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Case Report

# Chondromyxoid fibroma of calcaneum

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ABSTRACT

26 years old male came to us with H/o pain in the left calcaneum. X-ray showed a lytic lesion in the body of the calcaneum. MRI scan was done & blood investigations were normal. Open biopsy & histopathological examination proved the diagnosis of chondromyxoid fibroma. He was treated in form of curettage & bone grafting taken from left iliac crest along with artificial G-bone. Chondromyxoid fibroma is a rare benign tumor of the bone accounting to <1% of bone tumors. It's occurance in calcaneum is rare. Here we report a rare case of the same.



## 1. Introduction

Chondromyxoid fibroma (CMF) or Fibromyxoid chondroma is a rare bone tumor commonly affecting the adolescents & young adults, Alchermes SL et al[1] . It is a benign cartilaginous tumor mainly consisting of myxomatous substance tissue. It is mistaken for malignant bone tumors owing to its variable histologic appearance, Ebrahimzadeh MH et al[2]. It is second most commonly seen in the small bones of the feet. Advanced imaging studies usually point to bone cyst like lesions, Adler CP[3] . A quick & accurate diagnosis can prevent unnecessary treatment to the patient which could be harmful.

## CASE REPORT

A 26 year old male patient presented with a history of mild persisting pain of the left ankle & heel, more so during walking & standing for long. His occupation required long standing but was finding it difficult due to pain. He initially took analgesics which did not help. Later he consulted us. On detailed history a small swelling was noted over the left ankle & heel which gradually increased in size. He had no history of trauma, loss of weight or appetite. Constitutional symptoms were absent. His pain & swelling was partly relieved with rest & analgesics. However he continued to struggle & walk with a limp. No other joint was involved & he continued his acts of daily living with difficulty.

**Examination:**

A diffuse swelling was noticed at the lateral side of the left ankle near calcaneum extending from just below the lateral malleolus upto the mid-foot. The swelling was tender to palpate & hard in consistency. Movements of the ankle & subtalar joint was restricted with pain. He was provisionally diagnosed as chronic synovitis of the subtalar joint.

**Investigations:**

Blood counts were within normal limits.

X-ray of the left ankle & foot revealed a radiolucent mass of variable size located eccentrically in the calcaneum (Fig 1). The inner margins of the lesion appeared sclerosed while the outer margins appeared expanding & thinned out. MRI scan was done to confirm the diagnosis which read as chondromyxoid fibroma of calcaneum or bone cyst (Fig 2).

Open biopsy from the lateral side of the calcaneum proved to be chondromyxoid fibroma.

**Fig 1: X-ray showing Chondromyxoid fibroma of calcaneum**

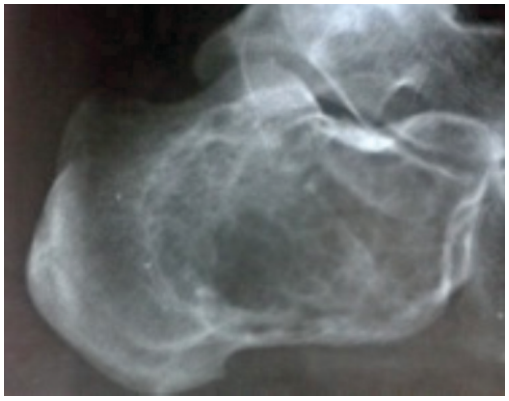

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**Fig 2: MRI showing Chondromyxoid fibroma Lesion in calcaneum**

