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# Ileopectineal bursitis following total hip replacement

Two cases of ileopectineal bursitis following total hip replacement are presented. Inflammation, infection and trauma are discussed as pathogenic factors. The results of fine needle biopsy, radiologic examination including CT and ultrasonography, as well as bacteriological cultures are described. The therapy was surgical in both cases.

**Key words:** bursitis; hip arthroplasty.

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At the Department of Orthopedic Surgery in Lund, about 150 total hip replacements are performed annually. Two of these subsequently presented with a soft tissue mass in the groin which was demonstrated radiologically to represent enlargement of the ileopectineal bursa.

The muscle girdle around the hip joint includes three to four bursae, of which the ileopectineal bursa often communicates with the hip joint.

## Case reports

### Case 1

A 42-year-old female with osteoarthritis from congenital dislocation of both hips underwent standard total hip replacement on the left side in 1974 and on the right side in 1975. Prophylactic antibiotics (Cloxacillin 1g  $\times$  4) were administered.

Postoperatively, the temperature was elevated (37.5–38.8°C) for 10–14 days after both operations.

In September 1981, sudden pain developed in the region of the left hip. The temperature was 37.5°C and the sedimentation rate (ESR) 9 mm. Radiography was normal. Eight months later a 4  $\times$  4 cm hard mass adherent to the pelvis appeared in the left groin. Fine needle biopsy suggested malignancy. Radiographs at this time suggested loosening of the socket. Computed tomography (CT) demonstrated a homogeneous encapsulated mass anteromedial to the head of the prosthesis. The mass was punctured and found to be cystic. Following aspiration and injection of water-soluble contrast medium, no com-

munication with the joint could be demonstrated (Figure 1). At subsequent arthrography the cyst was opacified, suggesting a one-way communication between the hip joint and the cyst. At surgery, a thin-walled cyst located within the iliopsoas fascia was excised. It communicated freely with the hip joint. A piece of loose cement was found close to the cyst. Cultures obtained from the cyst demonstrated significant growth of *Propionibacterium acnes* (Kamme & Lindberg 1981) prompting antibiotic treatment. Microscopic examination of the specimen revealed chronic bursitis with a granulomatous reaction.

Recovery was uneventful. Subsequent progressive clinical and radiological evidence of loosening of the prosthesis prompted exchange of the prosthesis. Bacterial cultures at this time were negative.

### Case 2

This patient was a 37-year-old female with Crohn's disease and post-traumatic osteoarthritis of the left hip following dislocation of the femoral head and fracture of the acetabulum in 1963. In 1977, a total hip replacement was performed. Prophylactic antibiotics were given and recovery was uneventful.

In June 1980, 6 months after hysterectomy, a small mass appeared in the scar. Fine needle biopsy revealed chronic inflammation. Bacterial cultures were negative. CT-scan demonstrated a rounded mass between the iliac bone and the internal oblique muscle medial to the iliopsoas muscle (Figure 2a). At ultrasonography, it was found to be cystic. Puncture of the cyst and injection of water-soluble contrast medium showed a connection with the joint (Figure 2b). At surgery, a 12  $\times$  7 cm, thick-walled, granulomatous bursa was excised along the ileopec-

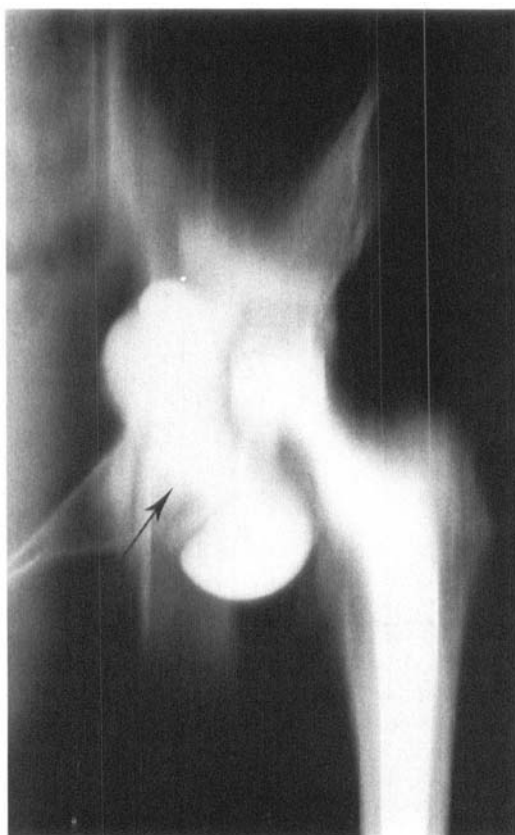


Figure 1. Tomogram anterior to the prosthesis following puncture and injection of water-soluble contrast into the bursa. No communication with the hip joint was found. The intermediate part of the bursa, obscured by the prosthesis on plain films, is clearly demonstrated on this tomographic section (arrow).

