Rheumatol Int (2008) 28:601–603
DOI 10.1007/s00296-007-0486-3

CASE REPORT

Osteoid osteoma of the acetabulum: a case report

Aziza Mounach · Abderrazak Nouijai · Imad Ghozlani · Mirieme Ghazi · Lahsen Achemlal · Ahmed Bezza · Abdellah El Maghraoui

Received: 26 July 2007 / Accepted: 24 October 2007 / Published online: 7 November 2007

Abstract The acetabulum is a very rare location for osteoid osteoma. The diagnosis is difficult and usually delayed because the acetabulum is a rare site for this tumour and clinical signs are non-specific. Reported herein is the case of a 33-year-old woman who had non-specific pain and limitation of range of motion of the right hip. Bone scan, computed tomography and magnetic resonance imaging assessed the diagnosis of osteoid osteoma. Percutaneous resection guided by CTscan was performed and histology confirmed diagnosis. At follow-up, from two years, the patient remains asymptomatic. Osteoid osteoma of the acetabulum has been reported only in 13 cases. It is usually characterised by signs of synovitis. Recently, Computed Tomography guided percutaneous resection of OO has become the treatment of choice.

Keywords Acetabulum · Osteoid osteoma · Synovitis

Introduction

Osteoid osteoma (OO) is a benign osteoblastic tumour found predominantly in males between the ages of 10 and 25 years. More than 50% of the lesions occur in the diaphysis of long bones of the lower extremity. Only 1.2–2% of OO occur in the pelvis [1, 2]. The acetabulum is an extremely rare site of OO and diagnosis is always delayed since the disease presents as coxitis of undetermined origin for long periods of time [1–5].

A. Mounach · A. Nouijai · I. Ghozlani · M. Ghazi · L. Achemlal · A. Bezza · A. El Maghraoui (✉)
Rheumatology and Physical Rehabilitation Department, Military Hospital Mohammed V, PO Box 1018, Rabat, Morocco
e-mail: aelmaghraoui@gmail.com

Observation

G.L. a 33-year-old-woman started to complain since two months from pain localized in the right groin and radiating to the anterior face of the thigh. The pain was permanent but exacerbating at night and disappearing with non steroidal anti-inflammatory drug intake. It causes limp and limitation of range of motion of the right hip.

Clinical exam showed a well-being patient slightly febrile (37.7°C). She walked with a right antalgic gait. The hip movements were limited and painful. Spine and sacroiliac joints exam was normal.

Biological exams showed: ESR 30 mm/1 h, CRP < 4 mg/l, normal white blood count. Infectious and immunological exams were negative.

Pelvic and lumbar spine X-rays were normal. Bone scan showed increased uptake in the right acetabulum (Fig. 1). Right hip magnetic resonance imaging (MRI) showed a slight right hip effusion and a circular high-intensity lesion in the acetabulum (Fig. 2). Computed tomography (CT) scan of the right acetabulum showed the typical feature of osteoid osteoma: osteodense lesion with radioluscent borders and surrounding sclerosis (Fig. 3). Percutaneous resection guided by CT scan was performed with debridment of the surrounding area. Histological examination confirmed the diagnosis of osteoid osteoma, showing the nidus, surrounding osteosclerosis and catarrhal synovitis. Two years later, the patient is pain-free and has a good range of motion.

Discussion

Intra- and juxta-articular localizations of OO are rare: 5 of 505 cases of osteoid osteoma are reported in the series of

