Hip pain in the third trimester of pregnancy

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CASE REPORT

A 33-year-old woman presented with pain in the right groin 2 weeks after a caesarean section delivery of her first baby. The pain had increased in severity, and it had been present for 6 weeks before delivery. There was radiation from the front of the thigh to the knee. There was no systemic upset and she had no medical problems. Examination showed gross restriction of movements in the right hip with rotation provoking the pain. Pelvis X-ray (*Figure 1*) showed diffuse loss of the osseous architecture of the right femoral head with narrowing of the joint space.

Clinically septic arthritis of the right hip joint was suspected. A computed tomography (CT) scan confirmed generalized osteopenia of the femoral head (*Figure 2*).

Under CT guidance a small amount of clear fluid was aspirated from the joint space, no organisms were identified, aspirate and blood cultures showed no growth and white cell blood count was within normal limits. The patient was suspected to have a septic arthritis of the right hip and was treated empirically with intravenous antibiotics, oral fucidin and bedrest. Within 2 days the pain had settled, and she was instructed to mobilize with crutches, non weight-bearing on the right side.

Magnetic resonance T1-weighted images (*Figure 3*) shortly after presentation (2 weeks) showed low signal changes within the bone marrow cavity of the femoral head and neck of the right hip. The changes were mainly subarticular in distribution. The femoral head height was maintained.

Partial weight bearing was allowed later for a further 6 weeks. She made a full recovery, with no pain on mobilization. Two months after her initial presentation a CT scan showed normal appearances of the right hip joint. Isotope bone scan 5 months after presentation showed increased uptake in the femoral head (*Figure 4*).

Figure 1. Pelvis X-ray shows diffuse loss of the osseous architecture of the right femoral head with narrowing of the joint space.

INTRODUCTION

Transient osteoporosis of the hip (TOH) is characterized by disabling hip joint pain, a limited range of hip motion, focal loss of radiodensity on plain radiographs and increased tracer uptake in bone scintigraphy (Hoffman and Kramer, 1997).

TOH can occur in middle-aged men; in women it occurs at a younger age (20–40 years), the majority of whom are affected during the third trimester of pregnancy. It was first described in association with the third trimester of pregnancy by Curtiss and Kincaid in 1959. Bone marrow oedema syndrome (BMOS) has been used as an alternative description (Hoffman and Kramer, 1997). TOH is a self-limiting disease and responds to treatment, in contrast to avascular necrosis (AVN) of the hip which is progressive and may need early operative treatment. When associated with pregnancy, TOH usually occurs in the third trimester, but it is uncommon and the true incidence is not known.

DISCUSSION

Clinically patients with TOH have pain in the hip, and pronounced osteopenia of the femoral head and neck during the third trimester of pregnancy. Laboratory tests are usually within normal limits, except for an elevated erythrocyte sedimentation rate and an increase in urinary hydroxyproline (Hoffman and Kramer, 1997). A full recovery is expected several months postpartum, although symptoms can recur.

Radiological changes do not occur until 4–8 weeks after the onset of the

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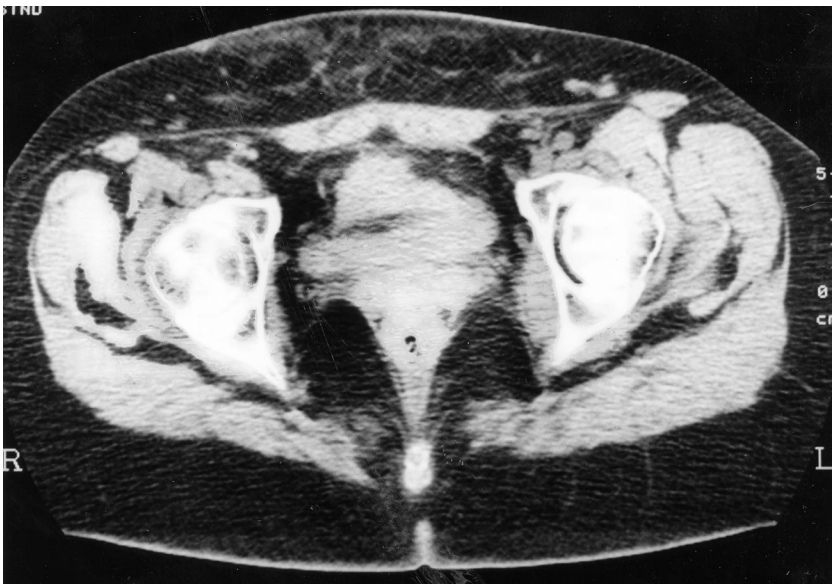

Figure 2. Computed tomography scan confirms generalized osteopenia of the right femoral head.

symptoms, revealing diffuse osteopenia in the femoral head and neck blurring the normal trabecular structure, but without any focal signs of AVN or a subchondral fracture. The joint space is preserved (Hoffman and Kramer, 1997).

