice must be exceptional.

CONCLUSION

This observation reflects the exceptional character of the aneurysmal cyst of the thumb. The atypical symptomatology delays the diagnosis, the confirmation of which is essentially histological. The radical treatment seems justified to us, due to the late nature of the presentation: this choice must be exceptional.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Schreuder HW, Veth RP, Pruszczynski M, Lemmens JA, Koops HS, Molenaar WM. Aneurismal bone cysts treated by curettage,cryotherapy and bone grafting. J Bone Surg Br. 1997;79(1):20-5.
2. Mcndenhall WM, Ziotecki RA, Gibbs CP, John DR, Mark TS, Nancy PM. Aneurysmal bone cyst. Am J Clin Oncol. 2006;29(3):3115.
3. Vergel De Dios AM, Bond JR, Shives C. Aneurysmal bone cyst. A clinicopathologic study of 238 cases. Cancer. 1992;69(12);2921-31.
4. Jaffe HL, Lichtenstein L. Solitary unicameral bone cyst with emphasis on the roentgen picture, the pathologic appearance, and the pathogenosis. Arch Surg. 1942;44(6):1004-25.
5. Freiberg AA, Loder RT, Heidelberger KP, Hensinger RN. Aneurysmal bone cysts in young children. J Pediatr Orthop. 1994;14:86-91.
6. Campanacci M, Ruggieri P. Lésions pseudotumorales: kyste anévrismal. Encycl Med Chir Appareil locomoteur, 14-030-K-10. Elsevier-Masson, Paris. 1993.
7. Mason ML, Wheelock MC. Aneurysmal bone cyst of the hand. Q Bull Northwest Univ Med Sch. 1958;32(3):268-71.
8. Dutoit M, Kaelin A, Jundt G, Siebenrock K, von Hochstetter A, Hefti F. Kyste osseux anévrysmal (KOA). Forum Méd. 2007;7:371-4.
9. Frassica FJ, Amadio PC, Wold LE, Beabout JW. Aneurysmal bone cyst: clinicopathologic features and treatment of ten cases involving the hand. J Hand Surg Am. 1988;13(5):676-83.
10. Mseddi M, Mtaoumi M, Dahmene J, Hamida RB, Siala A, Moula T, et al. Hydatid cysts in muscles: eleven cases. Rev Chir Orthop Reparatrice Appar Mot. 2005;91(3):267-71.
11. Lühr T, Junginger T. Muscular Echinococcal cysts of the muscles: a rare differential diagnosis of a soft tissue swelling. Chirurg. 1995;66(12):1275-6.

Cite this article as: Bousbaa H, Zejjari H, Cherrad T. Aneurysmal cyst of the thumb in young adults: about an exceptional case. Int J Res Orthop 2024;10:825-7.