

A 9-year-Old boy Presented to Our Hospital with Chronic Pain in the Left Knee of Two Years Duration

Mir Tariq Altaf

Department of Orthopaedics, Tamil Nadu, India

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Abstract:

Background:

Osteoid Osteoma is a benign osteoblastic tumour usually seen in the long bone diaphysis or metaphysis with a predilection to the cortical area in the first three decades of life. The epiphyseal location of osteoid osteoma is rare, and few cases have been reported.

Case presentation:

Here, we report a 9-year-old boy who had a protracted history of pain in the left knee, which on evaluation with advanced imaging revealed likely osteoid osteoma in the distal femur epiphysis and was managed by surgical excision.

Conclusion: Epiphyseal and intra-articular osteoid osteoma, although rare, should be a differential diagnosis in young patients with pain and joint stiffness. Atypical clinical presentation and almost unremarkable plain radiographs can lead to a delay in diagnosis, necessitating a strong suspicion of this entity.

Key words: chronic pain

Introduction

Osteoid osteoma [OO] is a relatively common benign bone tumour, representing up to 3% of all primary bone neoplasms. It typically occurs in the diaphysis or metaphysis of long bones, most commonly in the lower limbs. The condition primarily affects young individuals, generally between the ages of 5 and 25, and is about three times more prevalent in males than in females [1].

Case report

A 9-year-old boy presented to our hospital with chronic pain in the left knee of two years duration. The pain was insidious in onset, aggravated by movements of the knee and relieved by rest and NSAIDs. The symptoms were not preceded by any trauma, were not associated with fever, and there was no diurnal variation of pain. Local examination of the knee joint revealed minimal knee joint effusion, tenderness on palpation of the medial femoral condyle and a terminally painful knee range of movements.



Figure 1: Plain radiographs taken showed juxta-physical density in the medial femoral condyle.

Patient had Magnetic Resonance Imaging [MRI] of the knee taken at another facility, the images of which were reviewed by our musculoskeletal radiologist and revealed a juxta-physical lesion in the distal femur medial condylar epiphysis with a sclerotic centre and a likely impression of osteoid osteoma was made.

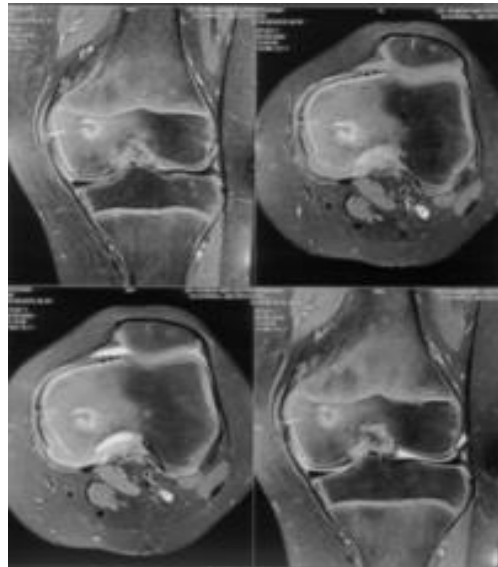


Figure 2: Axial and coronal MRI images showing medial femoral condyle lesion adjacent to physis with a central sclerotic area.

A plan was made to excise the lesion and get the histopathological diagnosis surgically. The child was taken under general anaesthesia, in the supine position. Preoperative measurements were taken to localise the lesion intraoperatively, and under an image intensifier, the pathological area was identified and excised.

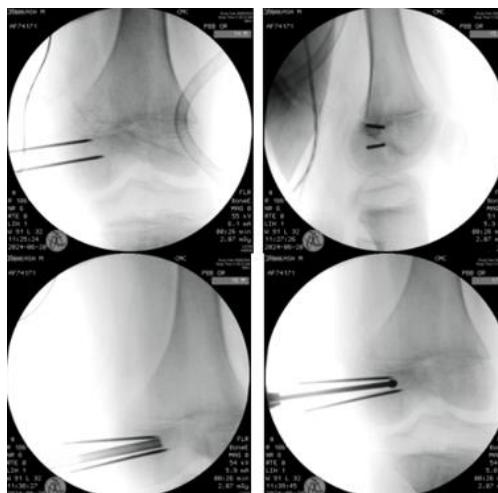


Figure 3: Intraoperative localisation under image intensifier

The excised specimen was sent for histopathological evaluation. Post-operatively, the child was put in a knee brace for comfort. Weight-bearing as tolerated was started from day 2 of surgery, and the child was discharged. The histopathology report confirmed the diagnosis of osteoid osteoma. The follow-up radiograph was satisfactory.



Figure 4: Post-operative radiograph of knee on follow-up

Discussion

Osteoid osteoma is a benign neoplasm that affects young people in the first two to three decades of life, predominantly localised to the diaphysis or metaphysis of long bones, mainly in the lower limbs. Based on radiographic findings, Edeiken classified osteoid osteomas into cortical, medullary, or subperiosteal according to tumour distribution in the axial plane [2]. The typical clinical presentation of osteoid osteomas is dull, aching pain at the site of involvement, typically worsened at night and relieved by nonsteroidal anti-inflammatory agents [NSAIDs] and salicylates. These NSAIDs inhibit the release of prostaglandin E2 and prostacyclin's by the tumour, thereby improving symptoms. Only a few cases of epiphyseal osteoid osteoma have been reported in the literature [3]. The epiphyseal location of the tumour may not exhibit the typical clinical presentation and can also present with synovitis, joint pain, flexion contracture, decreased range of motion, and an antalgic gait or limp. In paediatric cases, if the lesion involves the open physis, limb length discrepancy may be the presenting feature, accompanied by coronal and sagittal malalignment [4]. The rare epiphyseal location of the tumour is likely to lead to a diagnostic dilemma due to atypical presentation and almost normal radiographs.

Furthermore, the epiphyseal location can be mistaken for other tumours like chondroblastoma, with a different natural history. In these rare locations, and to avoid radiation in children, MRI might be the first investigation modality ordered by the clinician rather than Computed Tomography [CT], which is the investigation of choice for these lesions in typical cases [5]. Treatment of osteoid osteoma has evolved from open to less invasive methods. The most preferred treatment options include resection of the nidus with minimally invasive intraoperative curettage and percutaneous radiofrequency thermoablation [PRT] of the lesion under computerised tomography guidance [6]. Open surgical excision was preferred here as radiofrequency ablation can be detrimental due to the proximity of the lesion to the physis, with the added advantage of biopsy. Histopathology confirmed our diagnosis of osteoid osteoma and adequacy of excision from the surrounding rim of normal bone. Post-procedure, the patient had complete pain relief, indicating treatment success. Open surgical excision, although more morbid, is technically less demanding and cost-effective. At the last postoperative follow-up at 6 months, the patient was symptom-free.

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