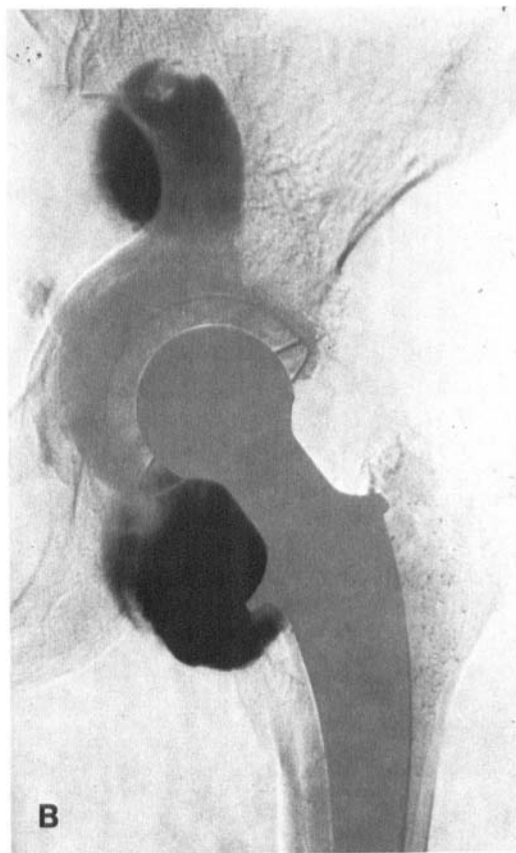
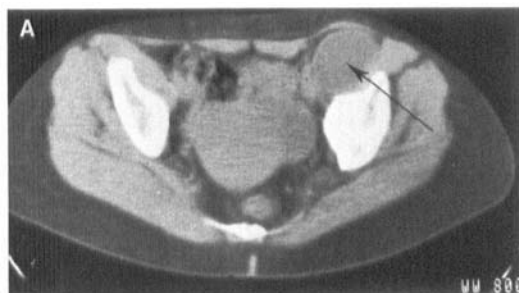
tineal fascia. The bursa communicated freely with the hip joint without any valve mechanism. Recovery was uneventful. Bacterial cultures were negative.

Microscopic examination revealed a bursa with a foreign body reaction.

Figure 2. A. CT examination of the inguinal regions with a rounded mass between the left iliac bone and the internal oblique muscle, medial to the iliopsoas muscle (arrow). The mass appears homogeneous except for a peripheral rim of higher density, suggesting a capsule. B. Plain film of the hip (subtraction technique) following puncture of the bursa and contrast injection. The bursa communicates with the joint medial to the neck of the femoral prosthesis. For technical reasons inherent to the subtraction technique, the part of the cyst overlying the radiodense components of the prosthesis is not visualized.

## Discussion

Several reports have described bursitis in joints affected by rheumatoid arthritis (Conventry et al. 1959, Takahiko et al. 1978). Beside this inflammatory condition, infection or trauma might elicit bursitis. Keller et al. (1980) reported a low virulent anaerobic bursal infection in the groin with *Propionibacterium acnes* in a 65-year-old male with rheumatoid arthritis.



The signs and symptoms of a painful mass in the groin give rise to several diagnostic considerations (Finder 1938). In a patient with previous total hip replacement, elevated temperature and pain in the operated hip, a fine needle biopsy and bacterial cultures should be obtained immediately. In both our cases a cystic lesion was strongly suggested at CT and ultrasonography, and subsequently confirmed by conventional radiography with contrast injected into the cyst and/or the hip joint. A one-way communication was suggested in one case but no valve mechanism was verified at surgery, as has been proposed for popliteal cysts of the knee (Taylor & Rana 1973). Fine needle biopsy as well as bacterial cultures may be inconclusive. A combination of all the above-mentioned modalities is required for a comprehensive preoperative evaluation.

The iliopectineal bursa is situated where two opposite groups of muscles meet. The flexor muscles of the hip and the extensor muscles of the knee contract in opposite directions and might cause iterated trauma to the bursa, in the present cases aggravated by total hip replacement and, in one case, infection.

The treatment consists of total extirpation of the bursa and exchange of the prosthesis if loosening or infection is present.

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