EJSS
European Journal of Surgical Sciences

Eur J Surg Sci 2013;4(2):76-79

CASE REPORT

Fibrous Cortical Defect (Non-Ossifying Fibroma) of the Lower End of the Femur with Rheumatoid Arthritis-Rare Association: A Case Report*

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* This work was presented as a case report at the Karnataka Orthopedic Association Annual Conference, Bangalore, February 2010.

ABSTRACT

Non-ossifying fibroma or fibrous cortical defects are common benign proliferations of fibrous tissue that occur in metaphyseal regions of long bones. Many are asymptomatic and are found incidentally on routine X-rays done for other reasons. We describe a case of fibrous cortical defect of the lower end of the femur with rheumatoid polyarthritis occurring in the same patient.

Key words: *Fibrous cortical defect, Rheumatoid arthritis, Bone grafting*

Received: November 21, 2012 • Accepted: January 10, 2013

ÖZET

Romatoid Artritle Birlikte Femur Alt Ucunda Fibroz Kortikal Defekt (Non-Ossifiye Fibrom): Olgu Sunumu

Non-ossifiye fibroma veya fibroz kortikal kusurları, uzun kemiklerin metafiz bölgelerinde meydana gelen fibroz dokunun ortak benign proliferasyonlarıdır. Birçoğu asemptomatiktir ve diğer nedenlerle yapılan rutin X ışınlarıyla tesadüfen bulunur. Biz femur alt ucunda fibroz kortikal defekti bulunan romatoid poliartritli bir olguyu tanımladık.

Anahtar kelimeler: *Fibroz kortikal defekt, Romatoid artrit, Kemik grefti*

Geliş Tarihi: 21 Kasım 2012 • Kabul Ediliş Tarihi: 10 Ocak 2013

INTRODUCTION

Non-ossifying fibroma or fibrous cortical defects are common benign proliferations of fibrous tissue that occur in metaphyseal regions of long bones. Many are asymptomatic and are found incidentally on routine X-rays for other lesions. A review of the literature reveals that these lesions are often asymptomatic, and surgical treatment of such lesions is reserved only for those with impending fractures or when there is diagnostic dilemma[1-6]. Fibrous cortical defects associated with other pathologies have not been described extensively. We report a case of fibrous cortical defect of the lower end of the femur with rheumatoid arthritis, the initial presentation of which was confusing; synovial biopsy, curettage and bone grafting were performed.

CASE REPORT

A 24-year-old male presented with complaints of pain and swelling of the right knee of two months duration. Pain was associated with intermittent fever. There was also occasional pain and swelling of other joints. There was history of trivial trauma to the right knee when riding a bicycle, after which the patient developed the symptoms. His medical history was insignificant.

On clinical examination, there was swelling over the suprapatellar and parapatellar areas and minimal synovial thickening, with local rise in temperature. Tenderness was present around the medial joint line as well as the suprapatellar region. Range of movement was terminally painful but not restricted. Ligamentous evaluation of the knee was normal. Clinical examination of other joints including peripheral joints was normal. A clinical diagnosis of inflammatory polyarthralgia was made.

Blood investigations revealed an elevated erythrocyte sedimentation rate of 80 mm at the first hour, with other parameters within normal range. Rheumatoid factor was negative.

X-ray of the right knee joint revealed metaphyseal eccentric benign lesion, most likely to be a fibrous cortical defect, with no evidence of pathological fracture (Figure 1). Initially, the patient was treated with analgesics and immobilization for two weeks. At the end of two weeks, the patient had marginal pain relief but continued to have pain and swelling with intermittent fever. As the symptoms did not correlate with the radiological picture, we decided to investigate further, and hence, a magnetic resonance imaging (MRI) of the knee was done.

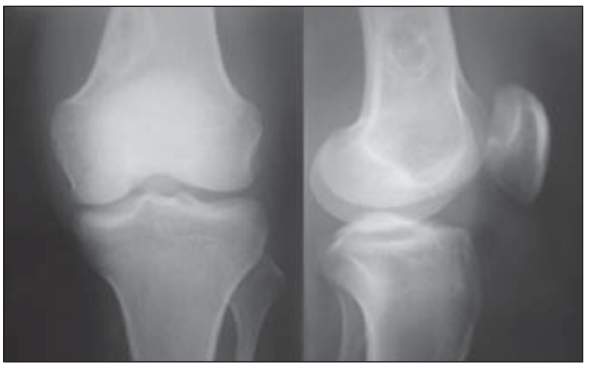

Figure 1. X-ray of right knee showing well-defined eccentric lytic lesion in the medial aspect of the distal femoral epiphysis, most likely a fibrous cortical defect.

