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Case Report

Gaint cell tumour of phalynx: have you seen it?

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ABSTRACT

Giant cell tumors are rarely seen in the foot. Only 1-2% cases of GCT occur in the foot. They can cause a significant amount of pain and deformity due to their aggressive and recurrent nature whenever it occurs in foot. We present an unusual case of a giant cell tumor of proximal phalynx of middle toe of left foot. 26 year old male came with complaints of pain and swelling over the middle toe of left foot since 6 months. Clinical and radiological features showed features consistent with GCT. Foot Function Index revealed a) Pain scale: 29 / 50 = 58%, b) Disability scale: 56 / 90 = 62%, c) Activity limitation scale: 8 / 30 = 27%. Authors performed enbloc resection with ray amputation of 3rd toe. Histopathological examination of excised specimen revealed classic findings of mononuclear cells with interspersed fibro-collagenous strands and numerous multinucleated osteoclast-like giant cells which confirmed our diagnosis. Patient was serially followed up and at 6 months followup, there were no signs of recurrence with markedly improved foot function index.

Keywords: Gaint cell tumour, Gaint cells, Osteoclastoma, Phalynx, Ray amputation

INTRODUCTION

Giant cell tumors (GCT) also known as Osteoclastoma is common benign osseous tumour usually seen at the end of a long bone after skeletal maturity.[1,2] Even though its a benign tumour, its not uncommon to show features of local recurrence, potential for metastases and malignant transformation.[1] Giant cell tumors accounts for 20% of all benign bone tumors and approximately 6% of all bone tumors.[3] It represents approximately 3%-5% of all primary bone tumors. It is common in adults between the ages of 20 and 40 years. 75%-90% of GCTs are located at the epiphysis of long bones and in most series, common sites are proximal tibia, distal femur, and distal radius.[4] The bones of the hands and feet are uncommon locations with a prevalence of <2%. Multicentric GCT has been reported in <1% of cases with lesions often located in the distal extremities particularly the hands and feet.[5] Foot as site is very rare and it represents less than 1.2%.[6] If it occurs in Foot, it occurs more often in a younger female population and it appears to present a more aggressive behaviour than in other locations.[7] Very few cases have been noted in literature of phalynx of the foot.

Authors presents a case of a giant cell tumour of the third proximal phalangeal bone in a 26 year old treated with en bloc resection.

CASE REPORT

A 26 year male patient presented to Vydehi institute of medical sciences and research with complaints of pain and swelling over the middle toe of left foot since 6 months with history of trivial trauma while playing football. Following trauma, he initially noticed a small diffuse swelling of third toe which gradually progressed in size. Swelling was associated with pain which gradually progressed in severity with increasing size of swelling. Patient had showed at local hospital who had done biopsy 2 months before he presented to us and had

diagnosed to be GCT and advised excision. Biopsy was done at local hospital 2 months before presentation which showed features consistent with GCT. Foot Function Index revealed a)Pain Scale: 29 / 50 = 58%, b) Disability Scale: 56 / 90 = 62%, c)Activity limitation Scale: 8 / 30 = 27%.[8,9] On physical examination, the middle toe was grossly enlarged of size 5x5 cm with mild tenderness (Figure 1) and variable consistency.

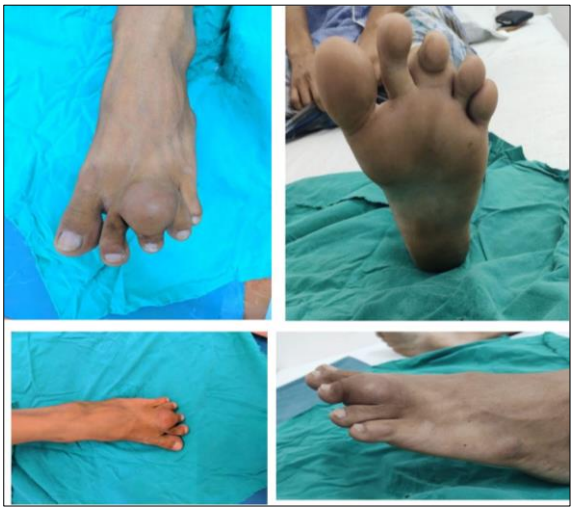

Figure 1: Clinical picture.

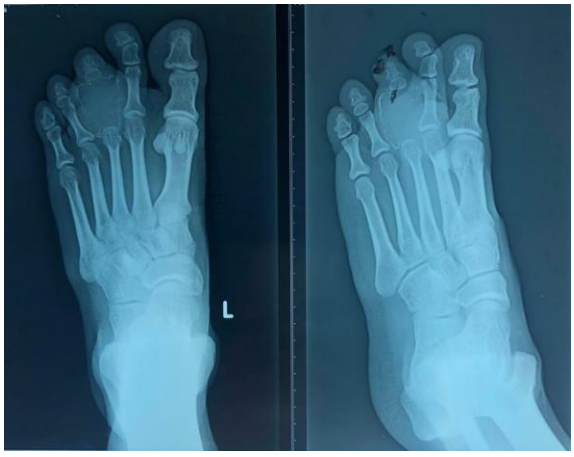

Figure 2: Geographic lytic lesion centrically located involving almost the whole of 3rd proximal phalynx involving even the joint surface with cortical breech.

