

Large Giant Cell Tumour of Distal Femur in 88 Year Old Male Patient: Treatment with Extended Curettage and Bone Cement - A Rare Case Report.

¹Umesh Yadav, Assistant Professor, Department of Orthopaedics, PGIMS, Rohtak

²Zile Singh Kundu, Ex Senior Professor, Department of Orthopaedics, PGIMS, Rohtak

³Kshitish Chandra, Behera – Senior Resident, Department of Orthopaedics, PGIMS, Rohtak

⁴Himanshu Bansal, Junior Resident, Department of Orthopaedics, PGIMS, Rohtak

⁵Ashish Devgan, Senior Professor, Department of Orthopaedics, PGIMS, Rohtak

⁶Vasudha Dhupper, Assistant Professor, Department of Biochemistry, PGIMS, Rohtak

⁷Ravi Sihag, Junior Resident, Department of Orthopaedics, PGIMS, Rohtak

Corresponding Author: Umesh Yadav Assistant Professor, Department of Orthopaedics, PGIMS, Rohtak

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Abstract

Giant cell tumour (GCT) is a locally aggressive benign tumour of bone predominantly involving age group 20-40 years. Knee (lower end of femur and upper end of tibia) remains the most common site of the tumor. We are reporting a case of lytic lesion lower end of femur in an 88 year old male which turned out to be giant cell tumour which was treated with extended curettage and bone cement. At four years follow up the patient is disease free with no recurrence or metastasis and achieved 80 degree of knee flexion. GCT is extremely rare in extremes of ages and lytic lesion in old age patient, metastasis should be kept as differential.

Keywords: Giant cell tumour, Curettage, Bone Cement

Introduction

Giant cell tumour (GCT) is benign to aggressive lesions which are frequently encountered in orthopaedic practice with distinct clinico-pathologic-radiological

features and has a tendency for local recurrence, potential for malignant transformation and metastasis.¹ They constitute approximately 5% of primary bone tumours, most commonly involving the distal femur and proximal tibia.² Distal Radius, proximal humerus, fibula and the pelvic bones are the other common sites of involvement.³ In their most frequent presentation giant cell tumour of the bone are solitary neoplasm, occurring eccentrically in the epi-metaphyseal region of young adult bones.⁴ Involvement of small bones is rare.⁵ It is commonly encountered in population age ranging from 20-40 years, but it has also been reported in children as young as 2 years⁶ as well as in elderly population with rare incidence in patients older than age 55 years⁷.

We report an unusual presentation of giant cell tumour in left distal femur in an 88 years old male patient. We discuss whether giant cell tumours in elderly patients

behave differently than those that occur in the usual age group. In addition, we outline what are the common differential diagnoses encountered in such elderly patient.

Case Report

We are reporting an 88 years old male patient who presented with swelling and pain around the lateral aspect of left knee for 6 months along with decreased range of movements. There was no history of trauma or systemic symptoms. His general physical examination was unremarkable. On local examination the patient had local tenderness with a firm to hard localised swelling of size 5 x 4 cm on the lateral aspect of distal thigh. Swelling was warm, had well defined margins, firm consistency and was adherent to the underlying structures. Knee range of motion was from 0-20 degrees of flexion. Routine blood investigations were unremarkable. Plain roentgenogram (Fig.1) showed an expansile eccentric osteolytic lesion with breached out lateral cortex involving supracondylar femur and lateral femoral condyle region. Biopsy was done and histopathological diagnosis of GCT was done. The tumour was graded as Campanacci grade III. Chest radiograph was normal with no evidence of lung metastasis at that time. MRI imaging revealed poorly demarcated lobulated lesion involving distal end of femur (epiphysis, metaphysis), predominantly lateral condyle with intraosseus and extraosseus components (with breach in lateral cortex) extending into surrounding soft tissues, with surrounding myofascial edema. (Fig.2)

The tumour was approached with lateral incision over distal thigh. Pathological fracture of lateral cortex was seen and the tumour was extending anteriorly outside the bone. The tumour was grey-white in appearance was firm in consistency. Extended curettage was

performed after making a large cortical window over the lesion scooping out with sharp curettes (Fig.3).The cavity was enlarged back to normal host bone in each direction with a power burr followed by fulguration of the residual tumour tissue by electrocautery. Finally, the cavity was copiously irrigated to remove any debris and tumour cells. The cavity was filled with bone cement (PMMA). Histopathological examination of the excised specimen showed multinucleated giant cells and pleomorphic spindle cells (Fig.4). Post-operative period was uneventful and patient was put on physiotherapy after one month.

The patient is still on our routine follow-up since last 4 years with no evidence of any local recurrence or distant metastasis as of now. There was an improvement in knee range of motion from initial 0-20 degrees to 0-80 degrees of active flexion with Musculoskeletal Tumor Society Rating Scale (MSTS) score of 28.

