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Case Report

Chondromyxoid fibroma of the distal fibula in a pediatric patient: a case report☆

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ABSTRACT

This case shows a rare tumor (chondromyxoid fibroma) in distal fibula in a pediatric patient who presented with local pain and tumescence. A final diagnosis was made only after the second operation, wherein the pathology was compared with CT imaging method and use of adjuvants.

Fibroma condromixoide em fíbula distal em paciente pediátrico: relato de caso

Palavras-chave:
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RESUMO

Este caso retrata um raro tumor (fibroma condromixoide) em fíbula distal em paciente pediátrico, que se apresentava com dor e edema local. O diagnóstico final só foi feito após a segunda intervenção cirúrgica, em que o anatomopatológico foi comparado com as imagens tomográficas e o uso de métodos adjuvantes.

Introduction

Primary bone tumors that affect the pediatric age group are infrequent conditions, but when they occur, they are mostly benign lesions.[1,2] Chondromyxoid fibroma (CMF) is a very rare tumor and is defined by the World Health Organization as a "benign tumor characterized by lobulated areas with fusiform cells; with abundant intercellular myxoid or chondroid material, separated by zones of greater concentration of rounded or fusiform cells, with giant multinucleated cells of different types". Areas of myxomatous tissue occur due

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to necrosis of the chondroid tissue, and fibrous areas due to repair of the degenerated areas. These tumors can be confounded with chondrosarcoma, since they may present cells with pleomorphism.[3] They account for less than 1% of primary bone tumors.[3] Jaffe and Lichteinstein, in 1948, were the first to describe this type of lesion, in a series of eight cases located in the lower limbs. All of the cases presented mild pain and a palpable mass at the site, without any history of trauma.[4–6]

These tumors have greater incidence in children at puberty and during adolescence, and their main location is the metaphyseal region of the long bones, especially in the lower limbs. The proximal tibia is affected in 50% of the cases, followed by the femur, metatarsus and calcaneus.[6,7] Clinical complaints are generally minimal or even nonexistent but when present, the patient reports mild pain in the region affected, which has an insidious progressive course, and slight edema and joint irritation may be presented.[8,9]

Radiologically, a metaphyseal lytic lesion of eccentric nature, which on rare occasions may cross the epiphyseal line, can be observed.[5,6] A thin halo of reactive bone borders the external part of the lesion, while the internal part appears to have an irregular outline that may present slight sclerosis.[6,8] Through imaging examinations, it can be differentiated from chondroma, fibrous dysplasia and aneurysmatic bone cysts. Helicoid computed tomography clearly shows the details of the tumor, which generally ranges from 1.5 to 8 cm in size and may contain small calcifications.[9,10] It is very important to establish its relationship with the growth plate and the neighboring structures.[6] The treatment consists of intralesional resection of the tumor, with fulguration of its interior, and bone cement can be used to fill the space left by the excision. Alternatively, curettage can be performed, followed by autologous or homologous grafting, which avoids injuring the growth plate.[8,9] Recurrence is extremely rare and these is no need for chemotherapy or radiotherapy in cases of this benign pathological condition.[4,5]

Case report

The patient was a 16-year-old male with a complaint of increased volume and pain in his left ankle over the last few months. He said that he had not suffered trauma. He showed slight abnormality of gait, and there was no improvement in his condition through continuous use of diclofenac. On physical examination, he did not present any restrictions on movement, but only mild edema (+/4+) and pain on deep palpation of the lateral malleolus. Computed tomography showed a lytic lesion in the fibular malleolus, which measured 2.9 cm × 2.6 cm on the major transverse axes and 3 cm on the vertical axis. He presented small foci of solution of continuity in the cortical bone. After administration of contrast, an annular area of impregnation was observed inside the lesion, which suggested the existence of an inflammatory-infectious process. The muscle and adipose tissue layers were preserved (Figs. 1 and 2).

