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Chondro-Myxoid Fibroma At Metaphysio-Diaphyseal Junction Of Proximal Tibia In 40 Year Male: A Case Report

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Abstract
Chondromyxoid fibroma (CMF) is a rare, benign tumour of the bone. It represents less than 1% of all bone tumours. We present a case of a 40-year-old male who came with chief complaints of pain and swelling in right leg for 3 months. Radiograph showed features suggestive of large multiloculated osteolytic, radiolucent lesion with thinned out cortices in right proximal tibia, Patient underwent curettage of tumour followed by reconstruction with allograft, biopsy reported as chondromyxoid fibroma. Final histopathological report showed features suggestive of chondromyxoid fibroma. Patient made uneventful recovery with no signs of recurrence and good functional range of motion (ROM) of the knee joint. Histopathology is the gold standard and mandatory for confirmation of the diagnosis. Curettage and filling the defect with bone graft is the mainstay treatment of choice.

Keywords: *Chondromyxoid fibroma, Bone tumour, Curettage, Allograft, G Bone*

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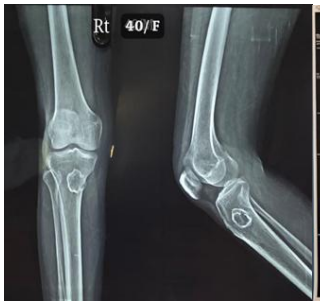
I. Introduction

Chondromyxoid fibroma (CMF) is a rare benign tumour apparently derived from cartilage-forming connective tissue. CMF accounts for less than 1% of all bone tumours.1 Previously it was considered to be myxoma or myxomatous variant of giant cell tumour.2 CMF may occur at any age, more commonly affecting second to third decade of life, with slight male predominance.3,4 About two-third of all cases arises from tubular long bones most commonly metaphyseal region with approximately one- third of them arising from tibia.1,3 The proximal tibia is the most common site of involvement followed by distal femur.4 Clinically pain is the most common presenting symptom associated with localized slow growing mass.2 On radiography appears as a well circumscribed lesion with a rim of sclerosis.5 There is no specific management protocol for chondromyxoid fibroma due to limited published articles and research. Treatment consists of resection or extended curettage with bone grafting. Bone grafting the risk of recurrence.

II. Case Study

A 40-year-old, female presented to OPD with complaints of Pain in right leg for 3 months, which was insidious in onset, gradually progressive, dull aching type associated with swelling at proximal aspect of right leg. There was no history of fever, weight loss, morning stiffness, loss of appetite, evening rise of temperature. On examination there was no local rise of temperature, a solitary mass of 10×8 cm present at anterolateral aspect of right proximal leg, skin over the swelling appears normal, diffuse in- distinguishable margins, tender with smooth surface and hard in consistency. Radiograph revealed a large osteolytic, radiolucent lesion with thinned out cortices present over proximal one-third of right tibia at meta-diaphyseal junction, sparing epiphysis. MRI showed exophytic mass lesion in the posterior aspect of proximal tibia. STIR hyperintense marrow edema was seen in proximal tibia and was reported as features suggestive of osteosarcoma. In order to confirm our diagnosis, Biopsy for the tibial mass reported as benign bone tumour suggesting features of chondromyxoid fibroma.



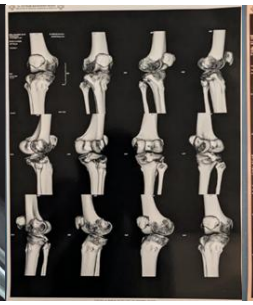
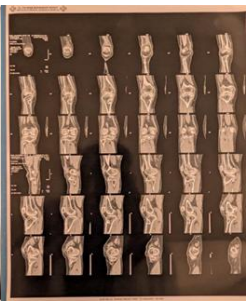
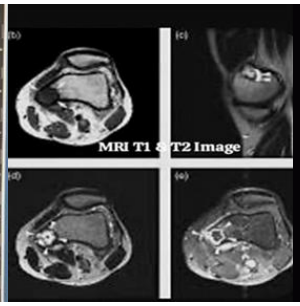



Fig1 X-Ray Fig 2 CT scan

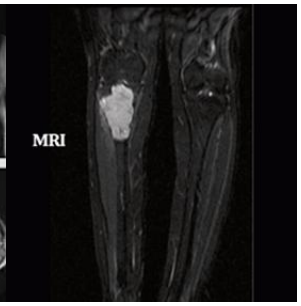


Fig3 MRI

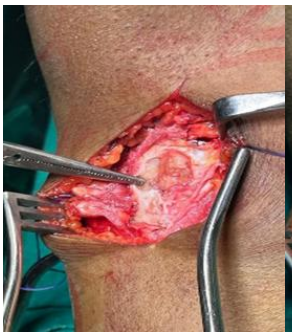
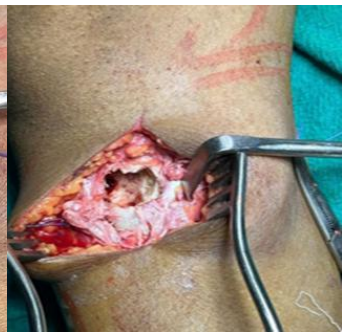
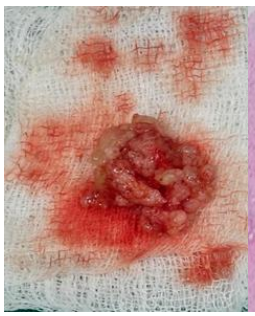
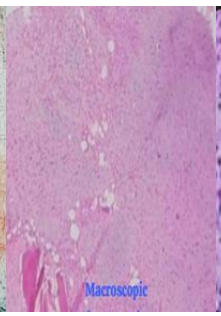