Skin over the swelling appeared thin and shiny with engorged veins. The radiographs showed a locally aggressive, geographic lytic lesion centrically located involving almost the whole of 3rd proximal phalynx involving even the joint surface. The lesion had expanded the cortex, permeated through the bony confines, extended into the surrounding soft tissues, and no periosteal reaction was noted. According to campanacci radiographic staging system this lesion was classified as a grade III osteoclastoma (Figure 2).

MRI with CT screening report showed expansile lytic lesion with thinning of cortex, heterogeneous signal intensity, significant edema around the lesion, articular surface appear spared with mild indentation over adjacent tendons (Figure 3).

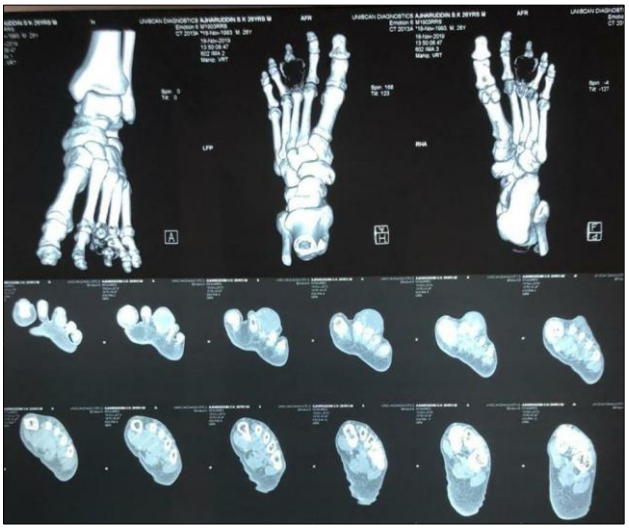

Figure 3: Expansile lytic lesion with thinning of cortex, heterogeneous signal intensity, significant edema around the lesion, articular surface appear spared with mild indentation over adjacent tendons.

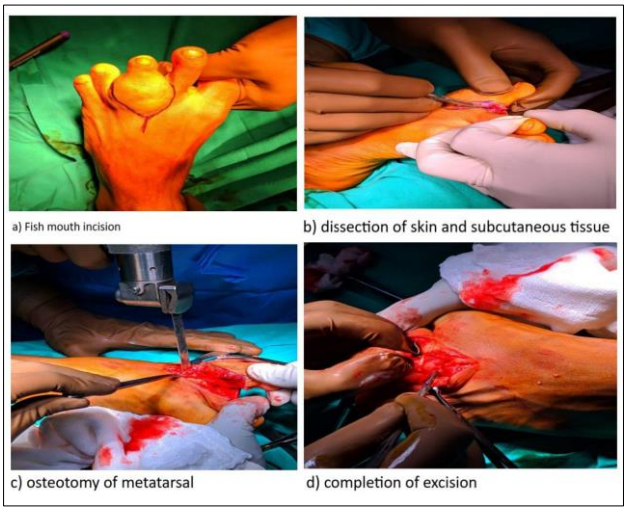

Figure 4: Surgical technique of enbloc excision with ray amputation of 3rd toe.

Patient had underwent biopsy 2 months before presenting to us which reported to be GCT. Chest X-ray was normal. All Lab reports were normal except for mildly raised ESR and CRP. Since the tumor was locally aggressive we planned for ray amputation. Nature and prognosis of the tumor and the proposed treatment was explained to the patient. Consent was taken for the same. The lesion was treated with ray amputation of 3rd toe and the specimen was sent for biopsy (Figure 5). Fish Mouth incision was put including 2nd and 3rd web space. Skin and

subcutaneous tissue was dissected, the mass was dissected en mass until adequate margins was obtained. Resection of metatarsal head at its base was done removing almost distal 1/3rd of 3rd metatarsal bone (Figure 4,5,7).

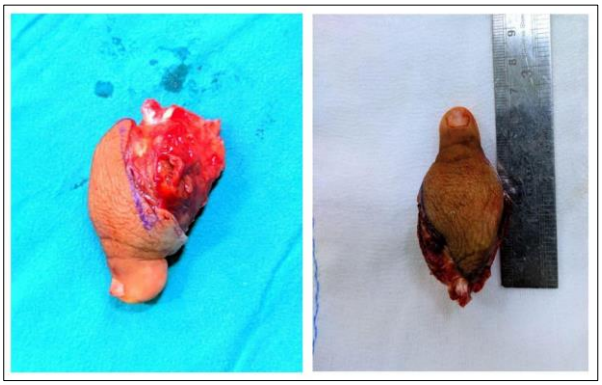

Figure 5: Excised toe with lesion.

