

Case reports

Osteoid osteoma in the femoral head—a report of 3 cases

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Case 1

A 31-year-old woman presented with a 2-year history of right groin pain radiating down the anterior thigh. Initially, the pain was intermittent during the day but then became more continuous 6 months later, also disturbing her sleep. Anti-inflammatory drugs relieved the pain for a long period, but then became less effective. 1.5 years after onset of pain, the patient was examined by plain radiographs, CT and MRI which showed normal findings and the patient was advised to consult a psychiatrist.

2 years after onset of pain, the patient was seen by one of the authors. The patient had a full range of motion in the right hip but pain at the extremes. Plain radiographs were again normal. However, a new CT and MRI demonstrated a small round lesion in the posterosuperior femoral head. A technetium bone scan revealed a hot spot in the same location. At operation, using a posterolateral approach without dislocation of the hip, a soft yellowish area (2 × 2 mm) in the articular cartilage of the femoral head was seen. A cylinder of 3 × 6 mm containing a white nidus was removed. A histological examination confirmed the diagnosis of osteoid osteoma. The hip became pain-free after surgery and remained so, at latest follow-up, 14 months later.



CT-scan of the right hip, showing a round sclerotic lesion with a hypodense circular zone in the posterior aspect of the femoral head.

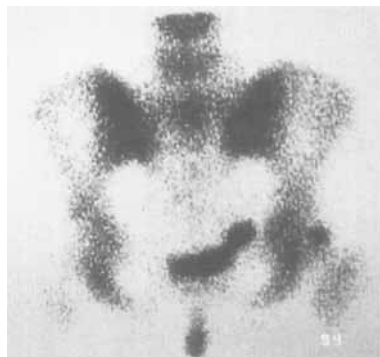


MRI-scan (T2-weighted, gradient echo) with a mainly dark central signal.

Case 2

A 20-year-old man experienced sudden pain during sport exercises. The pain was pronounced at night, but was also present during the day. The patient felt some relief when taking a nonsteroidal anti-inflammatory medication before going to bed. Because of persistent symptoms, radiological investigations were done about 2 years after onset. A nonhomogeneous bony structure was found in the lateral part of the femoral head. Neither conventional tomography nor a CT-scan nor bone scintigraphy could give a definitive diagnosis.

4 years after onset of symptoms the patient again sought medical attention for persisting symptoms.

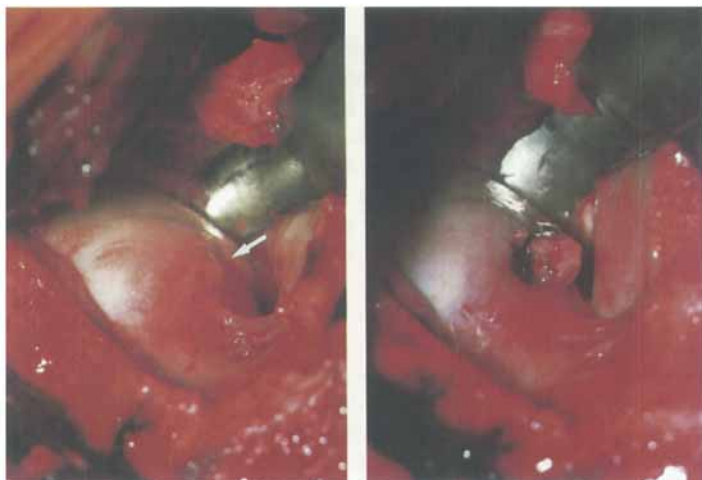


Technetium bone scan with an intensive uptake in the lesion (posterior view).

Case 2.

A round, slightly sclerotic lesion in the femoral head and reactive changes.

Intraoperative findings in the femoral head after anterior capsulotomy of the hip joint. The lesion is shown before (left, white arrow), and during (right) excision of the osteoid osteoma.



Now plain radiographs and a CT showed an isolated osteophyte-like reaction at the superolateral side of the femoral head, consistent with a subperiosteal osteoid osteoma. A bone scan revealed a hot spot in the femoral head. Surgical excision of a reddish 5-mm nidus was performed through a transgluteal approach with an anterosuperior capsulotomy of the hip joint. Histology was typical of osteoid osteoma. The symptoms disappeared directly after surgery and are still absent more than 8 years later. The last plain pelvic radiograph showed no further changes in the hip joint.

