A rare presentation of Giant cell tumor involving the proximal phalanx of great toe - A case report

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ABSTRACT

Giant cell tumor (GCT) involving the phalanges of foot is very rare and only few cases have been reported. This case is about a 23 year old male presenting with swelling of the left great toe and core needle biopsy revealing the diagnosis of giant cell tumor involving the proximal phalanx of great toe. Patient was treated by en-bloc resection and reconstruction with a fibular graft. Early diagnosis and complete excision offers good chances of cure in GCT presenting unusual sites such as the phalanges of foot. Active surveillance is advocated in view of recurrences.

Keywords: giant cell tumor, multicentric giant cell tumor of bone, en-block

INTRODUCTION

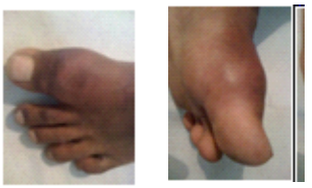
Giant cell tumor (GCT) is a benign aggressive tumour of bone with features of local recurrences, potential for metastasis and malignant transformation. It consists of spindle shaped and ovoid cells uniformly interspersed with multinucleated giant cells. Giant cell tumour accounts for approximately 6% of all bone tumours and constitutes 20% of benign bone tumors.[1] Phalanges of foot are a rare site of occurrence .We report a case of GCT of proximal phalanx of left great toe diagnosed in a 23-year-old man.

CASE SUMMARY

A 23-years- old man presented with history of swelling of left great toe for 4 months and pain at the same site for 2 weeks. Swelling was insidious in onset and has progressively increased in size. Pain was mild to moderate in intensity, dull aching, continuous relieved by taking non steroidal analgesics and rest. There is no history of any constitutional symptoms such as fever, weight loss, appetite loss or trauma to the site. Other history was non contributory.

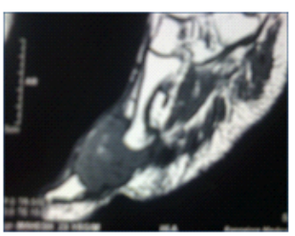
The general physical and systemic examinations were within normal limits. On local examination, the attitude of the limb was neutral. There was a diffuse swelling over the base and proximal part of left great toe. The overlying skin was stretched. Swelling was tender with local rise in temperature. Extent of the swelling was from distal one third of 1st metatarsal to interphalangeal joint of toe. Swelling was cystic in consistency and overlying skin was free. There was painful restriction in range of movements of left great toe and distal neurovascular bundle was intact. (Fig.1&2).

Fig. 1,2. Dorsal and lateral view of left foot showing swelling



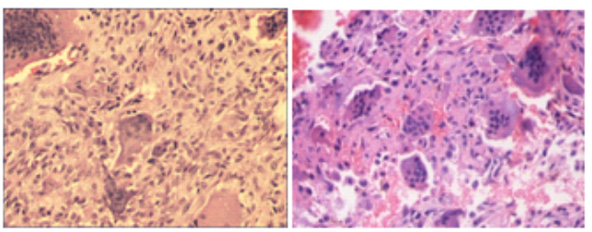
The differential diagnosis was GCT, aneurysmal bone cyst and simple bone cyst. The serum biochemistry and chest X ray were normal. Plain radiographs of the left foot revealed an expansile osteolytic lesion of the proximal phalanx of left great toe with cortical thinning. MRI of the left foot showed expansile lesion of proximal phalanx of left great toe and distal third of first metatarsal with soft tissue extension. (Fig.3.).

Fig.3.MRI of left foot oblique saggital view T1 weighted image showing well encapsulated iso intense lobulated soft tissue lesion involving the proximal phalanx of the left great toe and distal one third of the first metatarsal



Core needle biopsy showed giant cell tumor without features of malignancy. (Fig.4&5). The patient underwent enbloc resection and reconstruction with fibular graft. The first metatarsal was cut at distal one third and interphalangeal joint was disarticulated. The tumor was resected and fibular graft was fixed to the gap in the toe with K wire. The histopathology confirmed the diagnosis of giant cell tumor with subcutaneous tissue extension. There was no evidence of malignancy and margins were negative for the tumor. Follow up of 8 months has not revealed any sign of recurrence of the tumor.

Fig.4 & 5. Histopathology showing mononuclear stromal cell with osteoclastic multinucleated giant cells



DISCUSSION

The majorities of giant cell tumors is solitary and occur at the epiphysio-metaphyseal region of long bones. Approximately 50%–70% of giant cell tumors occur near the knee with distal femur and proximal tibia being the most commonly involved sites.[1,2] The other common sites are radius, sacrum and the proximal humerus. Foot is a rare site for GCT, accounting for about 1% of giant cell tumors.[3] Majority of GCT of foot occur in either calcaneus or talus; the occurrence in phalanges is very rare. Literature search yields only five reported cases of giant cell tumor involving phalangeal bone of foot.[4-8] Literature review on case reports of GCT involving phalanges of the foot are characterized by higher incidence of multicentricity, younger age at presentation and shows more aggressive behaviour.[9] It usually present with pain and swelling of the foot and diagnosis is frequently delayed as symptoms may initially be attributed to non-specific foot pathology. Radiologic features of GCT at unusual location are non specific.

The standard treatment options for GCT are curettage, extended curettage or enbloc resection. Cryosurgery and radiotherapy have also been used as treatment modalities. Choice of treatment depends on the aggressiveness of tumor, site and patient characteristics. Curettage has recurrence rates of 40-75% and en bloc resection offers reliable cure. Excision was preferred in this case due to aggressive features and low morbidity. Cryosurgery has been used as a physical adjunct to curettage in treatment of GCT. The role of radiotherapy is limited in GCT due to high propensity for malignant transformation. Its use is reserved for specific lesions of spine with cord compression and lesion which are un-resectable. Due to high rates of recurrence, active surveillance of patient is recommended.

CONCLUSION

Phalangeal bones of the foot are very rare location of giant cell tumours. It is very important to choose the optimal treatment as recurrence rates are very high at these locations. Excision offers the best chance of cure with low morbidity.

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