Research Paper

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Giant Cell Tumor Of The Fifth Metatarsal: A Case Report

Medical Science

KEYWORDS : Giant cell tumor, osteoclasoma, metatarsal, curettage, bone grafting

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ABSTRACT

Introduction: *Giant cell tumor (GCT) is a, benign osteolytic tumor which is locally aggressive. It mostly occurs in young adults in the region of epiphysis. It is mainly found in long bones (80-90%). 5% of GCT may also be found in iliac bone and spine. Only as few as 2%of them are found in small bones of hand and feet. Very few cases of GCT have been reported in metatarsals. So, very less data about the proper management of these types of tumors is available in literature.*

Case Report: *We report a case of GCT of 5th metatarsal in a 26 year old male who presented with foot pain and mild swelling since 6 months. A diagnosis of GCT was made on the basis of clinical, X ray and MRI features and confirmed by histopathological examination of the biopsy material and was managed by intralesional curettage and autogenous bone grafting. The case was followed up for 6 months and showed no signs of recurrence and good clinical and radiological outcome.*

Conclusion: *We concluded that giant cell tumors could present at uncommon sites also, and they should be considered in the differential diagnosis of lytic lesions of the epiphyseal region. The management principles, however, remain the same as other bones.*

Introduction

Gait cell tumor (GCT) or osteoclastoma of bone is a benign but locally aggressive tumor found mainly in epiphysis of long bones of young adult of 15-35 years, with slight female predominance. Microscopic examination of these tumors revel osteoclast giant cells with multiple nuclei residing in a spindle cell stroma.80-90% are found in long bones, of which 50% occur in lower end of femur or upper end of tibia. It is also found frequently in distal radius, proximal humerus and fibula. 4% of them occur in pelvic bone and spine [1-4]. Involvement of small bones of hand and foot is very rare. With an incidence of 2% in the hand and 1.5 % in the foot (phalanges being more involved than metacarpals and metatarsals) [7-9]. We present a case of GCT of 5th metatarsal which is very rare with no such case reported as per our knowledge and a thorough search in literature.

Case Report

A 26-years- old male presented to us with the chief complaints of mild swelling and pain over the lateral border of right foot for the duration of 6 months. Swelling was insidious in onset and has progressively increased in size. Pain was mild to moderate in intensity, dull aching, continuous relieved by taking medication and rest, aggravated by activity. There was no history of any constitutional symptoms and trauma.

On physical examination, there was mild swelling over the lateral border of right foot with well-defined margins and normal overlying skin. Swelling was tender on deep palpation, hard in consistency, overlying skin was free.

Radiographs revealed an osteolytic lesion at base of 5th metatarsal involving the articular surface of tarso-metatarso joint and with cortical thinning **[Fig 1]**.

MRI was done to determine the true extent and nature of the lesion, which revealed lytic lesion at base of 5th metatarsal which was hypointense on T1W and hyperintense on T2W, septations within and well defined margins and minimal extraosseus extension **[Fig 2]**. It measured 20X30X11mm.

Since clinical and radiological findings were consistent with GCT [1,2,5], and the size of lesion was small with no breaching of articular surface, curettage of the lesion was done after opening a cortical window in the bone from lateral side **[Fig 3 a,b]**. After thorough curettage, cauterisation with hydrogen peroxide was done and cavity was washed thoroughly with normal saline. The material was sent for histopathological examination. The cavity was filled with autogenous cancellous bone graft taken from iliac crest and wound was closed. A below knee POP slab was applied for two weeks after which stitches were also removed. The patient was followed up at 1 month, 3 months and 6 months' interval. X ray was done at follow up which showed no signs of recurrence and After 6 months of follow-up **[Fig 4]**, the graft was well taken up and there were no signs of recurrence both clinically and radiologically.

Discussion

Giant cell tumor of the bone is a benign, but locally aggressive lesion. It is a relatively rare tumor. It is composed of stromal cells and multinucleated giant cells that exhibit the phenotypic features of osteoclasts [2,5].

Giant cell tumor mainly occurs in the long bones [75-90%] especially the lower end of femur and upper end of tibia. Other common sites are distal radius and humerus. Giant cell tumors of the bones of the hand and foot bones are rare. GCT of foot is even rarer than GCT of hand. GCT of the hand & foot seems to represent a different lesion than conventional GCT in the rest of the skeleton. Owing to the rarity of these tumors in these locations, various differential diagnoses should be kept in mind such as giant cell tumor, giant cell reparative granuloma, aneursymal bone cyst, chondromyxoid fibroma, brown tumor of hyperparathyroidism, angiosarcoma, myeloma, and an expansile metastatic lesion, such as renal cell carcinoma.

The various treatment modalities described in literature are curettage, curettage and bone grafting, irradiation, amputation, and resection with reconstruction [7-11].

