ISSN: 3065-4482
Case Report
Science Set Journal of Pediatrics

Osteoid Osteoma of Knee: A Case Report and Technical Note

Saccomanni Bernardino

Department of Orthopaedic and Trauma Surgery, Viale Regina Margherita, 70022, Altamura (BARI), Italy, Tel: 3208007854

***Corresponding author:** Saccomanni Bernardino, Department of Orthopaedic and Trauma Surgery, Viale Regina Margherita, 70022, Altamura (BARI), Italy. Tel: 3208007854.

Submitted: 13 March 2026 **Accepted:** 18 March 2026 **Published:** 23 March 2026

Citation: *Bernardino, S. (2026) Osteoid Osteoma of Knee: A Case Report and Technical Note, Sci Set J of Pediatrics, 4(2), 01-03.*

Abstract

Osteoid osteoma is a small, benign neoplasm that consists of well- dematcated nidus surrounded by reactive zone of sclerosis. Typically, this lesion occurs in or on the cortex which metaphysic or diaphysis of long bones. It occurs relatively frequently and is typical of late childhood, adolescent and young adult age. Pain is the usual presenting symptom. It is frequently dull and aching in nature. A characteristic feature is nighttime waking because of pain. I report on the clinical features, radiographic and histopathological findings, treatment and results of a patient who were managed for an osteoid osteoma at our department in 2003. I performed a CT-guided en block excision under arthroscopic control for juxta articular osteoma osteoid of knee.

Keywords: Osteoid Osteoma, Knee Joint, Patella, Anterior Knee Pain, Ct-Guided Excision, Arthroscopic Surgery, Nidus, Perinodal Sclerosis, Benign Bone Tumour, Delayed Diagnosis, Musculoskeletal Imaging, Computed tomography.

Introduction

Osteoid osteoma is a benign tumour which usually small in size and painful. The clinical manifestations are typical nocturnal pain that is alleviated with aspirin. If the pain unresponsive to medical therapy or if patients cannot tolerate prolonged aspirin, surgical excision is curative [2]. I present on clinical features, radiographic and histopathological findings, treatment and results of a patient who was managed for an osteoid osteoma of knee at our department in 2003 and in whom the initial diagnosis was erroneous and delayed.

Case report

A 14- year-old girl professional dancer, had uncertain left anterior knee pain and has been followed up with femoropatellar dyplasia for 2 years at another clinic. She was admitted to our clinic because of persistence of her complaints. Her pain knee occurred once in a week previously but in 2 last months, she had nearly constant pain which was worsened especially during night time with swelling accompanying pain in the last two weeks.

Although the pain had a good response to aspirin at the beginning, that response had decreased in the last weeks. The patient had no fever or any other systemic findings, or swelling in other joint. At physical examination, her left knee range of motion was limited as well as swelling and the pain when the Hoffa fat pad was palpated. Laxity and meniscus tests were negative, but femoro-patellar signs are positive. Laboratory findings were negative. Radiograph, CT, and MRI of the knee revealed the presence of a nidus with a sclerotic rim in the central region of patella (Fig 1, 2, 3).

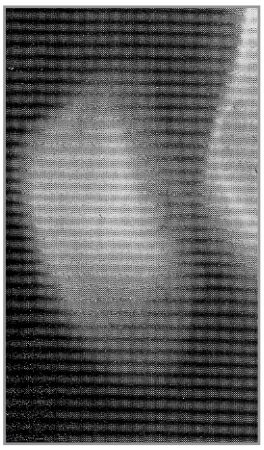

Figure 1: Spherical dense lesion in the central part of patella in the lateral knee conventional radiography.

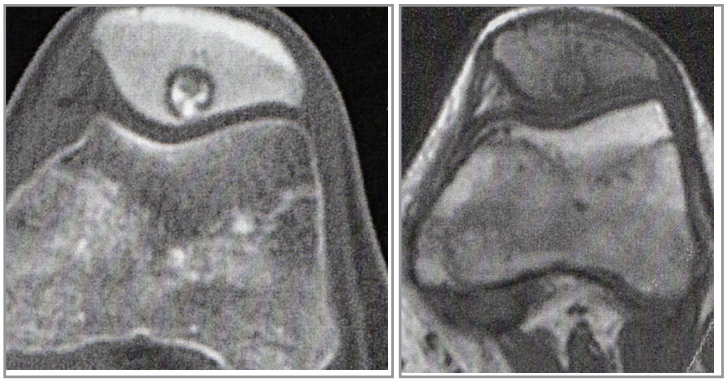

Figure 2, 3: Axial spiral CT and axial T1 –weight MRI depicted a subchondral lesion with perinodal sclerosis in the central region of the patella.