The patient then underwent curettage of the lesion in the distal fibula, performed at the Pediatric Orthopedics Service of Hospital Pequeno Príncipe (HPP, Curitiba, PR) in March 2009. Multiple fragments of firm granular pinkish–yellowish tissue were removed from the fibula, measuring 3 cm × 2.5 cm × 0.5 cm. From the anatomopathological examination, it was concluded that this was an atypical

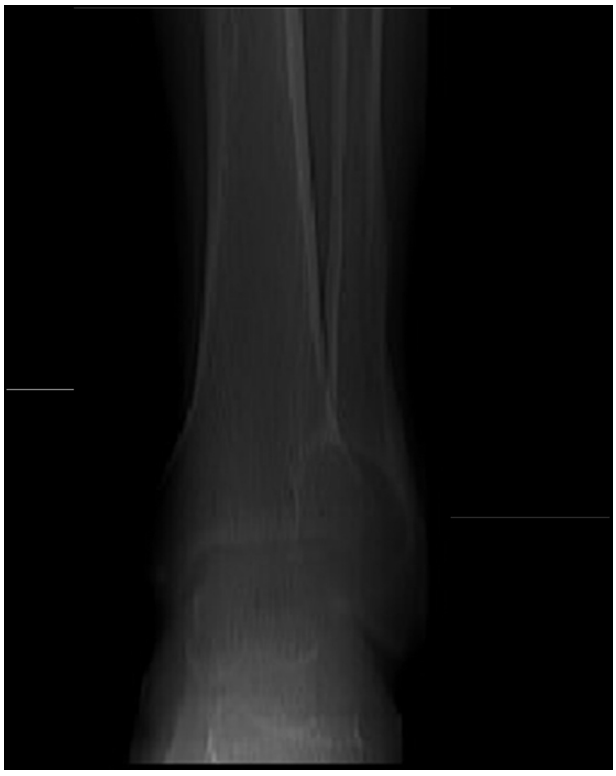

Fig. 1 – Radiograph of the left ankle (March 19, 2009).

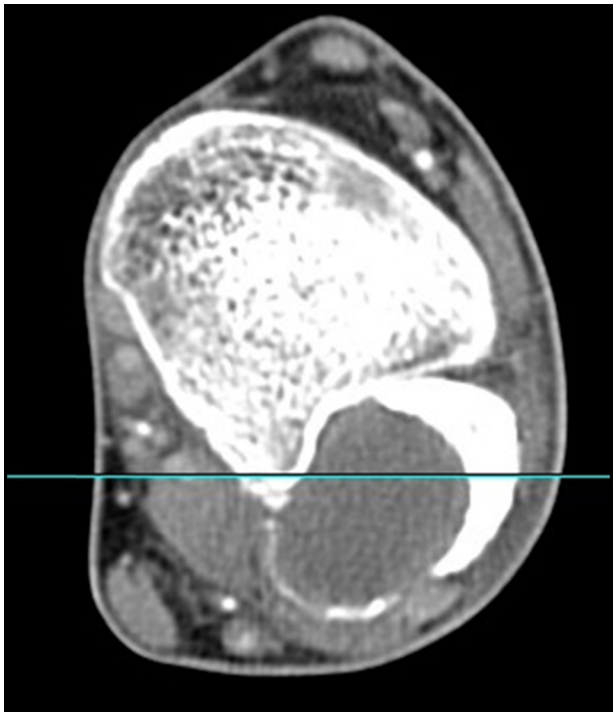

Fig. 2 – Helicoid computed tomography (March 19, 2009).

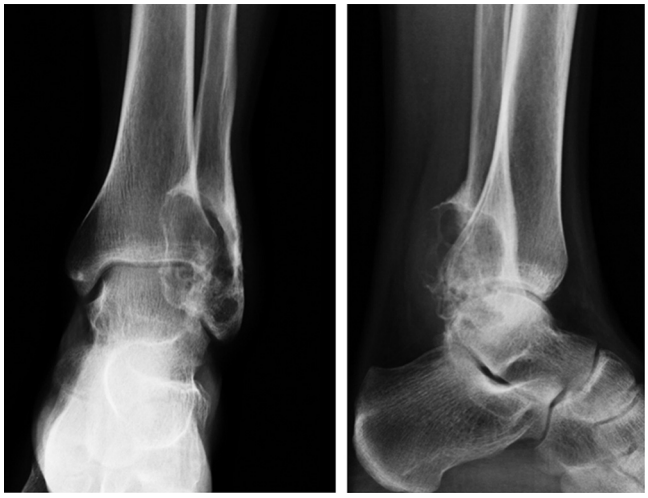

Fig. 3 – AP and lateral radiographs of the ankle, one year after the surgery.