Discussion

Earlier studies on GCT included few elderly patients but there was no distinctive mention of tumour behaviour and management in elderly patients in these studies.^{8,9,10,11} McCarthy et al⁷ reported in a series of ten cases(age ranging from 62-78 years) that the behaviour of giant cell tumour in elderly patients is no different from lesions occurring in more commonly involved younger patients. In the present case report, the location of tumour is one of the commonest known sites observed in the younger population. Also the radiographic features and behaviour of the lesion is identical to the giant cell tumour in younger patients. Lesion is well defined and involves the epi-metaphysis of femur.

Many modalities of treatment are described for GCT. Intralesional curettage with cementing or bone grafting done in our case is recommended as a standard treatment.¹²

The differential diagnoses of giant cell tumour in elderly patients are metastatic carcinoma, Pigmented villonodular synovitis (PVNS) and Paget's disease (rarely).

Metastatic carcinoma arising from breast, kidney, lung and pancreas have high likelihood in elderly patients. Although it mainly involves axial skeleton but to rule out, confirmation by biopsy is must. Another less common differential diagnosis is PVNS. PVNS involving bone is almost always epiphyseal and metaphyseal with bone destruction pattern similar to GCT. A pre-operative MRI will help eliminate this diagnostic confusion because PVNS will show extensive synovial membrane involvement and secondary bone invasion.⁷

Giant cell tumour is a rare complication of Paget's disease in older patients. Therefore, any elderly patient with a giant cell tumour should be ruled out for the possibility of Paget's disease.^{7, 13, 14}

Summary

Giant cell tumour of bone is rare in elderly patients and possibility of metastasis should always be kept in mind. A preoperative biopsy is essential for confirming the diagnosis. However once diagnosis of GCT is confirmed, treatment modalities remains the same irrespective of the age.

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Legends Figures



Figure 1: Pre operative lesion showing eccentric lytic lesion in lower end of femur.

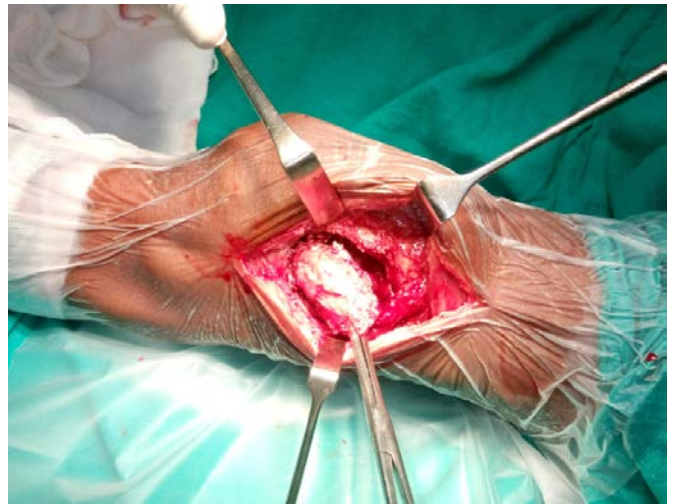


Figure 3: Intraoperative image showing window made for extended curettage followed by cementing



Figure 4: Post op xray

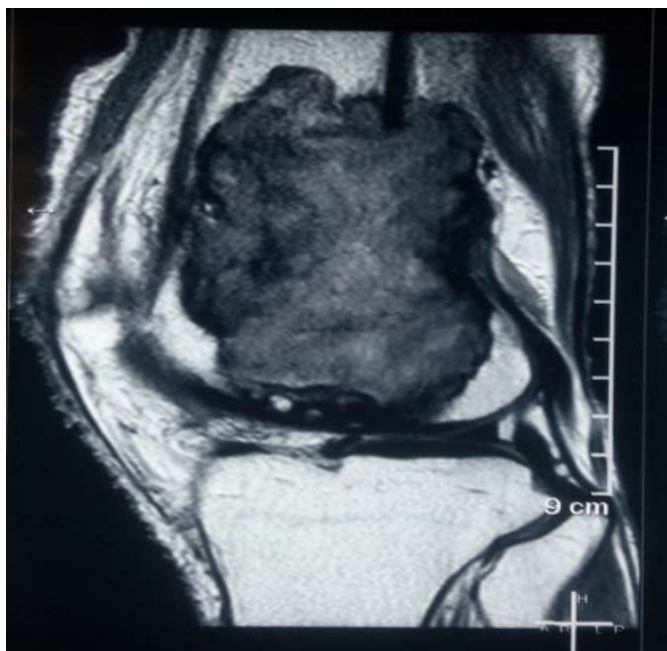


Figure 2: MRI showing extent of lesion and breach in posterior cortex.



Figure 5: Full range of movements at 4 years follow up.