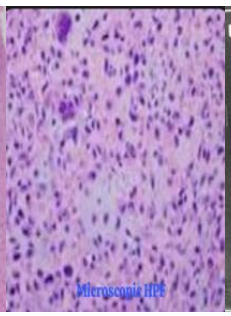
Fig 4 intra-Operative Fig 6 Bone Cyrreted

Surgical procedure

Under spinal anaesthesia, patient placed in supine position on a radiolucent table. Under aseptic precaution, parts painted and draped. Tourniquet inflated, a 14 cm skin incision taken curving the incision anteriorly over Gerdy tubercle and then extend it distally via antero- medial approach.

Incision deepened as there is no internervous plane in this approach. from the medial aspect of the tibial shaft. Tumour visualized appeared grey-white to grey-brown colours ,Curettage was done followed by high-speed burr to clear tumour from its cavity .The sample was sent for histopathology. The defect was reconstructed with allograft and incision closed in layers. mobilisation with support. Complete suture removal was done after 1 weeks and knee ROM was started. After serial post operative radiographs monthly, she was advised partial weight bearing after 3 months and gradually progressed to full weight bearing without support. On follow up, patient is currently pain-free and knee ROM 0-110 degree, he was able to carry out activities of daily living independently.



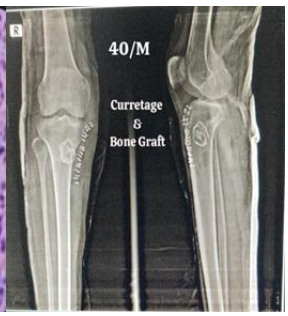


Fig 7 Curreted Material Fig 8 Microscopic Fig 9 HPF Fig 10 with Bone Graft

III. Discussion

CMF is a rare, benign and locally aggressive lobulated cartilaginous neoplasm with zonal architecture composed of chondroid, myxoid, and my fibroblastic areas.[5] The tumour was first described by Jaffe and Lichtenstein in 1948 when they presented 8 cases and emphasized the danger mistaking this benign neoplasm for a malignant lesion, especially chondrosarcoma.[1]. CMF is commonly found in metaphyseal region of long bone. The most common site is the proximal tibia, estimated at 28%–52% of all lower extremity based on literature.[7]. Most of the lesions are medullary in location (95%), but rarely subperiosteal, juxtacortical and intracortical occurrences are also known. CMF is associated with clonal abnormalities of chromosome [6,3]. Occasionally, these tumours are asymptomatic incidental findings on radiography.[1] Radiographic features show geographic bone destruction, with either partial or complete erosion of the cortex.[8] It may mimic non-ossifying fibroma by its a bubbly appearance. Unlike other cartilaginous lesions, radiographic evidence of intralesional calcification usually is uncommon.[4] They may appear as "bite-like" destruction. Cortex may be thinned out with mild expansion or break in the cortex with an extraosseous soft-tissue component.[3]. However approximately 10% of cases may show focal calcified matrix, more often detectable on CT.[5] On MRI, CMF shows multilobulated pattern, low signal intensity on T1- weighted images and high signal intensity on T2-weighted images. With Contrast, central portion of lesion may show no enhancement due to the myxoid component.[2]

Gross features of CMF include well defined margins, grey or white tumour, cystic change, lack of obvious necrosis, and liquefaction. Tumour is typically well demarcated, multilobulated and scalloped margins.[5]., Microscopically, chondromyxoid fibroma appears lobulated. The center of the lobules contains loose myxoid tissue composed of stellate or spindle shaped cells, and the periphery contains a more cellular fibrous tissue. The background often appears chondroid, although distinct areas of hyaline cartilage are rare. Microscopic calcification may be present. There are no major recommendations of CMF management due to the tumour being extremely rare.

The management options include curettage and Bone Graft, with filling of the cavitary defect. Wide resection or en-bloc excision is probably the best method to avoid recurrence, but not all locations allow the mechanical imbalance these procedures can cause, so bone grafting is advised.[9]. With curettage alone, a 13-25% recurrence rate has been reported. The recurrence rate has been reduced with the use of allograft bone or polymethylmethacrylate.[10,11]. Gherlinzoni et al, recommend curettage with bone grafting as the first line of treatment. They found that the 80% recurrence rate in their series using curettage alone decreased to 7% with the addition of bone grafting. Till date, there has been no published study on metastases from CMF.[12]. In the present case, we carried out tumour curettage and filling the defect with bone graft.

IV. Conclusion

Chondromyxoid fibroma is a rare benign bone tumour, in 40 year female, It is often misdiagnosed as malignant neoplasm. Histopathology is the gold standard and mandatory for confirmation of the diagnosis. Curettage and filling the defect with bone graft has shown good outcome and no reccurance

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