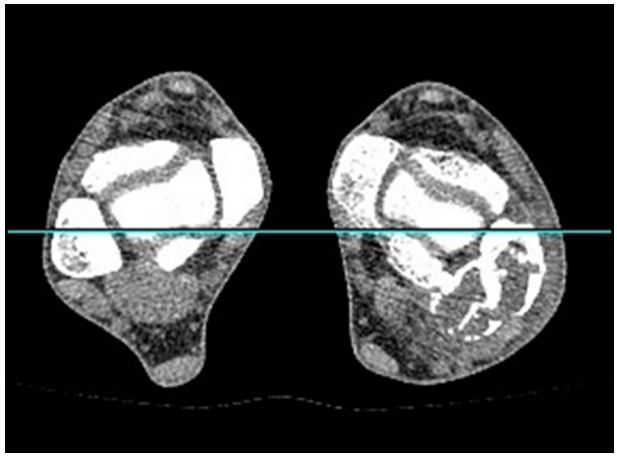

Fig. 4 – Helicoid computed tomography of the ankles bilaterally, one year after the surgery.

cartilaginous proliferation, with the recommendation that it should be considered clinically to be an enchondroma.

At outpatient return visits after the surgery, the patient continued to present slight edema in the leg and pain on palpation of the malleolus. This worsened one year after the surgery. He complained of daily pain and a discrepancy of 10° less dorsiflexion of the foot, in relation to the other limb. After a new tomography examination (Figs. 3 and 4), it was decided to perform a new surgical intervention.

The patient underwent resection of the tumor, which measured 8 cm, and an autologous graft from the iliac was implanted, with fixation using a Kirschner wire and a plaster-cast splint (Fig. 5). The report from the anatomopathological examination showed that the tissue presented atypical cartilaginous proliferation and, after anatomoradiological correlation, the final diagnostic conclusion was that this was chondromyxoid fibroma.

At the subsequent outpatient follow-ups, the patient was seen to be asymptomatic. The Kirschner wire was removed 60 days after the operation and weight bearing on the limb was progressively allowed. There was slight edema and no local pain. One year and two months after the second surgery, the patient no longer reported any pain; his walking had significantly improved and the limitations on his movements were minimal (Fig. 6).