The MRI of the knee joint confirmed the diagnosis of fibrous cortical defect with no fracture and synovial hypertrophy in the knee (Figure 2). The rest of the soft tissues including ligaments and menisci were normal. The investigation findings were analyzed and the possibility of two different pathologies coexisting in the same joint was considered. After discussing the treatment options with the patient, we decided to perform curettage and bone grafting for the fibrous cortical defect and to obtain synovial biopsy at the same stage.

A subvastus approach to the lesion was used. There was no cortical break. A bony window was made and the lesion curetted out using high speed burr. The lesion was packed with bone graft harvested from the iliac crest. Capsulotomy was then done, and the synovial tissue was found to be hypertrophied with joint effusion. Synovial biopsy was taken (Figures 3-6).

The patient had an uneventful post-operative period and was kept as non-weight-bearing for six weeks. The biopsy from the synovial tissue was reported as features consistent with rheumatoid arthritis and biopsy from the lesion was reported as fibrous cortical defect. The patient was placed on disease-modifying anti-rheumatoid drugs, and at six weeks, the fibrous cortical defect had healed and the bone graft had incorporated (Figure 7). Clinically, the patient's symptoms had improved, and disease-modifying anti-rheumatoid drugs were continued.

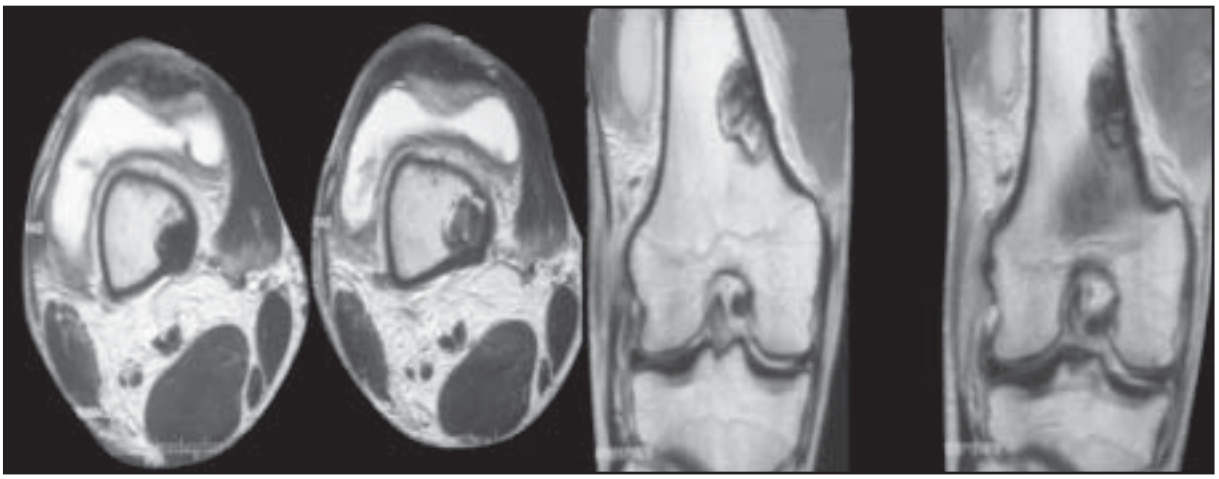

Figure 2. MRI images (axial and coronal sections) of the right knee showing the fibrous cortical defect. Knee joint shows synovial effusion with synovial hypertrophy.

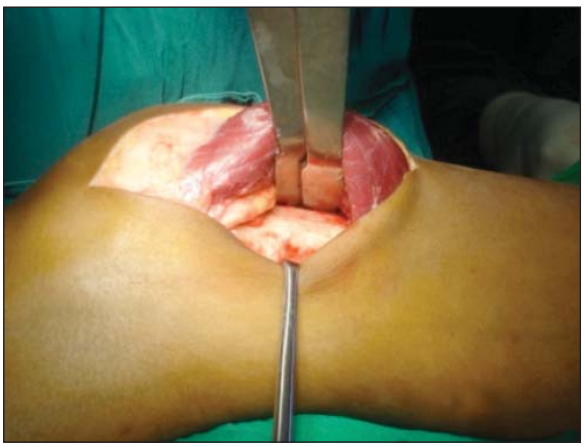

Figure 3. Lesion exposed through subvastus approach, with no evidence of cortical break.

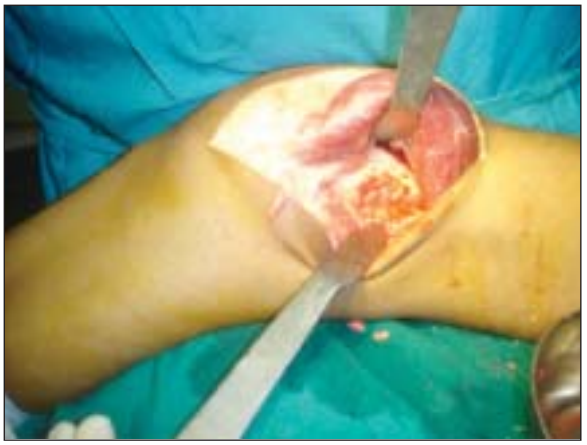

Figure 5. Cavity after packing with bone graft.

