International Journal of Research in Orthopaedics
Rajpurohit N et al. Int J Res Orthop. 2024 Jan;10(1):189-191
http://www.ijoro.org

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20234061

Case Report

A rare location of the rare tumour-chondromyxoid fibroma of calcaneum

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Received: 22 February 2023
Revised: 18 November 2023
Accepted: 01 December 2023

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ABSTRACT

Chondromyxoid fibroma (CMF) primary location is the long tubular bones of the lower extremity followed by foot and knee. This benign cartilaginous tumor of bone is the rarest reported neoplasm of cartilaginous origin. This mass can mimic other benign and malignant bone tumors owing to its variable histologic features. We report a case of CMF of the calcaneum with varying presentations. Pathologic examination is difficult but can be used to differentiate this lesion from more serious conditions. A quick and accurate diagnosis of CMF can prevent unnecessary treatment that could be harmful to the patient.

Keywords: CMF, Benign, Cartilaginous, Calcaneum

INTRODUCTION

Chondromyxoid fibroma (CMF) is a slow-growing benign tumour seen in the metaphysis of a long bone. CMF is composed of spindle or stellate cells forming lobules with abundant myxoid and/ or chondroid intercellular materials. 2nd and 3rd decade are the most common age group to get affected. CMF is a potentially aggressive tumour with a cartilage-like matrix. It accounts for approximately 1% of all bone tumors.[1] It is mistaken for malignant bone tumors owing to its variable histologic appearance.[2] It is associated with high local recurrence and with less than 2% of malignant transformation.[3]

CASE REPORT

A 11 year old male child presented with swelling over the lateral aspect of calcaneum since 5 years, associated with pain while walking since 1 year. On examination, a bony hard swelling over the left lateral aspect of calcaneum, non tender, adherent to calcaneum (Figure 1). On X ray a well defined lytic lesion seen in calcaneum without any soft tissue or periosteal reaction (Figure 2). MRI shows well defined lytic lesion with sclerotic margins and narrow zone if transition involving the body of left calcaneum (Figure 3). Histopathology examination shows features suggestive of Chondro myxoid fibroma (Figure 4). Patient's parents were given an option for curettage and biopsy with autograft, isograft or cadaveric bone grafting but they refused. Hence, patient underwent curettage and biopsy with burring and bone cement filling. Patient was followed up at 2 weeks and 2 months (Figure 6). Wound was healed with no discharge or pain and patient was walking without any difficulties from 2 months.

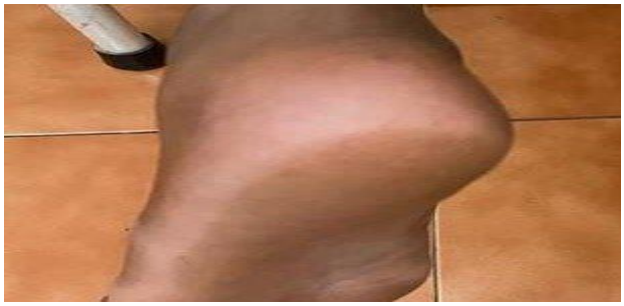

Figure 1: Clinical photograph of the patient's left foot.

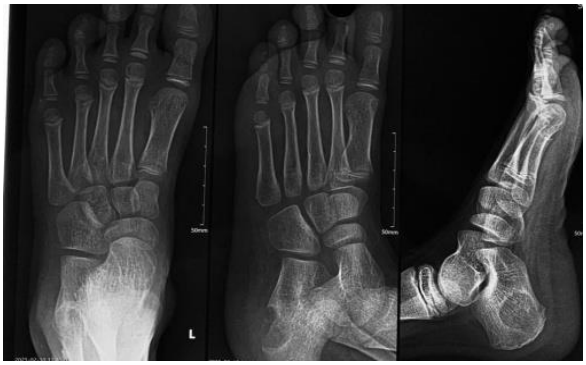

Figure 2: On X ray a well-defined lytic lesion in calcaneum without any soft tissue or periosteal reaction.

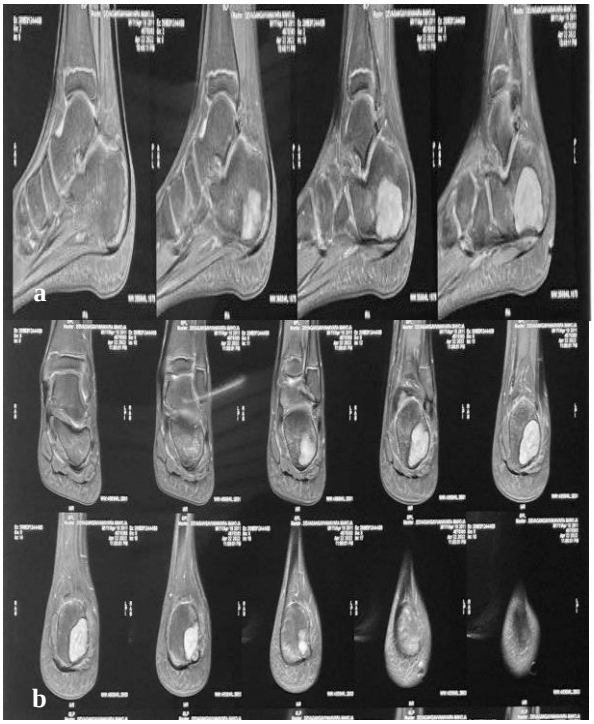

Figure 3 (a and b): MRI showing CMF lesion in calcaneum.

