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Case Report *Volume 6 Issue 1*

Rare Encounter: Osteoclastoma in the Medial Condyle of the Femur-A Case Report

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Abstract

An 18-year-old female presented with persistent pain in the medial aspect of her knee joint for three months, significantly affecting her mobility. Radiological examination revealed a cystic lesion in the medial condyle of the distal femur. A subsequent MRI of the knee confirmed the diagnosis of osteoclastoma, a rare, benign but locally aggressive bone tumor. The patient underwent a meticulously planned surgical procedure involving intralesional curettage to remove the tumor. The resulting defect in the bone was reconstructed using an autologous iliac crest bone graft. To ensure structural stability and prevent fractures, prophylactic fixation was performed with a locking compression plate. Histopathological analysis of the tumor contents reaffirmed the diagnosis of osteoclastoma. Postoperatively, the patient was enrolled in a structured physiotherapy program to restore knee function. At the one-year follow-up, radiological assessment demonstrated successful incorporation of the bone graft into the femur, with no signs of local recurrence of the tumor. Clinically, the patient reported complete resolution of pain and exhibited a full range of motion in the affected knee, indicating a successful outcome. This case highlights the importance of early diagnosis and comprehensive management of osteoclastoma, particularly in weight-bearing bones, to preserve joint functionality and prevent complications. The integration of surgical intervention, bone grafting, and physiotherapy contributed to the favourable prognosis and complete recovery of the patient.

Keywords: Osteoclastoma; Intralesional Curettage; Iliac Crest; Bone Grafting; Prophylactic Fixation

Case Report

One year ago, an 18-year-old female presented to the hospital with a two-month history of left knee pain. The pain worsened with knee flexion and improved with rest but intensified at night, disturbing her sleep. On physical examination, swelling of the knee was observed along with tenderness over the medial condyle of the femur. Terminal flexion of the knee was noted to be painful. Clinical and radiological evaluations revealed a cystic lesion in the medial condyle of the left femur [1,2] (Figure 1). MRI findings confirmed the diagnosis of osteoclastoma involving the medial condyle of the femur.

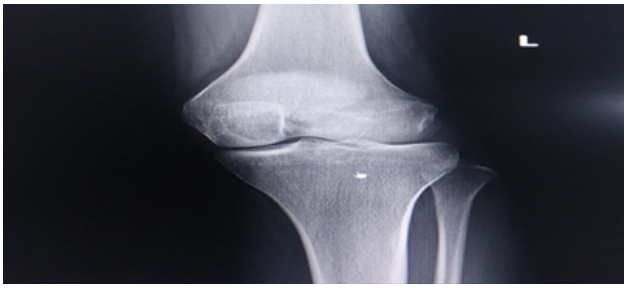

Figure 1: Indicates the cystic lesion in medial condyle of femur.

Surgical Management

The patient was admitted and underwent surgery, including intralesional curettage of the tumour, filling of the defect with iliac crest bone graft, and internal fixation using a locking compression plate to prevent pathological fractures. Through a subvastus approach, the medial femoral condyle was exposed, revealing significant thinning of the condyle, which was nearly breaching into the joint [3,4] (Figure 2). A window was carefully created over the medial condyle, and the tumour contents, which had a gelatinous appearance, were meticulously removed and sent for histopathological examination. The report confirmed the presence of osteoclastoma cells [5,6]. Intraoperatively, thinning of the cartilage was observed, with the lesion being on the verge of penetrating into the joint (Figure 3). After thorough intralesional curettage, an iliac crest graft was harvested from the ipsilateral side and used to fill the bone defect. Prophylactic fixation with a locking plate was performed to reinforce the structural integrity and prevent pathological fractures [7,8].

Figure 2: Shows Incision marking.

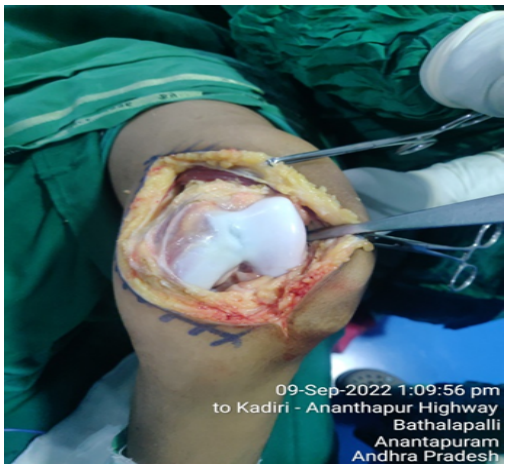

Figure 3: Shows thinning of cartilage.