Bone scintigraphy, which visualizes the vascularity and bone turnover, shows an intense increased uptake in the femoral head at an early stage. After 4 months in this case there was still increased uptake in the femoral head. The disadvantage of bone scintigraphy is the lack of specificity, in that increased tracer uptake is also seen in infections, bone tumours and in other conditions with high bone turnover (Hoffman and Kramer, 1997).

Magnetic resonance imaging (MRI) can accurately differentiate TOH from AVN. Diffuse bone marrow oedema is seen in the femoral head and neck with TOH. In TOH low intensity of the bone marrow for T1-weighted images and high intensity signal for T2-weighted images are seen, which return to normal 6 months postpartum. In AVN the changes are more focal (Hoffman and Kramer, 1997).

Aspiration of the hip as well as biopsy of synovial tissue have revealed non-specific inflammatory changes. The diagnosis can be elusive and the symptoms are often attributed to sciatica. The differential diagnosis includes tuberculous and non-tuberculous infection, neoplasm, reflex sympathetic dystrophy and AVN. The diagnosis is made by exclusion as the cause is not known (Hoffman and Kramer, 1997).

Most cases of TOH resolve spontaneously after an average of 6 months. No treatment other than protected weight bearing and analgesics is recommended. Steroids, anti-inflammatory medication, traction, physiotherapy, sympathectomy and calcitonin have not altered the clinical course (Fingeroth, 1995).

The most serious complication of TOH is a pathological fracture. To date only seven have been reported (Ostrowski, 1994; Junk, 1996; Fokter, 1997), and three of these cases required operative fixation.

As long as fracture does not occur the symptoms resolve over 3–6 months and the radiographic changes return to normal. Symptoms of TOH can be disguised during the final part of pregnancy, and obviously radiographs are undesirable at that stage.

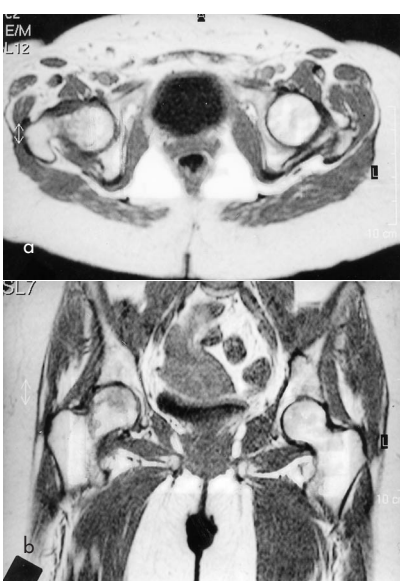

Figure 3. Magnetic resonance imaging scan T1 weighted images shortly after presentation (2 weeks) shows low signal changes within the bone marrow cavity of the femoral head and neck of the right hip. The changes were mainly subarticular in distribution. The femoral head height was maintained. a. Axial view. b. Sagittal view.

CONCLUSIONS

It is important that obstetricians and orthopaedic surgeons should be aware of idiopathic TOH, and exclude other sinister pathologies. When the diagnosis of idiopathic TOH is made, pathological fractures can occur occasionally, although in most cases it runs a benign course. HM

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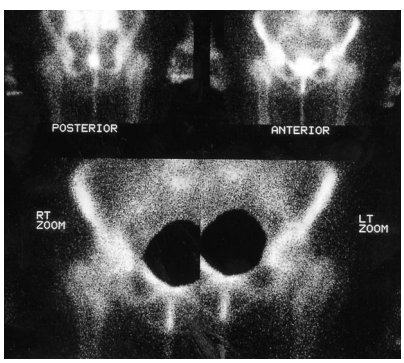

Figure 4. Isotope bone scan 5 months after presentation shows increased uptake in the right femoral head.