



GIANT CELL TUMOUR OF HAND: A CASE REPORT

Pathology

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ABSTRACT

Giant cell tumours commonly occur at the metaphysis-epiphysis region of long bones especially the distal femur. Giant-cell tumor (GCT) of the bone affecting the hand is a rare lesion that is usually diagnosed at an advanced stage and has a high rate of recurrence. These tumors are mostly benign, multifocal. It is composed of three cell types: the neoplastic GCT stromal cells; mononuclear monocyte cells; and multinucleated giant cells. Clinical imaging is basic for the diagnosis of a GCT. We are presenting a case report of a 28 years old male, who presented with a swelling in right ring finger, following trauma. X-ray showed destructive expansile lytic lesion of the middle phalanx of right ring finger. CT also showed expansile lytic lesion with ballooning of cortex involving middle phalanx with sparing the neck of phalanx. FNAC of the swelling was done and it revealed a typical benign giant cell tumor composed of closely packed stromal cells with admixture of evenly distributed giant cells.

KEYWORDS

Giant cell tumor, giant cells, stromal cells.

INTRODUCTION:

Giant-cell tumor (GCT) of the hand is an uncommon lesion that is mostly identified late in its progression and has a high recurrence rate. Giant-cell tumor of bone (GCTB) is now classified as primarily osteoclastogenic stromal cell tumor of mesenchymal origin in the literature. The use of clinical imaging for the diagnosis of GCTB is essential. This type of tumor in the hand is usually more central than eccentric.

Averill et al. divided GCTB into three grades: grade-1, quiescent, is a static form with limited cortex involvement; grade-2, active, is characterized by a thinned and bulged cortex, and grade-3, aggressive, is characterized by a lesion that penetrates the cortex and includes a soft tissue component [1].

Case Presentation:

A 28 years old male, who presented with a swelling in right ring finger, for 2 months, following trauma. The swelling was associated with pain and does not subside with analgesic but no complain of fever. On inspection the swelling was globular of size 3 x 2 cm over the middle phalanx of right ring finger, soft on consistency with complain of tenderness on touch. There were also signs of inflammation.

Investigation:

X-ray showed destructive expansile lytic lesion of the middle phalanx of right ring finger. CT also showed expansile lytic lesion with ballooning of cortex involving middle phalanx with sparing the neck of phalanx.



Figure 1. X-ray of hand AP and Lateral view showing an expansile growth of middle phalanx

Cytological Findings:

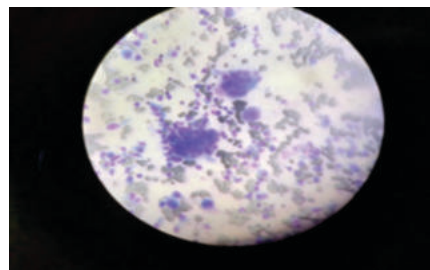


Figure 2. Mononucleated cells are osteoclast-like and are associated with clusters of mononucleated cells.

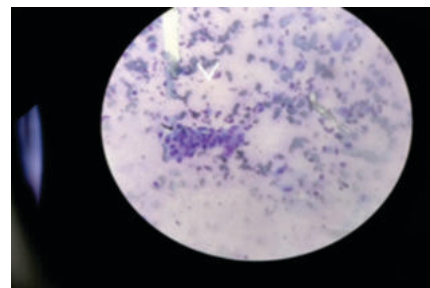


Figure 3. shows oval mononuclear cells in cohesive clusters bordered by multiple multinucleated giant cells.

DISCUSSION:

GCT of bone is one of the most common benign or locally aggressive bone tumors, especially in the epiphysis region. Peak incidence of GCT is the third and fourth decades of life.

GCT of the hand bone is a rare but distinct and more aggressive lesion than GCT of the rest of the skeleton, only 2% of all hand tumors [2], but unacceptably high recurrence rates (up to 90%) have been reported by several authors. In comparison to other sites, GCT of the hand is more aggressive locally, develops faster, and has a higher recurrence rate [3]. The early radiological appearance of GCT can be mistaken for enchondroma, however, the more aggressive nature of hand GCT can help distinguish the two entities.

Primary GCT of hand bones differs from GCT of other long bones in that this is usually seen in the diaphyseal region as compared to the epiphyseal region of long bones [4]. The imaging modality of choice

for diagnosing GCT is MRI, which aids in determining the size of the lesion as well as intra- and extra-osseous dissemination. The imaging findings can resemble enchondroma mostly, which is more frequent in the hand [5].

Curettage, curettage and bone graft, en-bloc resection, amputation, and resection with reconstruction are some of the treatment options mentioned in the literature, however, curettage alone or curettage with bone graft is ineffective even for giant cell tumors of the long bones and hand [6]. Such a surgery leaves a skeletal void, necessitating a difficult reconstructive treatment including autograft, allograft, or silastic (synthetic) implant restoration. Chemical adjuvants, such as phenol, can be utilized as cytotoxic agents. In situations with uncontrolled recurrence, en-bloc resection is reserved as a last option [7].

CONCLUSION:

GCT of phalanx bone presents as a challenge to the surgeon because of the rarity of its occurrence. Through this case report, we intend to lay down early diagnosis and principles of management of such rare cases and broaden the discussion on existing literature of this rare presentation of bone malignancy in younger aged patient.

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