Epiphyseal Chondroblastoma of the Proximal Tibia: A Rare Case Report

Dr Sanampudi Likhith, PGT 3rd Year, Ms Orthopaedics

INTRODUCTION

- ✓ Chondroblastoma is a rare, benign but locally aggressive bone tumor arising from immature chondroblasts, accounting for ~1% of primary and ~5% of benign bone tumors.
- ✓ It predominantly affects adolescent males and involves the epiphysis of long bones, most commonly the proximal humerus, proximal tibia, and distal femur.
- ✓ Radiologically, it presents as a well-defined eccentric lytic lesion with a thin sclerotic rim and characteristic chicken-wire calcification.
- ✓ Intralesional curettage with bone grafting is the treatment of choice.

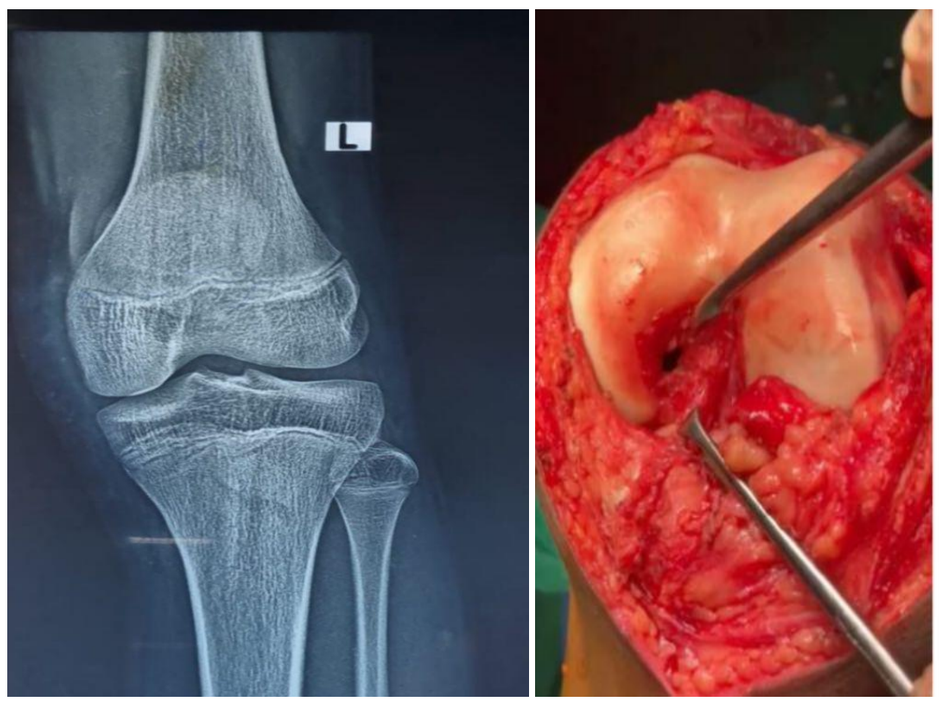
CASE PRESENTATION

- ✓ A 15-year-old male presented with 9 months of dull, progressive left knee pain, posterior swelling, and terminal restriction of movement, without trauma or systemic symptoms.
- ✓ Examination revealed localized tenderness and mild swelling.
- ✓ Radiographs showed a well-defined eccentric lytic epiphyseal lesion in the proximal tibia with a thin sclerotic rim.
- ✓ MRI demonstrated a well-circumscribed epiphyseal lesion with marrow edema and minimal joint involvement
- ✓ Core biopsy revealed sheets of polygonal chondroblasts with chicken-wire calcification, confirming chondroblastoma
- ✓ The patient underwent intralesional curettage and bone grafting.

INTRAOPERATIVE FINDINGS

- The lesion was approached through a posteromedial approach.
- A cortical window was created, revealing a well-circumscribed lytic cavity filled with friable greyish-white granular tumor tissue.
- Thorough intralesional curettage was performed to remove all tumor material.
- The resultant defect was filled with bone graft to provide structural support and promote healing

CASE IMAGES



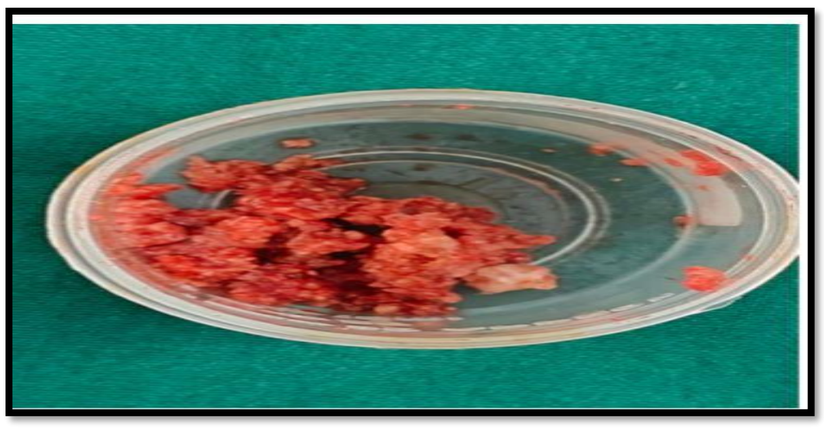


Figure 1: Preoperative plain radiograph (AP view) of the left knee demonstrating a well-defined eccentric lytic lesion in the epiphysis of the proximal tibia with a thin sclerotic rim.

Figure 2: Intraoperative photograph showing cortical window over the proximal tibia with exposure of the epiphyseal lesion and intralesional curettage being performed.

Figure 3: Excised tumor tissue following intralesional curettage, showing friable, greyish-white granular material characteristic of chondroblastoma.

DISCUSSION

- Chondroblastoma presents with progressive joint pain and functional limitation in adolescents. ’
- Diagnosis is confirmed histologically by chondroblasts, giant cells, and chicken-wire calcification. Intralesional curettage with bone grafting is the standard treatment.
- Recurrence occurs in up to 20%, warranting meticulous surgery and close follow-up.

CONCLUSION

- Chondroblastoma is a rare benign bone tumor with locally aggressive behavior.
- Early diagnosis through clinical evaluation, imaging, and histopathological confirmation is essential for optimal management.
- Adequate intralesional curettage followed by bone grafting offers excellent functional outcomes and minimizes recurrence.
- Long-term follow-up is recommended to detect early recurrence and preserve joint function.

REFERENCES

- *Ramappa AJ, Lee FY, Tang P, Carlson JR, Gebhardt MC, Mankin HJ. Chondroblastoma of bone. JBJS. 2000 Aug 1;82(8):1140.*
- *Unni KK, Inwards CY. Dahlin's bone tumors: general aspects and data on 10,165 cases. Lippincott Williams & Wilkins; 2010.*