



## Case Report

## Unilateral Lower Limb Swelling Caused by a Synovial Cyst of the Hip Joint

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### Abstract

A 54-year-old woman with a history of severe rheumatoid arthritis presented with painful swelling of the left lower limb. Computed tomography showed a large synovial cyst of the underlying hip joint with femoral vein compression. We also observed proximity of the cyst to the surrounding structures and communication between the cyst and the hip joint cavity. (*Tzu Chi Med J* 2010;22(1):65–67)

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## 1. Introduction

Unilateral leg swelling is a common presentation of deep venous thrombosis. However, rarer causes of swelling should not be forgotten. We present a case of lower limb swelling due to compression of the femoral vein by a synovial cyst of the hip and the computed tomography (CT) findings.

## 2. Case report

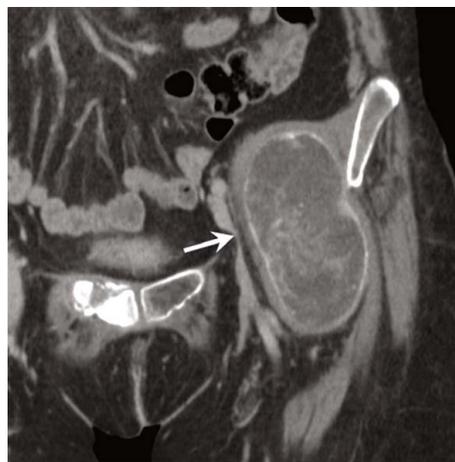
A 54-year-old woman with a 13-year history of seropositive rheumatoid arthritis presented with painful

swelling of the left lower limb, which had been increasing for approximately 1 week. No similar symptoms were noted on the right side. On examination, a firm, tender, nonpulsatile mass was palpable at the left groin, without bruits on auscultation. There was no local heat or tenderness, and the pulses in the distal leg were normal.

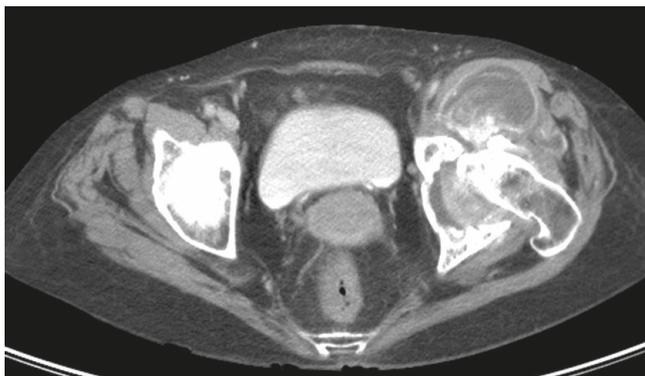
An X-ray of the pelvis showed diffuse osteopenia, loss of cartilage width and bony erosion of bilateral hips. Collapse of the left femoral head was also observed (Fig. 1). A CT scan of the pelvis revealed a round structure, 5 cm in diameter, of soft-tissue density with well-defined partially calcified margins. It lay adjacent to the medial surface of the iliac bone at the



**Fig. 1** — Pelvic radiography demonstrates diffuse osteopenia, loss of cartilage width and bony erosion of bilateral hips. Collapse of the left femoral head is also shown.



**Fig. 3** — Reformatted computed tomography shows a cystic mass compressing the femoral vein (arrow).



**Fig. 2** — Computed tomography shows the left inguinal cyst. The connection between the cyst and the hip joint is clearly demonstrated.

level of the floor of the acetabulum, displacing the external iliac vessels medially and the iliac psoas muscle anteriorly. The lesion was connected to the hip joint on the distal side, and a synovial cyst was therefore diagnosed as the cause of venous stasis of the left leg (Figs. 2 and 3). There was no thrombosis inside the external iliac vein.

Since the patient refused further surgical intervention for removing the synovial cyst, she was managed conservatively, with rest and analgesics. The symptoms resolved gradually.

### 3. Discussion

A synovial cyst of the hip is an enlarged iliopsoas bursa usually caused by orthopedic disorders of the hip joint, such as rheumatoid arthritis, osteoarthritis, or trauma (1–3). It communicates with the hip joint by a defect

in the thinnest part of the capsule between the pubofemoral and iliofemoral ligaments. Overproduction of intra-articular fluid and weakening of the joint capsule by inflammation predispose individuals to synovial herniation. An enlarged cyst may compress the external iliac or femoral vein and lead to lower extremity swelling. If the expansive lesions are intrapelvic, they may compress the adjacent structures, including the ureter, bladder, and colon (4–7).

Radiographic studies are important because the clinical manifestation of synovial cyst and associated hip disease can simulate other conditions, including inguinal or femoral hernia, inflammatory or neoplastic lymph node enlargement, and vascular lesions such as arterial aneurysm, hematoma, neurogenic or other soft tissue tumors (8–10). Plain radiographs of the hip should be carried out to assess the degree of articular damage seen in cases associated with osteoarthritis and rheumatoid arthritis.

Although conventional venography is always used to rule out the possibility of venous thrombosis, recent developments in imaging techniques make the diagnosis easier and less invasive. Ultrasound allows the differentiation of synovial cysts from femoral aneurysm and can be used to aid needle aspiration (11–13). In our case, CT greatly contributed to the diagnosis. It revealed the proximity and possible effect of the mass on the surrounding structures and demonstrated the communication between the bursa and the joint cavity. Magnetic resonance imaging is better than CT for detecting the presence of hip effusion, but is time-consuming and inferior to CT in spatial resolution (14,15).

Different forms of therapy are available for synovial cyst of the hip. Some patients respond to simple cyst aspiration, bed rest, and leg elevation. Surgical procedures should be considered if the need for

repeated aspiration arises because of frequent relapses and the patient wishes to have an operation (16,17).

Despite the high prevalence of hip joint arthrosis, synovial cyst formation seems to be rare at this location. Its clinical manifestations rarely include lower limb swelling resembling that caused by deep vein thrombosis. Our case demonstrated that CT is a good imaging modality for detecting lower limb venous disease because of its powerful capability of simultaneous vascular and extravascular evaluation.

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