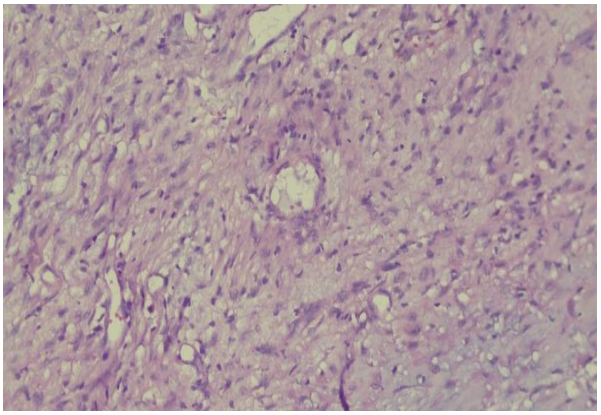

Figure 4: Hematoxylin and eosin stain, original magnification 40x.

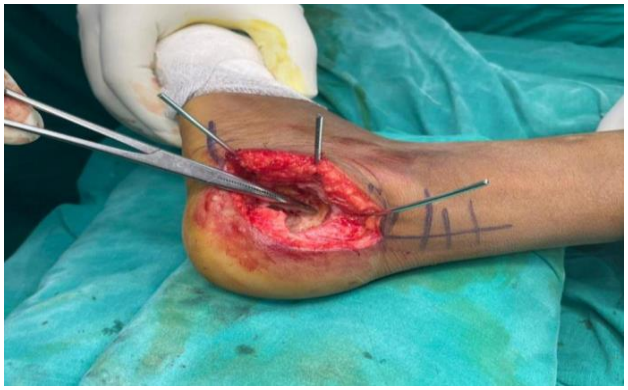

Figure 5: Curettage of the mass.

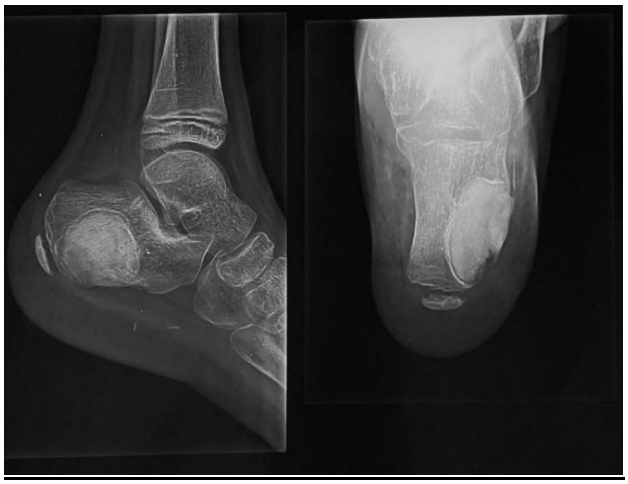

Figure 6: Post operative follow up X ray showing complete healing of wound.

DISCUSSION

CMF is a very rare benign aggressive cartilaginous tumour accounting for <0.5% of all bone tumors; out of which 75% in metaphysis of long bones (53% proximal Tibia, 27% distal femur and 20% fibula). Hence, calcaneum is very rare site.[4] The tumor is local, slowly increasing, palpable, tender tumor mass fixed to underlying bone rarely metastasizes and sarcomatous degeneration is also rare.[2] The average incidence is 26-29 years while in this case it is just 11 years.[5] Radiologically they present as large translucent mass of variable size located eccentrically in the metaphysis (95%). In small bones they are usually eccentrically located.[5]

A 22-28% cases are misdiagnosed as being reported in literature.[4] A pathologic fracture, although rare, might occur if a longstanding lesion is allowed to expand within the small bones of the foot.[6] In this case; it could be misdiagnosed as chondroblastoma or Low-grade osteosarcoma as they are very close differentials to CMF. Prognosis of recurrence with en bloc resection is rare, curettage and bone grafting are 15%. Recurrence may occur if curettage alone is done and more commonly among children (12-80%). If recurs despite wide excision

then determine whether malignant transformation has occurred and appropriate treatment in form of local excision or amputation has to be done.[2]

CONCLUSION

The clinical symptoms, radiological findings and histopathological examination in the present case were all pointing for the diagnosis of CMF. Carefully performed curettage and bone grafting is an effective treatment method that reduces the patient's pain, increases the function and the quality of life in the treatment of CMF of the calcaneus. CMF in the calcaneus may not be as rare as it is thought, and should be considered in the differential diagnosis.

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

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Cite this article as: Rajpurohit N, Shariff F. A rare location of the rare tumour-chondromyxoid fibroma of calcaneum. Int J Res Orthop 2024;10:189-91.