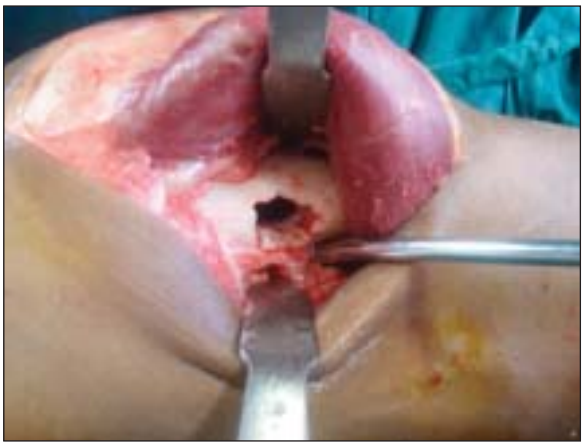

Figure 4. Lesion after curettage using high speed burr.

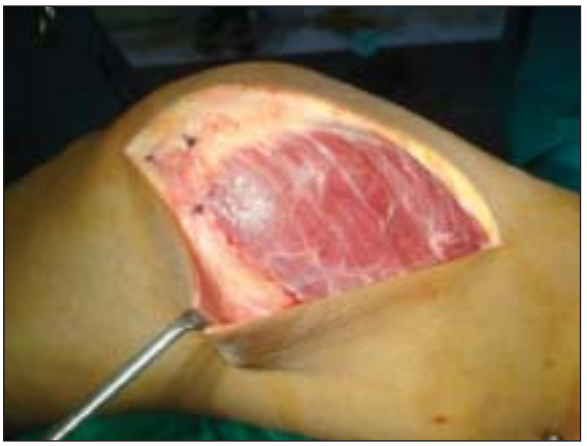

Figure 6. Closure after synovial biopsy, of both the subvastus interval and arthrotomy extension.

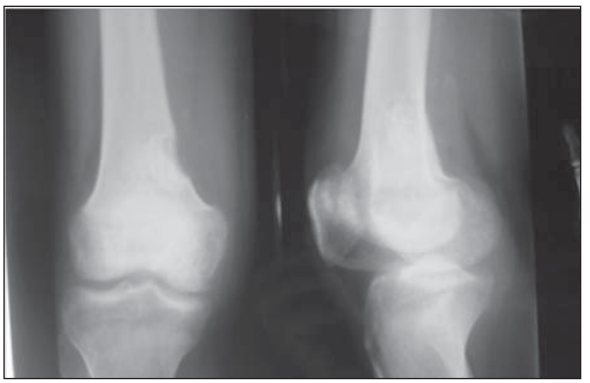

Figure 7. X-rays at 3 months showing healing of the lesion and incorporation of bone graft.

DISCUSSION

Fibrous cortical defects, or non-ossifying fibromas, are the most common benign proliferations seen in bone. The majority are asymptomatic and discovered on routine X-rays done for other reasons[1-4]. In our case, the patient presented with pain and swelling of the knee joint. X-ray showed a well-defined eccentric lytic lesion in the medial aspect of the distal femoral metaphysis, consistent with a benign pathology like fibrous cortical defect. A literature review suggests that this is the most frequent site for fibrous cortical defect around the knee[3,4]. We treated the patient with analgesics and plaster immobilization for two weeks, as the X-rays did not reveal any pathology apart from the fibrous cortical defect. At the end of two weeks, the patient had partial pain relief with persistent swelling of the right knee joint. Hence, we decided to investigate further for any soft tissue pathology with MRI. MRI revealed synovial hypertrophy with knee effusion in addition to the fibrous cortical defect. The likelihood of two different pathologies (i.e. fibrous cortical defect and inflammatory polyarthralgia) existing in the same location was considered. As it was difficult to correlate the patient's symptoms with fibrous cortical defect, and hence, to confirm the clinical diagnosis of inflammatory polyarthralgia, a synovial biopsy was obtained. Diagnostic arthroscopy and soft tissue biopsy was considered but then abandoned, as it was further decided in discussion with the patient to proceed and treat the defect as well with curettage and bone grafting, which would be difficult with arthroscopy alone. Histopathology confirmed the diagnosis of rheumatoid arthritis and fibrous cortical defect. The patient made an uneventful recovery, with the defect consolidating over a period of three months, and the polyarthralgia symptoms were controlled with disease-modifying anti-rheumatoid drugs. As in our case, when a benign bone lesion presents in an atypical manner, a biopsy is mandatory for further evaluation of the disease process[2-4,6].

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