Postoperative Rehabilitation: Post operatively for first 6-8 weeks we advised the patient strict non weight bearing and asks to do knee mobilization exercises, quadriceps strengthening exercises and gluteal muscle strengthening exercises. Subsequent 8-12 weeks advised partial weight bearing with support, after 12 weeks [9,10] complete weight bearing. with one year of follow up patient knee is pain free and had full range of knee movements. With sequential radiological evidences shows that allograft incorporation and there is no evidence of recurrence of the tumor (Figures 4-7) [11,12].

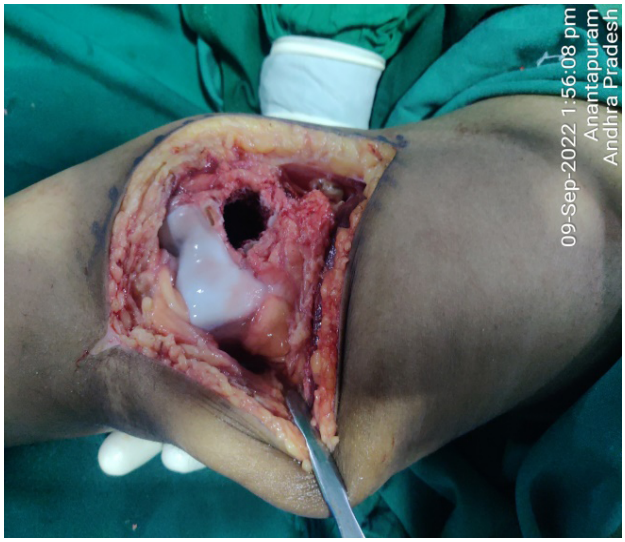

Figure 4: Showing window over condyle.

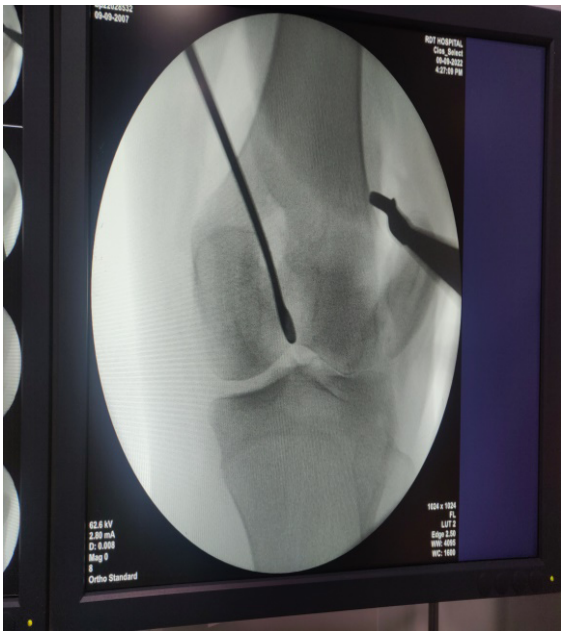

Figure 5: Showing curettage of procedure.

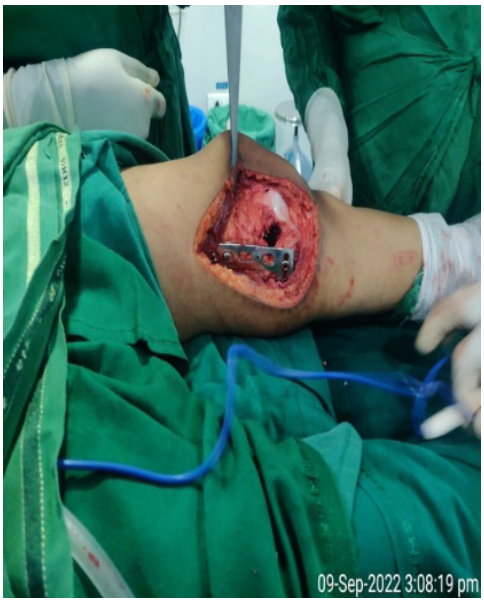

Figure 6: Shows Plate Fixation.