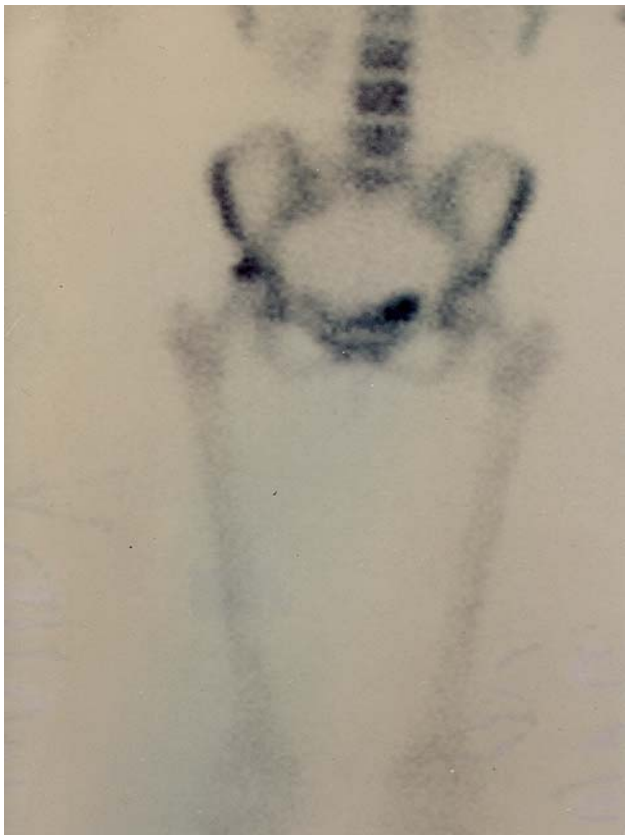

Fig. 1 Ninety-nine meter technecium bone scan showed an increased signal uptake in the affected acetabulum

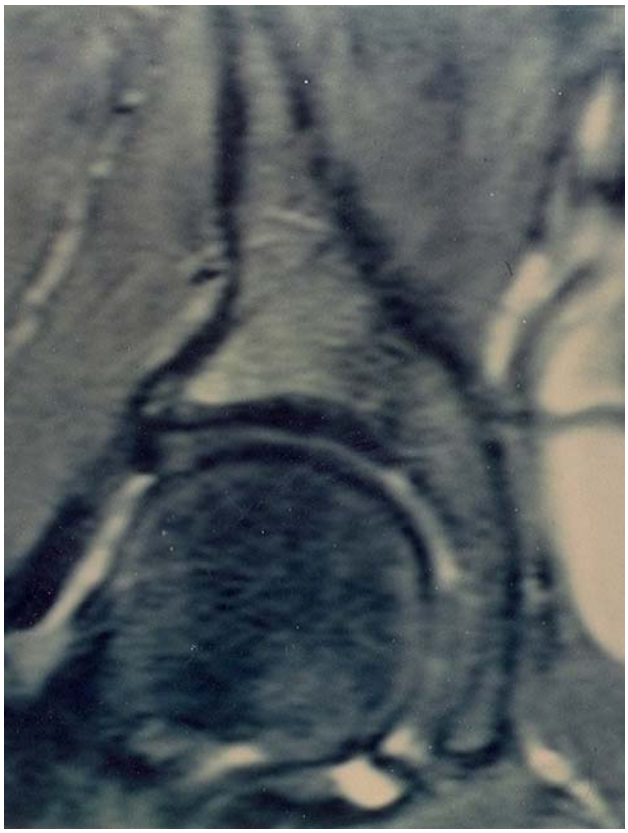

Fig. 2 Magnetic resonance imaging showed a slight right hip effusion and a circular high-intensity lesion in the acetabulum

Freiberg and colleagues [3]. OO of the aceatbulum is particualry rare [1–7]. We reviewed only 13 cases in the literature [3, 5, 6].

Intra- and juxta-articular OO are always characterized by signs of synovitis. When the hip is affected, symptoms include pain, antalgic gait, painful restriction of movement, and buttock and thigh muscle atrophy [1–6]. Restricted range of motion and contractures may occur. Dejour and co-workers [6] reported a case of flexion contracture of the hip in adult patient. These contractures may be caused by a capsular thickening and retraction. The classical nocturnal quality of pain found in around 80% of extra-articular OO is absent and the pain is less responsive to salicylates when the OO is intra-articular [8, 9]. Some relief however may occur from non steroidal anti-inflammatory drugs but a similar response may be expected from other inflammatory disorders.