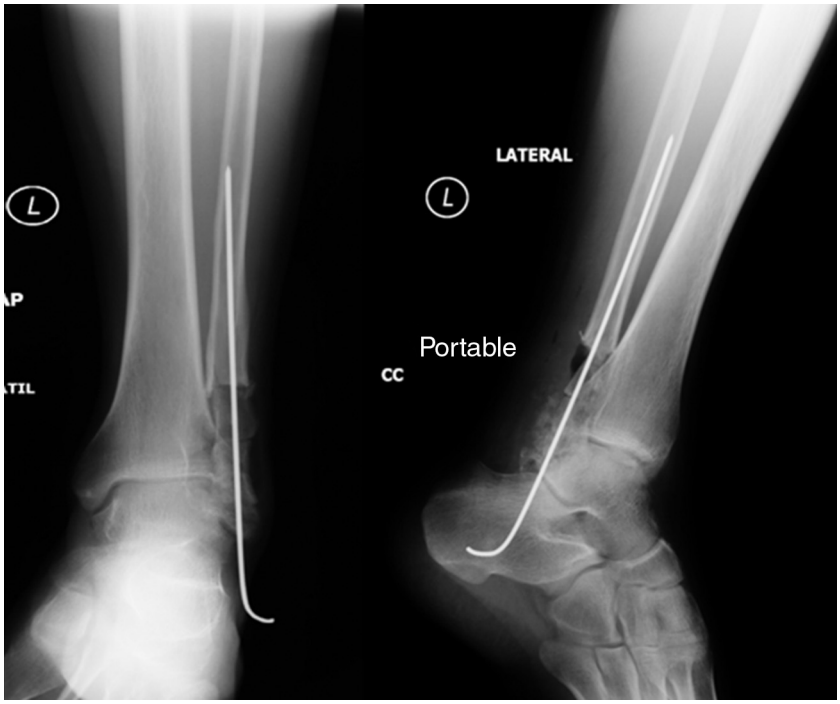

Fig. 5 – Postoperative period after the second surgery.

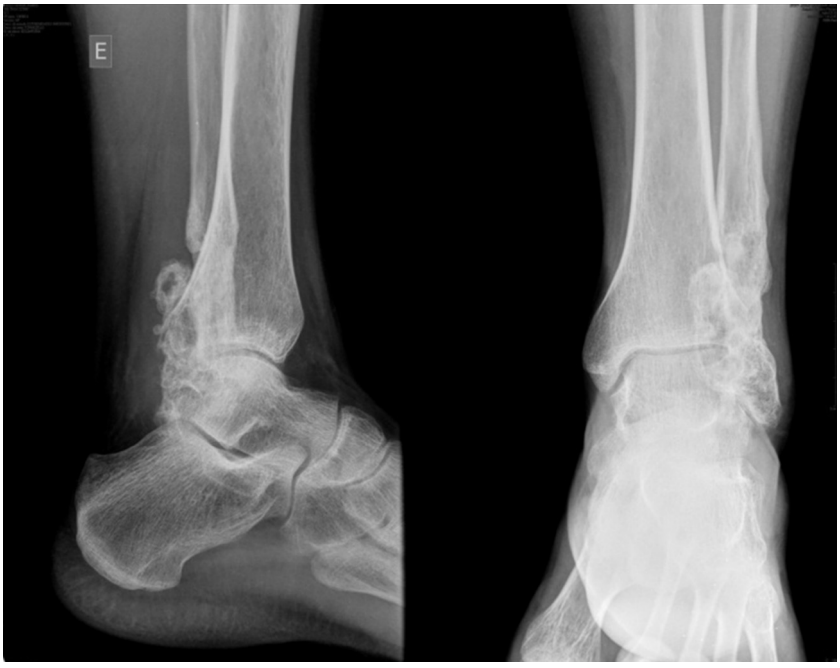

Fig. 6 – Radiograph of the ankle, one year and two months after the second surgery.

Discussion

Chondromyxoid fibroma is a very rare tumor and its form of presentation generally consists of a clinical condition of pain and edema, without any history of trauma. It can be demonstrated through simple radiography on the limb. The diagnosis is made after anatomopathological analysis, and the treatment may vary according to the region affected. Di Giorgio et al.[10] reported that treatment by means of curettage, together with phenolization of the lesion, had a better prognosis. Likewise, Jesus-Garcia Filho[4] stated that treatment consisting of simple resection of the lesion was not as effective as treatment including associated adjuvant methods. In our patient, imaging methods were not used in the first anatomopathological examination for correlating the diagnosis, which may have delayed the final diagnosis. In the second surgical approach, the multiprofessional correlation using imaging methods together with the biopsy was shown to be effective, as advocated in the study by Gitelis.[3]

Bone tumors during childhood are entities that are difficult to diagnose, and these should be borne in mind when faced with a child who presents pain and increased volume, or a fracture that is not proportionate with the intensity of the trauma.

Furthermore, when a patient presents a suspected bone lesion and this is biopsied, it should be noted that for a correct diagnosis, a correlation should be made between the clinical condition presented, the radiological imaging and the anatomopathological report, given that, as described in this case report, histological analysis alone may often not confirm the diagnosis. The literature suggests that when these lesions are treated by means of curettage, this technique should be accompanied by an adjuvant method, in order to eliminate the entire mass of neoplastic cells.

Conflicts of interest

The authors declare that there were no conflicts of interest.

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