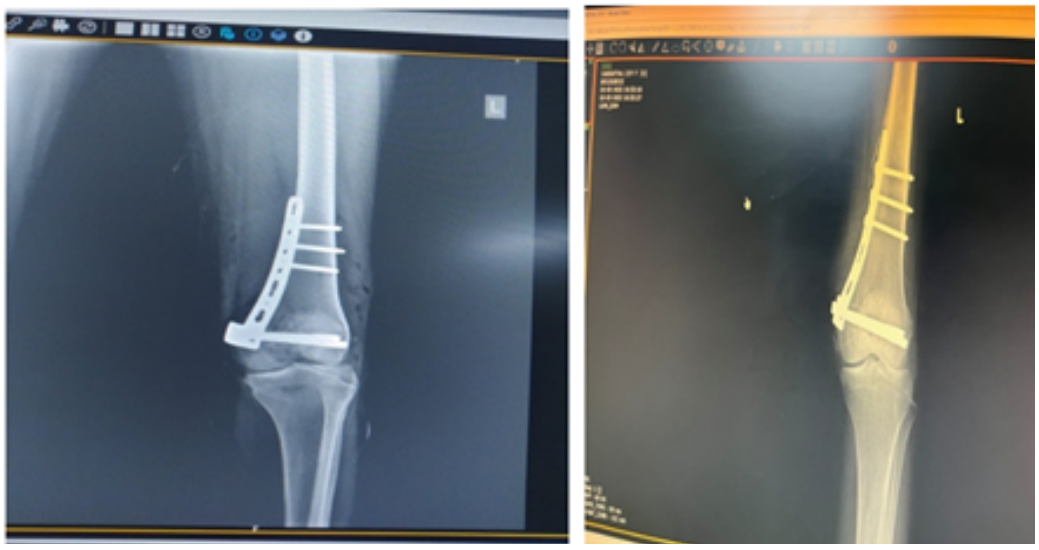

Figure 7: Shows Plate Fixation with Bone Grafting.

Biopsy Report

Specimen: Small (chondroblastoma, left femur). Multiple Gray-brown curettings. Histopathology revealed tumour tissue composed of uniformly distributed multinucleated giant cells (osteoclasts) interspersed with spindle or oval cells. The oval cells had prominent nuclei, with some showing nucleoli. The big cells nuclei were similar to those of the oval cells. No atypia or increased mitotic activity was observed. Findings were suggestive of a giant cell tumour (osteoclastoma) [13,14].

Discussion

This case describes a rare presentation of osteoclastoma in the medial condyle of the distal femur in an 18-year-old female with three months of knee pain. Osteoclastomas, while benign, are locally aggressive tumours primarily affecting long bones [1]. Early radiological and MRI evaluations identified a cystic lesion, leading to a definitive diagnosis of osteoclastoma and guiding the treatment approach [15]. The patient underwent intralesional curettage of the lesion, reconstruction of the defect with iliac crest bone grafting, and prophylactic fixation with a locking compression plate

to ensure structural integrity and prevent pathological fractures [16].

Histopathological analysis confirmed the diagnosis of osteoclastoma, distinguishing it from other giant-cell-rich lesions such as chondroblastoma or aneurysmal bone cysts. The characteristic features included multinucleated giant cells surrounded by spindle-shaped stromal cells without evidence of atypia [17].

At the one-year follow-up, radiographic imaging showed successful graft incorporation and no evidence of local recurrence. The patient experienced full functional recovery, with a complete range of motion and absence of pain due to a structured physiotherapy program [18].

This case underscores the critical importance of early diagnosis, meticulous surgical management, and postoperative rehabilitation in optimizing outcomes for osteoclastoma patients. Despite its benign nature, Osteoclastoma locally aggressive behaviour requires a multidisciplinary approach involving radiological imaging, histopathological confirmation, surgical expertise, and physical therapy.

Conclusion

This case study highlights the effective management of osteoclastoma in the medial condyle of the distal femur using a comprehensive, multidisciplinary approach. The combination of intralesional curettage, iliac crest bone grafting, and locking plate fixation provided tumour removal and structural stability. Histopathological evaluation ensured diagnostic precision, while structured physiotherapy contributed to pain-free functional recovery. At the one-year follow-up, the patient demonstrated excellent clinical outcomes, including no recurrence, full range of motion, and restored knee functionality. Long-term vigilance remains essential, given the reported recurrence rates of 10% to 30% in osteoclastoma cases. Continued case studies and research are necessary to refine therapeutic strategies, improve prognostic accuracy, and enhance care for patients with osteoclastoma.

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