Numerous published reports highlight the similarity of the clinical findings to a variety of acute, subacute and chronic inflammatory arthritides, including septic arthritis and tuberculosis, pigmented villonodular synovitis, synovial chondromatosis, gout, rheumatoid arthritis and osteoarthritis [4, 6, 8, 10, 11], all of which resulted in unrewarding diagnostic procedures and inappropriate treatment. Symptoms may also be refereed to another joint, causing confusion with regard to the area of investigation [6]. Intra-articular tumors of the bony pelvis are difficult to diagnose with plain radiographs, not only due to the absent or minimal surrounding osteosclerosis, but also the anatomic complexity of the bone structure [1–11]. Radiographs features are variable, but can include a radiolucent nidus, joint space widening, joint effusion, and sclerosis. Takaoka et al. [10] described an ectopic ossification associated with OO in the anterior rim of the acetabulum. The mechanism of reactive bone formation resulting in increased radiologic density of bone in the perifocal region of the nidus is not clear, but it has been speculated that the nidus may release a bone stimulating agent such as prostaglandin or bone morphogenetic protein [10]. Technetium bone scanning has proved useful in the identification of OO [1–11]. Only one isotopic study was reported to have completely false-negative findings for an OO [12]. The classical isotopic appearance is of a small focal area of intensively augmented uptake surrounded by a large area of mildly augmented uptake that reflects the reactive bone or synovitis. However, the intensity of the focal uptake associated with intracapsular lesions is, in general, less than that of cortical lesions. CT is the best technique in demonstrating the exact anatomic location and extent of the lesion [1–12]. The MRI is also an

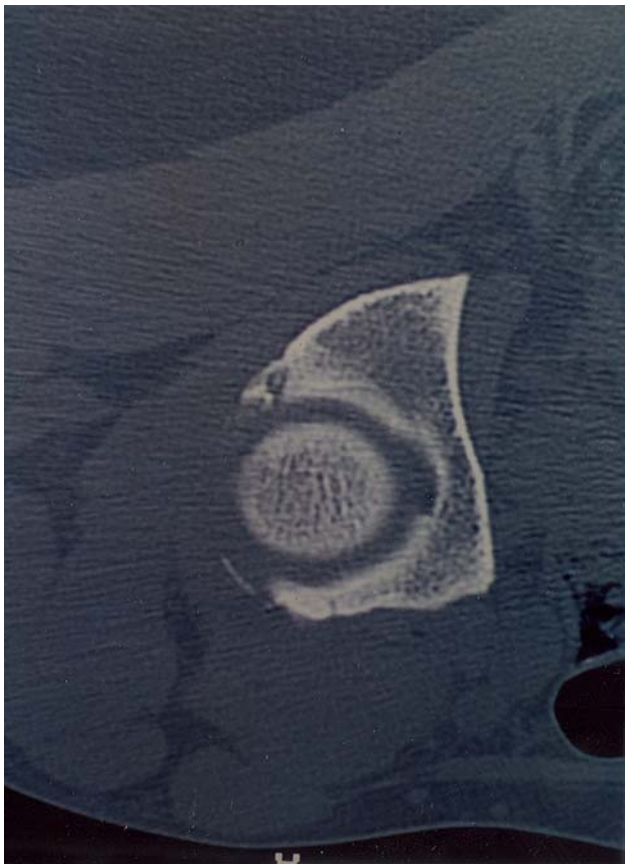

Fig. 3 CT scan showed the typical feature of osteoid osteoma: osteodense lesion with radioluscent borders and surrounding sclerosis

excellent radiographic method for imaging joint disorders and demonstrates the tumor nidus of the intra-articular OO, but the presence of secondary synovitis and marrow oedema led to erroneous diagnoses [12].