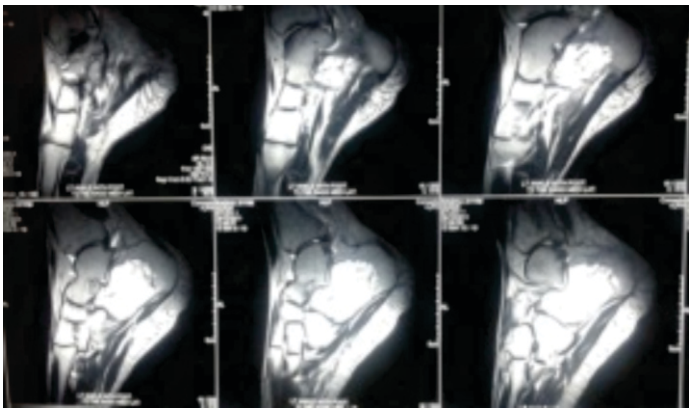


**Fig 3: Immediate Post-op X-ray consolidation**

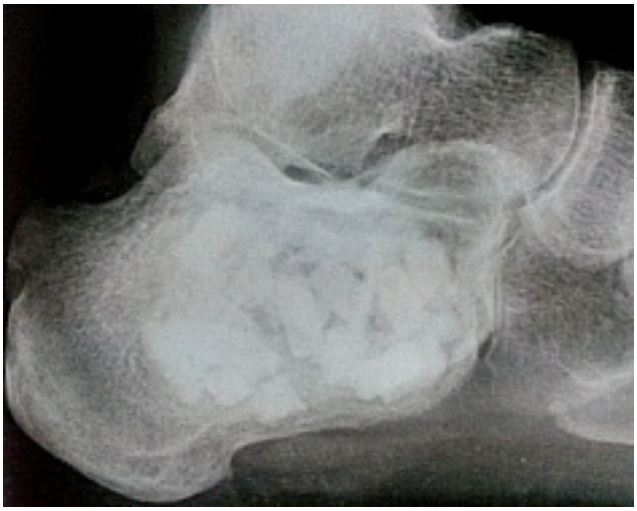
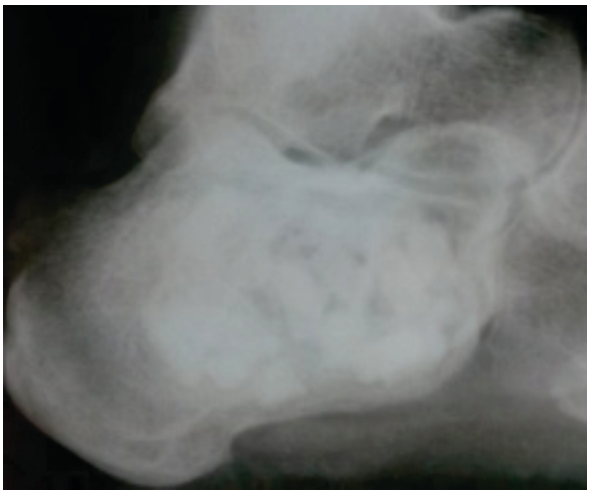


**Fig 4: 2 year follow-up X-ray showing**



**Management:**

Under spinal anesthesia & using a lateral approach complete excision of the tumor along with curettage was done & the void was filled with massive left iliac bone grafts along with G-bone (artificial bone) (Fig 3). Post-operatively he was given a back slab along with the routine analgesics & antibiotic cover (IV Ceftriazone for 3 days). Suture removal was done on the 14th post-operative day & the wound had healed by primary intention. Full weight bearing was allowed at 5 months duration. At about 6 months patient noticed a small discharge from the surgical wound which proved sterile on culture & it was attributed to G-Bone which subsequently settled by itself. On check x-rays the graft was found consolidating well & no recurrence was noted at 2 years interval (Fig 4).

**DISCUSSION:**

Chondromyxoid fibroma was first described by Jaffe & Lichtenstein in 1948 Lichtenstein L[4]. It was previously classified as myxoma of bone as described by bloodgood JC[5] in 1924 of the myxomatous variant of GCT. It arises from cartiliage forming connective tissue of marrow. Clinically it is most often seen in the 2nd & 3rd decade of life, Bill Chang K et al., [6]. More than 85% present with pain with or without palpable swelling & tenderness. Sometimes it presents as a pathological fracture. 70% occur in the lower extremity with 1 in 12 cases occur in the calcaneum. Average age incidence is around 26 -29 years comparable to this case. Male to female ratio being 1.5:1 , Ebrahimzadeh MH et al[2], Bill Chang K et al., [6]. The tumor is local, slowly increasing, palpable, tender tumor mass fixed to underlying bone rarely metastasizes & sarcomatous degeneration is also rare, Ebrahimzadeh MH et al.,[2]. Radiologically they present as large translucent mass of variable size located eccentrically in the metaphysis (95%). In small bones they are usually eccentrically located. <2% present as pathological fracture, Lichtenstein L[4]. Vertebral lesions are more aggressive with marked bone destruction & involvement of posterior elements, Kenan S et al.,[7]. Cystic lesions are best revealed in an MRI. T1 weighted images are hypotense to muscle, well circumscribed, lobulated & enhancing while T2 weighted images are hyperintense to muscle. CT scans show sclerotic margins well with expansile & lobulated lesions. However, Mitchell. M et al.,[8] concluded that MRI is ideal to diagnose CMF. Gross appearance of the tumor is rubbery white to gray-white & glistening bluish tumor with areas of hemorrhage & cysts, lobulated without invasive characteristics. The consistency is usually firm & the cut surface shows mucoid tissue sometimes within small cavities resembling cartilage, Murata H et al.,[9], Schajowicz F et al.,[10]. Microscopic appearance of the tumor is composed of lobulated or pseudolobulated areas of stellate cells with indistinct cytoplasmic borders lying within the central portion of the lobule & widely separated by intercellular mucin like material. At the periphery of the lobule the appearance is hyperchromatic, hypercellular, pleomorphic, bizarre shaped & often with multiple nuclei indicative of malignancy. Malignant transformation is highly unusual. Differential clincopathological diagnosis include a large variety of bone cysts (ABC, UBC, GCT) for tumors in long bones, enchondroma around the phalynx & long tubular bones, & conventional

chondrosarcomas are all to be ruled out, Schajowicz F et al.,[10] & Perdiue RL et al.,[11]. Management & treatment consists of en-bloc excision & filling the cavity with allograft & artificial bone grafts. PMMA packing have also been reported with good results. Recurrence may occur if curettage alone is done & more commonly among children (12-80%). If recurs despite wide excision then determine whether malignant transformation has occurred & appropriate treatment in form of local excision or amputation has to be done, Ebrahimzadeh MH et al.,[2] & Perdiue RL et al.,[11].Conclusion: In our present case the symptoms were similar to CMF with a palpable firm to hard tender mass around the calcaneum. Radiological & MRI scan showed a lytic expansile eccentrical well circumscribed lesion without break in the cortex or invasion suggesting a benign lesion. Open biopsy proved the diagnosis of CMF. Management in form of wide excision of the tumor & packing of the massive allograft & artificial G-bone was done. Recent follow-up >2 years shows good incorporation of graft with no recurrence & the patient is doing well. This pathological lesion is reported for its rarity of occurrence.

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