Abstract: 14 years old boy presented with chronic knee for 2 years duration not relieved by rest or analgesics. No history of trauma or fever. Clinical examination was normal except for range of motion 0 - 110 degrees. Blood investigations and x rays were normal. CT showed a subarticular lesion in the posteromedial aspect of the lateral tibial plateau with open growth plate suggestive of chondroblastoma. Treatment option of curettage and bone grafting was done by identifying the lesion in a novel manner without disturbing the growth plate and articular cartilage. Postoperatively patient was pain free and achieved full range of movements.

Keyword: Periarticular chondroblastoma, knee pain, osteolytic lesion

CASE REPORT
14 years old school going boy presented with pain in the right knee for 2 years. Pain is present even at the rest and not relieved by the analgesics for the past 6 months. No history of trauma, constitutional symptoms, joint swellings, morning stiffness. Clinical examination showed no bony tenderness/joint effusion/synovial thickening. Range of movement, flexion 0 - 110. No distal neurovascular deficit. Clinically our differential diagnosis includes osteoid osteoma, osteomyelitis, chondroblastoma.

INVESTIGATIONS:
All blood investigations were within the normal limits. X ray of the right knee no abnormal findings detected(Figure 1). X ray chest no abnormal findings. Due to severe pain at rest not relieved by analgesics and restriction of daily activities CT scan was advised. CT scan showed subarticular osteolytic lesion in posteromedial aspect of lateral tibial plateau and lateral tibial spine measuring approximately 12×11 mm with thinning of articular cortex with central radiodensities(calcifications)suggestive of chondroblastoma(Figure 2 & 3).

**TREATMENT:**
Curettage and bone grafting.

**DIFFICULTIES AHEAD:**
- Difficulty in locating and removing the tumor without damaging the growth plate.
- To keep the articular cartilage over the tumor intact during the procedure and provide adequate support postoperatively.
- Surgical approach difficulty due to its proximity to the neurovascular structures.
- As the tumor is not visible in the x ray or c-arm, identifying the tumor intraoperatively accurately is a challenge.

**PROCEDURE:**
Under epidural anaesthesia, with sterile aseptic precautions a CT guided ‘k’ wire was passed from posterolateral to medial direction such that the tip of the k wire was positioned in the center of the osteolytic lesion. The k wire was placed above the level of the growth plate and below the articular cartilage(Figure 4). This was to facilitate the intraoperative localization of the tumor with the help of c-arm.

Through posterior approach, neurovascular structures identified and protected. The posterior aspect of the proximal tibia reached. Under c-arm guidance the tip of the ‘k’ wire localized(Figure 5), drill hole made and the tumor identified and curettage done(Figure 6). The cavity was packed with cancellous bone graft taken from the proximal tibial metaphysis of the same side. Wound closed with drain. Tube slab applied.

**GROSS SPECIMEN APPEARANCE:**
Soft, friable, reddish brown tissue.

**HISTOPATHOLOGICAL APPEARANCE:**
Sheets of chondroblasts with the background of chondroid matrix. Calcifications around the cells with chicken wire appearance. Multinucleated giant cells were present suggestive of chondroblastoma.

**POSTOPERATIVE PERIOD:**
Suture removal done on the 14th day. Tube slab removed after 3 weeks. Postoperatively active and passive mobilization exercise of knee joint advised. Weight bearing allowed after 2 months.
FOLLOW UP:

Figure 3. CT axial section showing the lesion posteriorly with calcifications.
Monthly clinical examination review was done. Patient regained painless full range of movement after the 4\textsuperscript{th} week. Follow up CT scan at 1 year shows signs of consolidation with intact growth plate. chest x ray was normal.

DISCUSSION:
Chondroblastoma is a benign tumor consisting of 1\% of all bone tumors\textsuperscript{(1)}. Age group 10 to 25 years. 2 : 1 male predominance. The distal femur, proximal humerus, and proximal tibia are the most common sites. Mostly it presents with chronic progressive pain that may mimic a chronic synovitis or other intraarticular pathological conditions. If the lesion is located in the epiphysis alone, a synovial or subchondral cyst has to be considered, whereas a lesion located both in the epiphysis and metaphysis has a differential diagnosis of giant cell tumor\textsuperscript{(2)}. Radiographs shows well-circumscribed lesion centered in an epiphysis; however, it may be located in an apophysis also\textsuperscript{(3)}. Often it has a surrounding rim of reactive bone, and 30\% to 50\% exhibit calcifications\textsuperscript{(4)}. Soft-tissue extension is extremely rare. In contrast giant cell tumors do not have rim of calcifications and usually has soft tissue involvement. Recurrence occurs in 10\% to 20\% of patients. Benign pulmonary metastases can occur in 1\% of patients\textsuperscript{(5,6)}.

CONCLUSION: A young adolescent male presenting with the chronic knee pain, the differential diagnosis of a periarticular chondroblastoma should be considered. This novel method of localization of small tumors especially when grown plate is open is useful.

Figure 4. CT guided positioning of the k wire.

REFERENCES:


Figure 5. Intraoperative identification under c arm guidance.