The pathologic examination confirmed the diagnosis of osteoid osteoma (Fig 4). The patient had a CT-guided wide en-block antegrade resection under arthroscopy (Fig 5). After surgery, the patient had a complete relief of pain.

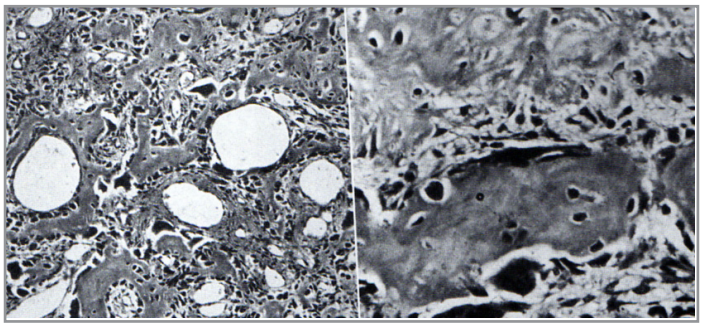

Figure. 4: The histology of an undecalcified section from the centrally dence nidus shows interconnected ossified bone trabeculae.

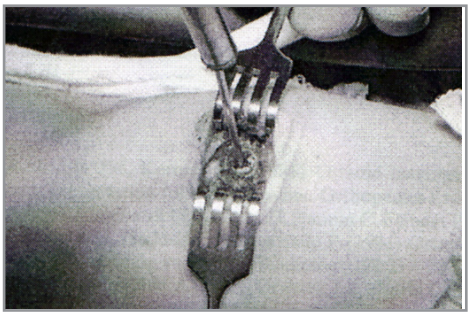

Figure. 5: A 1-cm diameter hollow drill bit was used on the guidance of the Kirschner wire to remove a bone block.

Surgical Technique

With a 20-gauge needle in place a single CT cut rapresents the correct approach A skin incision was made at the puncture site and access to the nidus was established using an 11- gauge Jamshidi hollow biopsy needle and 2 mm coaxial drill system, depending on the hardness of the adjacent bone. A kirschner guide wire was percutaneously inserted under CT control entering perpendicular to frontal plan corresponding the central zone of the

patella. The following axial and coronal views of CT showed the central placement of the Kirschner wire until the distal edge of the lesion after three attempts. Subsequetly, the patient was transferred to surgery in order to remove the lesion. The arthroscopic technique was used to remove the osteoid osteoma. A 1 cm diameter hollow drill bit was then used on the guidance of the kirshner wire a bone block of calculated depth and dimentions. The bony defect was filled with autologus bone graft harvested from the proximal tibial methaphysis in my case. After surgery the patient had a complete relief of pain.

Discussion

In my patient the diagnosis was erroneous and delayed for some years. demonstrated that there may be a long delay in the definite diagnosis [3]. have emphasized the difficulty of diagnosing osteoid osteoma with atypical knee pain in 10 patients in a retrospective study [1]. Of the ten cases with anterior knee pain, four had osteoid osteomas in the knee region, six in mid-shaft of femur and hip. In that study. Findings were typical only in one patient among four osteoid osteoma cases. The clinical findings were synovitis, chondromalacia and quadriceps tendonitis in the other three cases. Quadriceps atrophy and intrarticular effusion have been detected in physical examinations and there was history of unnecessary arthroscopic interventions to all four cases.

Furthmore, when the symptoms precede the radiological findings, it is always necessary to perform further investigation with bone scintigraphy, CT and MRI. Although MRI is not much helpful in diagnosing osteoid osteoma, in my case it was useful, particularly in showing the inflammatory reaction produced by osteoid osteoma and excluding other associated pathologies. In my case, knee pain was misdiagnosed, respectively, as a meniscal tear and a femoro-patellar dysplasia, but no history of trauma, no patellar malalignment was present in this case. Complete excision of the nidus remains decisive and, in my case, the arthroscopic procedure was necessary to detect and remove this particular tumour. Under arthroscopic control it is even possible to work in a small room like I did in my case and it is possible to avoid destroying open approaches in order to reach hidden lesion that is difficult to reach by open surgery. Using this procedure the hospital stay was reduced to 1-3 days and the patient returned quicly to the normal sporting activities.

References

1. Georgoulis, A. D., Papageorgiou, C. D., Moebius, U. G., (2002). The diagnostic dilemma created by osteoid osteoma that presents as knee pain. Arthroscopy: The Journal of Arthroscopic & Related Surgery, 18, 32-37.
2. Gitelis, S., McDonald, D. J. (1998). Common benign bone tumours and usual treatment. In M. A. Simon & D. Springfield (Eds.), Surgery for bone and soft tissue tumours (pp. 181-185). Lippincott-Raven.
3. Kransdorf, M. J., Stull, M. A., Gilkey, F. W., Moser, R. P., Jr. (1991). Osteoid osteoma. Radio graphics, 11, 671-696.