Case 3

A 19-year-old man had a spontaneous onset of left gluteal pain, mainly in the evening and at night. The symptoms disappeared nearly completely after he took salicylates. 2.5 years after onset, based on plain radiographs, tomography, bone scan, and MRI, an osteoid osteoma was diagnosed in the anterolateral quadrant of the femoral head. The patient refused operation.

2.5 years later (5 years after onset of symptoms), the patient complained of pain also after activity and long walks. In contrast to the pain at night, the pain after activity did not respond well to salicylate medication. Flexion and abduction were minimally restricted. However, there was a marked restriction of rotation, with a loss of 20° internal and 15° external rotation compared to the unaffected side. Plain radiographs now demonstrated a sclerotic density and an osteophyte on the superolateral side of the femoral head. The joint space was minimally reduced. There was also an osteophyte on the lateral acetabular margin. On MRI, a small round osseous lesion was seen in the anterolateral area of the femoral head. Bone

scintigraphy showed high activity at this spot. These findings were consistent with an osteoid osteoma of the femoral head, associated with secondary degenerative changes of the hip joint. A surgical resection was recommended again, but the patient refused surgery.



At first presentation with structural changes in the superolateral femoral head.

3 years later: osteophyte-like reaction around the lesion and narrowing of the joint space.



MRI scan (T2 weighted, spine echo) with high central signal intensity surrounded by a ring with low signal intensity.

Discussion

Osteoid osteoma of the proximal femur is most typically found in the femoral neck (Dahlin 1978). An epiphyseally-located osteoid osteoma is extremely rare and in only 2 cases (4 and 9-year-old children) an osteoid osteoma has been reported in the femoral head (Dunlap and Martin 1985, Fassier et al. 1986).

Epiphyseal osteoid osteomas are difficult to diagnose because they are located subperiosteally or in cancellous bone with less sclerotic reaction around the nidus than cortical osteoid osteomas have (Kumar et al. 1984, Alani and Bartal 1987, Schlesinger and Hernandez 1990). Intraarticular osteoid osteomas are reported to mimic the symptoms of inflammatory arthritis with joint effusion and widening of the joint space radiographically (Kumar et al. 1984, Alani and Bartal 1987). Delay in diagnosis is common (Kumar et al. 1984, Alani and Bartal 1987) and secondary changes, such as widening and shortening of the femoral neck, as well as a decrease in the height of the femoral epiphysis have been described in adolescents presenting with symptoms of more than 3 months' duration (Kumar et al. 1984). Norman and Dorfman (1975) described pronounced deformities and overgrowth in children up to the age of 8 years. Arthrotic changes in conjunction with intracapsular osteoid osteomas of the femoral neck have been reported (Sherman 1947, Clark et al. 1981). In our case 3, we found narrowing of the joint space and osteophytes after 5 years.

Surgical resection is the recommended treatment, but it poses technical difficulties when the tumor is adjacent to the physis (Alani and Bartal 1987). Exact localization by radiographic imaging is a prerequisite. Preoperative tumor localization under CT guidance,

using guide wires placed in the tumor or pins which are used to make drill holes at the tumor site are useful (Muscoli et al. 1995). Successful percutaneous resection guided by CT has been described by Muscoli et al. (1995). In our 2 adult cases, the osteoid osteoma could be seen after capsulotomy and rotation of the femoral head and was technically easy to resect.

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Transmission of human T-cell lymphotropic virus type 1 by a deep-frozen bone allograft

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Transplantation of bone using frozen allografts implies a risk of transmitting viral infections like human immunodeficiency virus type 1 (HIV-1) and hepatitis C (Simonds et al. 1992, Conrad et al. 1995). Human T-cell lymphotropic virus type 1 (HTLV-1) infec-

tions are endemic in some parts of the world—for example, Japan and the Caribbean—but have also been observed occasionally in many other countries. Breastfeeding is a major mode of transmission in endemic areas (Goldfarb 1993). This virus is associat-