The intra-articular location also provokes a proliferation of the synovium, and capsular and extracapsular tissues have been found to be oedematous, thickened and fibrotic at surgery. Histologically, the synovium has been designated as chronic nonspecfic synovitis. Snarr et al. [13] described it as lymphofollicular synovitis indistinguishable from rheumatoid synovium. It has been postulated that the inflammation of synovial tissues in intra-articular OO may be caused by a specific activator substance and the increased prostaglandin (PGE2) levels found in OO at other sites may be of relevance. The histocompatibility markers (HLA) namely DR4, DR7 found commonly in rheumatoid arthritis, have also been demonstrated in some patients with intra-articular OO of the hip, and when present, were associated with a higher incidence of concomitant arthritis [8].

Reports of medical management of unconfirmed OO may be found in the literature. This treatment is less invasive and may be more cost-effective than surgical treatment, but certainly drug sensitivity, side effects, and prolonged periods of treatment are factors to be considered [14]. Surgical excision of the nidus may be curative and is recommended as the preferred treatment. Since 1990, CT-guided resections of OO located at the proximal femur were performed in seven patients. The precise localization of the nidus allowed percutaneous removal of the lesion with minimal alterations of the surrounding normal bone. This procedure presents potential advantages that traditional open surgery techniques do not have [15].

References

1. Miller SJ, Smith DW, Beckett WW, Gaines RW (1997) Intra-articular osteoid osteoma of the acetabulum in a 6-year-old. Orthopedics 20:645–646
2. Bettelli G, Capanna R, Vanhorn JR, Ruggieri P, Biagini R, Campanacci M (1989) Osteoid osteoma and osteoblastoma of the pelvis. Clin Orthop 247:261–271
3. Gille P, Gross P, Brax P, Carcopino JM, Aubert D, Giordan H (1990) Osteoid osteoma of the acetabulum:two cases. J Pediatr Orthop 10:417–418
4. Cohen I, Rzetelny V (1994) Osteoid osteoma of the acetabulum. A case report. Clin Orthop 304:204–206
5. Karray S, Zllitni M, Karray M, Moalla M, Zouari M, Douik M, Sliman N (1993) Osteoid osteoma of the acetabulum. Internat Orthop 17:54–56
6. Dejour H, Leclerc P, Nourissat C (1975) Ostéome ostéoïde du fond du cotyle. Rev Chir Orthop 61:755–758
7. Jaffrès R, Courtois B, Mazabraud A (1970) Ostéome ostéoïde avec réaction articulaire de voisinage. Rev Rhum 37:394–396
8. Cassar-Pullicino VN, Mccall IW, Wan S (1992) Intra-articular osteoid osteoma. Clin Radiol 45:153–160
9. Pikoulas C, Mantzikopoulos G, Thanos L Passomenos D, Dalaraminis C, Glampedaki-Dagianta K (1995) Unsually located osteoid osteomas. Eur J Radiol 20:120–125
10. Takaoka K, Yoshikawa H, Masuhara K, Sugano N, Ono K (1994) Ectopic ossification associated with osteoid osteoma in the acetabulum. A case report. Clin Orthop 299:209–211
11. Norman A, Fikry A, Buyon J, Matzkin E (1986) Osteoid osteoma of the hip simulating an early onset of osteoarthritis. Radiology 158:417–420
12. Goldman AB, Schneider R, Pavlov H (1993) Osteoid osteoma of the femoral neck: report of four cases evaluated with isotopic bone scanning, CT, and MR imaging. Radiology 186:227–232
13. Snarr JW, Abell MR, Martel W (1973) Lymphofollicular synovitis with osteoid. Osteoma Radiol 106:557–560
14. Kneisl JS, Simon MA (1992) Medical management compared with operative treatment for osteoid osteoma. J Bone Joint Surg 74A:179
15. Luis Muscolo D, Velan O, Acero GP, Ayerza MA, Calabrese ME, Araujo ES (1995) Osteid osteoma of the hip. Percutaneous resection guided by computed tomography. Clin Orthop 310:170–175