In our case, curettage with bone grafting was the preferred choice because the size of the lesion was small and anatomy of the host bone was preserved. Moreover, there was no intraarticular breaching. The tumor mass was carefully curetted out after making a large cortical window and the defect was filled with bone graft, which got incorporated in the recipient bone and there were no clinical or radiological signs of recurrence.

Conclusion

We concluded that giant cell tumors could present at uncommon sites also, and they should be considered in the differential

diagnosis of lytic lesions of the epiphyseal region. The management principles, however, remain the same as other bones. A thorough curettage and bone grafting can give good results in these cases where there is no cortical expansion and nil to minimum articular breaching.

Clinical message:
Giant cell tumors may be found in small bones of foot and this should be kept in differential diagnosis of chronic foot pain.. They could easily be managed by thorough curettage and bone grafting if they are of small size and detected earlier.

Consent: The patient has given their informed consent for the case report to be published.

Competing interests: *The author(s) declare that they have no competing interests*

Figures:

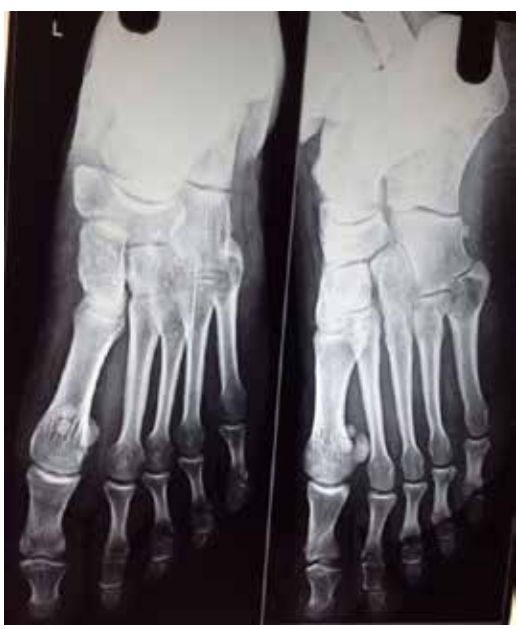

Figure 1: Pre op X rays

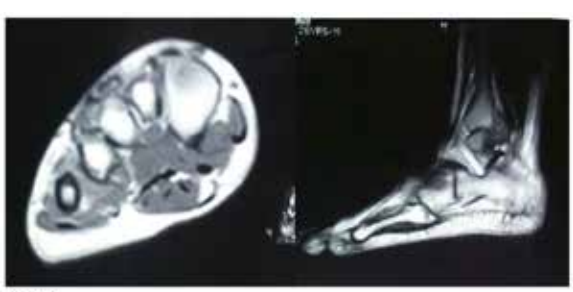

Figure 2

Figure 2: MRI showing lesion

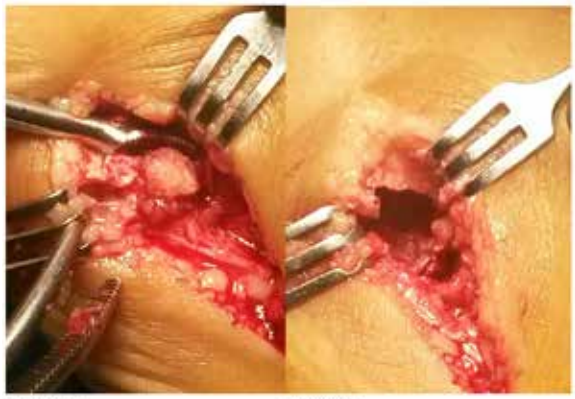

Figure 3 a Figure 3 b

Figure 3 a: Intra op curettage 3 b: cavity left after curettage

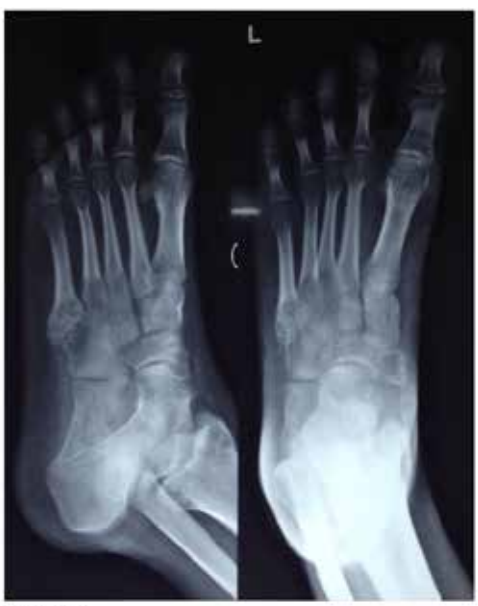

Figure 4

Figure 4: Follow up X rays

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