

Case Report

Giant cell tumor of patella — a case report

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Typically, giant cell tumor of the bone occurs at the end of a long bone, commonly the distal femur, proximal tibia and distal radius. Other sites are unusual and rare. We are presenting a rare case of giant cell tumor of the right patella which was confirmed by FNAC. The patient was treated with total patellectomy including a rim of normal tissue. Quadriceps mechanism was repaired.

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Key words : Giant Cell Tumour, patella, total patellectomy.

Giant cell tumor (GCT) is a tumor found most often in the ends of long bones and is essentially located in the epiphyseo-metaphyseal or epiphyseal equivalent portions of bone. It is a locally aggressive neoplasm, generally arising in adults between the ages of 20 and 40 Years. The patella is a rare site with a reported incidence of less than one percent, mostly in the form of case reports¹. In this article, we report a case of GCT originating from the right patella which was diagnosed on Fine needle aspiration cytology (FNAC). Because of paucity of cases, the treatment guidelines for these tumors are not described and range from simple curettage to patellectomy. Recently, treatment of patellar giant cell tumor by patellectomy and patellar allograft has been described². We present such a case which was treated with patellectomy with suturing of retinaculum to maintain the extensor mechanism.

CASE REPORT

A twenty-five year old male presented to OPD with chief complaints of pain, swelling and restriction of movement of Right knee of four months duration with history of trivial injury. It was not associated with any other lumps, history of weight loss or similar episodes.

Examination — Physical examination revealed an averagely built male with a swelling over the anterior aspect of Right knee. It was tender to palpation, however there was no erythema or warmth. The swelling measured approximately 7cm×5cm×3cm and was firm to hard in consistency, non pitting, non fluctuant, trans illumination negative and had no fluid thrill. Attempted motion of the knee was terminally painful and was associated with 20° of extension lag.

Investigations — Routine blood investigations performed were all within normal limits. Serum calcium, phosphorous and Alkaline phosphatase were within normal range.

Radiographs of the Right knee showed an expansile, lytic lesion replacing the entire patellar bone with only a rim of intact patellar cortex (Fig 1). FNAC of the swelling revealed Giant cell morphology with a provisional diagnosis of GCT of patella.

Management — In view of the near complete destruction of the bone patellectomy with repair of extensor apparatus was planned. A midline incision over knee was utilized to expose the patella with subsequent patellectomy and repair of retinaculum (Figs 2a&2b) and continuity of extensor apparatus. Post operatively the patient was kept in a cylinder cast for 6 weeks after which range of motion



Fig 1 — AP & LAT view of Right knee showing an expansile, lytic lesion involving the entire patella

& strengthening exercises were done. Excised patella upon bisection (Fig 3) showed the patella to be replaced by brownish-tan tissue, which had a soft consistency with areas of hemorrhage. Excisional biopsy confirmed it to be a case of Giant cell Tumour. Recent follow up shows no further swelling or tenderness over knee and there is full range of movement without any mediolateral instability.

DISCUSSION

Primary intraosseous lesions of the patella are rare. In a review, Mercuri and Casadei could collect only 384 cases of patellar tumors (primary and secondary) reported in literature during entire twentieth century. The majority (73%) of these tumors were benign (279 cases) with 126 Giant Cell tumors reported as the most frequent diagnosis³.

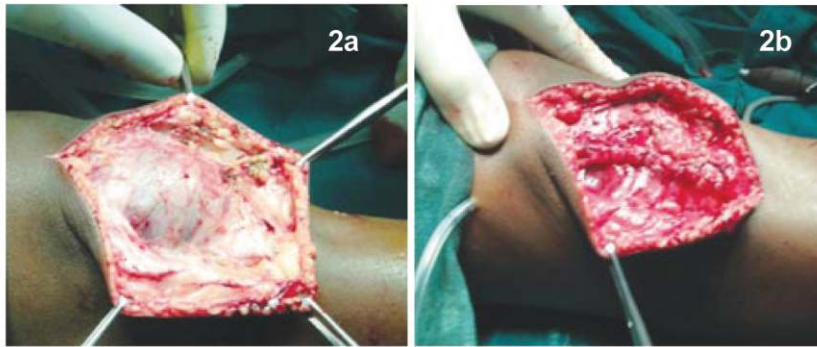
Clinically, most of the cases of patellar neoplasms occur in middle aged males and present with anterior knee pain which is especially severe at night^{1,4}. However, an underlying patellar neoplasm as a cause of anterior knee pain is an extremely rare occurrence and its diagnosis should be suspected in cases of resistant night pain and appropriate lateral radiographs of the knee should be taken¹. X rays are very simple and effective means of diagnosis. CT and MRI further help to stage the tumor which helps in further management.

Grading and staging of GCT have focused on (i) Histological features: Benign, aggressive and malignant, the latter having clearly pleomorphic features with abundant mitotic figures and (ii) Surgi-

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Figs 2a & 2b — Midline incision over Rt Knee with complete exposure and repair of Patellar retinaculum after patellectomy

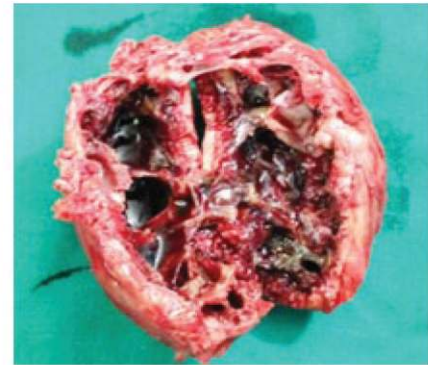


Fig 3 — Bisected specimen showing areas of Lysis with haemorrhage & Brownish tissue

cal staging: Clinically latent, active and aggressive.

Giant cells are ubiquitous in bone lesions. During histological examination, if particular attention is paid to the background stromal cells and the clinico radiological data are correlated, then establishing the diagnosis becomes easier. A differential diagnosis of aneurysmal bone cyst (ABC), brown tumor, chondroblastoma, chondromyxoid fibroma (CMF), non-ossifying fibroma (NOF), and malignant fibrous histiocytoma can be considered on cytology.

Various modalities of treatment for GCT of patella are followed like curettage, alone or in conjunction with bone grafting or cement filling and patellectomy with or without patella prosthetic replacement^{1,3}. Curettage alone is associated with risk of recurrence ranging from 40-60%, in comparison to curettage & bone cement (25%) and patellectomy (7%)⁵.

As the patellar bone can be sacrificed without any significant morbidity vis a vis the complications of preserving it, Patellectomy with repair of Extensor apparatus is a viable option for the complete cure for Patellar GCT.

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