

Osteoid osteoma of knee: a case report and technical note.

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Abstract

Osteoid osteoma is a small, benign neoplasm that consists of well- demarcated nidus surrounded by reactive zone of sclerosis. Typically, this lesion occurs in or on the cortex which metaphysis 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.

Key words: osteoid osteoma; knee; arthroscopy

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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 dysplasia 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

Introduction:

Osteoid osteoma is a benign tumour which usually small in size and painful. The clinical

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

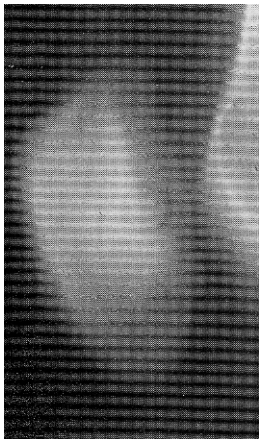


Fig 1. Spherical dense lesion in the central part of patella in the lateral knee conventional radiography.

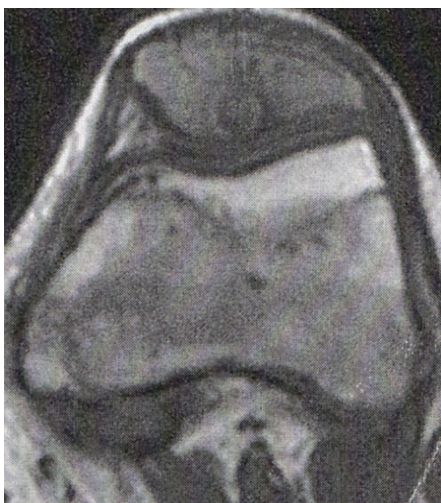
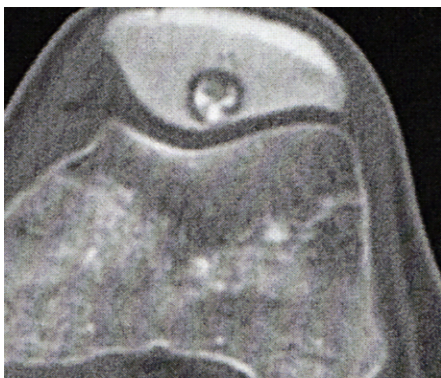


Fig 2 , 3 Axial spiral CT and axial T1 –weight MRI depicted a subchondral lesion with perinidal sclerosis in the central region of the patella. The pathologic examination confirmed the diagnosis of osteoid osteoma

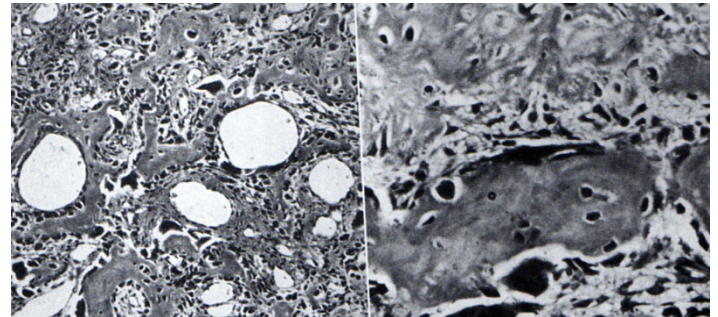


Fig. 4. The histology of an undecalcified section from the centrally dense nidus shows interconnected ossified bone trabeculae. The patient had a CT-guided wide en-block antegrade resection under arthroscopy

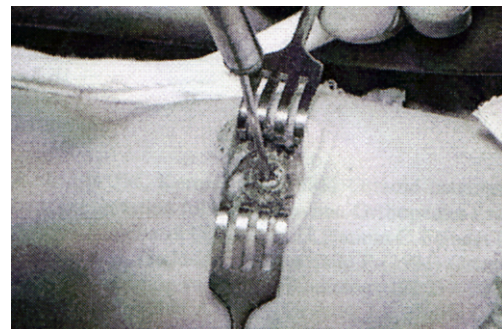


Fig.5 A 1-cm diameter hollow drill bit was used on the guidance of the kirschner wire to remove a bone block. After surgery, the patient had a complete relief of pain.

Surgical technique

With a 20-gauge needle in place a single CT cut represents 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. Subsequently, 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 kirschner wire a bone block of calculated depth and dimensions. The bony defect was filled with autologous bone graft harvested from the proximal tibial metaphysis 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. Kransdorf et al [3] demonstrated that there may be a long delay in the definite diagnosis.

Georgoulis et al [1] have emphasized the difficulty of diagnosing osteoid osteoma with atypical knee pain in 10 patients in a retrospective study. 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 were history of unnecessary arthroscopic interventions to all four cases.

Furthermore, 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 quickly to the normal sporting activities.

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