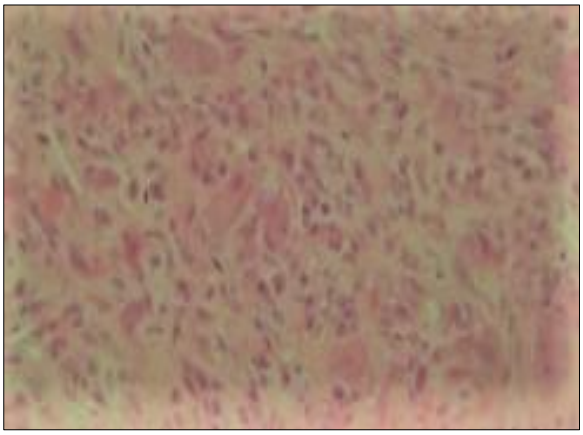

Figure 6: Classic findings of mononuclear cells with interspersed fibro-collagenous strands and numerous multinucleated osteoclast-like giant cells, no atypical cells.

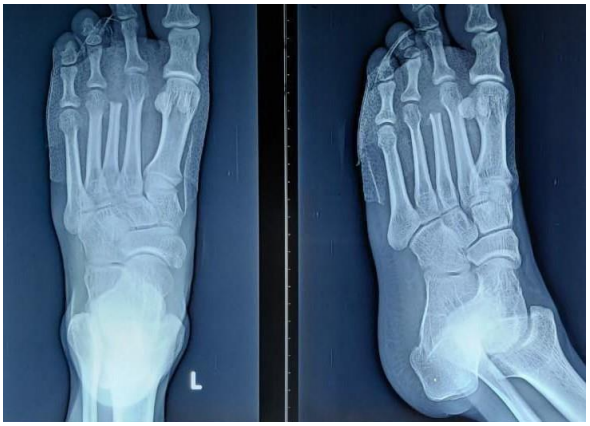

Figure 7: Post operative x-ray.

The histological findings were consistent with a grade III giant cell tumour (Figure 6). At six months follow-up there were no symptoms/signs suggestive of recurrence. Foot Function Index at 6 months revealed improved a) Pain scale: 6 / 50 = 12%, b) Disability scale: 17 / 90 = 19%, c) Activity limitation scale: 2 / 30 = 7%.

DISCUSSION

Giant cell tumor is typically seen in patients 20 to 40 years of age. They are most commonly seen in the metaphyseal and epiphyseal regions of the distal femur, the proximal tibia, the distal radius, and the proximal humerus.[10-13] Foot is a rare site for GCT, accounting for about 1% of giant cell tumors, but when a benign tumor is diagnosed in bones of hand or foot, perhaps GCT is the most common diagnosis.[2] Majority of GCT of foot occur in either calcaneus or talus with only scattered case reports pertaining to occurrence in other bones especially phalanges.[2] Review of published literature yields only four reported cases of giant cell tumor involving phalangeal bone of foot.[1,12-14] GCT in foot is characterized by higher incidence of multicentricity, younger age at presentation and shows more aggressive behavior.[7] Our case belong to the typical age group but 3rd proximal phalynx is rare site. In fact we could find only one case reported which is exactly similar to our case reported by Moez et al.[15] The standard treatment of giant cell tumour of bone involves an aggressive curettage with or without grafting by packing the cavity of the excised tumour with morselised iliac cortical and cancellous bone or a diaphyseal segment of the fibula or with acrylic cement reconstruction.[16] This treatment is considered to be a safe and effective procedure that provides adjuvant therapy and immediate stability for early rehabilitation.[17] One of major drawback with curretage by intralesional excision is local recurrencesa and the reported incidence of local recurrence with this technique is as high as 40-60%.[18] There has been a great deal of effort to optimise excision of tumourous tissue following curettage, by chemical (phenol, chlorpactin,) or physical means to decrease recurrence rate by inducing necrosis of any remaining neoplastic tissue . Therefore, preferred treatment whenever feasible is en bloc resection of the involved bone segment decreasing the chances of recurrence. In our case, tumour showed signs of local aggressiveness and was severely affecting his function as indicated by his poor Foot function index. Moreover ray amputation of toes is known to provide excellent cosmetic appearance along with good function of foot.[19] Hence we went for ray amputation in our case but we resected only distal 1/3rd the 3rd metatarsal as adequate margins were achieved. Patient was serially followed up and at 6 months follow up, we did not find any signs of recurrence and his function was improved.

CONCLUSION

Giant cell tumours of phalangeal bones of the foot are very rare and has a more aggressive behaviour affecting the function of foot. The treatment of choice for these tumour is en bloc resection with ray amputation of

involved toe. This not only ensures complete resection of tumour, lower chances of recurrence but also improves the function of involved foot.

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