

# Venous outflow obstruction 8 years following Ring total hip arthroplasty

## A rare complication of acetabular loosening and polyethylene wear

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Submitted 96-06-21. Accepted 96-09-17

An 81-year-old lady presented with a 3-month history of increasing swelling of her left leg associated with mild pain in the hip and groin. The swelling had progressed to involve the whole leg and was not relieved by elevation. 8 years previously she had undergone an uncemented Ring total hip arthroplasty and had subsequently been asymptomatic.

She had a massive swelling of the lower limb with pitting edema and a firm tender swelling in the left iliac fossa and inguinal region (Figure 1). A presumptive diagnosis of venous outflow obstruction was made and the patient was referred to the vascular surgery department.

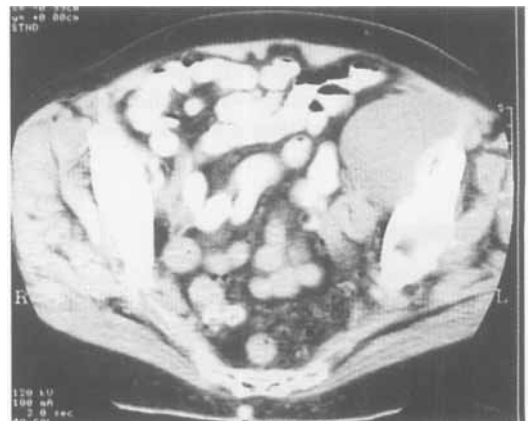


Preoperative swollen left lower limb.

A pelvic radiograph showed no signs of loosening of the prosthesis. A venogram showed no evidence of venous thrombosis and radioisotope lymphangiogram excluded lymphedema. An inguinal lymph node biopsy was unhelpful. CT scan of the pelvis and hip revealed a large cystic lesion adjacent to the hip and extending anteriorly to the left ilium (Figure 2). Aspiration of the cyst revealed straw-colored fluid and cytology demonstrated unremarkable lymphoid cells.

6 months after the onset of symptoms, she was referred to the orthopedic department with a massive swelling of the entire limb which was approximately double the circumference of the normal side. A soft, tender inguinal swelling and a firm iliac fossa mass were noted. Straight leg raising and rotation of the hip were painful. A repeat venogram showed compression of the femoral vein in the groin (Figure 3), causing venous outflow obstruction, but no thrombosis.

A repeat hip radiograph demonstrated loosening of the polyethylene socket associated with osteolysis



Computed tomography scan showing a large cystic mass medial to the ilium and anterior to the hip.



Venogram showing compression of the femoral vein at the level of the hip joint.



Loosening of polyethylene socket and osteolysis of acetabulum.

(Figure 4). At revision surgery, there was extensive granulomatous tissue formation which was excised and approximately 300 mL of straw-colored fluid drained spontaneously. Histological examination of the granulomatous tissue showed fibrosis and numerous foreign body giant cells related to bi-refringent polyethylene particles under polarized light microscopy.

Postoperatively, the swelling started to decrease within 2 weeks. The patient was painfree and the leg edema had entirely resolved at 8 weeks' follow-up.

## Discussion

Anatomic studies have shown that the normal hip joint communicates with the iliopsoas bursa in up to 14% of cases (Chandler 1934). As a part of the inflammatory process around the hip joint, involvement of the iliopsoas bursa may occur, as in this case.

Pseudoabscesses of the psoas bursa have been described by Howie et al. (1991) at revision of Wagner

double-cup hip arthroplasties and attributed to an inflammatory response to polyethylene wear particles. Iliopsoas bursitis after THA has been reported in association with acetabular loosening and polyethylene wear (Matsumoto et al. 1992). In 2 cases of iliopsoas bursitis reported by Kolmert et al. (1984), polyethylene was not described as the initiating factor, although microscopy revealed a foreign body reaction. None of these reports mentioned a vascular complication due to polyethylene wear.

We have found only one other case of late limb swelling after THA (Van Mourik and Josaputra 1988); this was caused by venous obstruction due to femoral vein thrombosis 14 years after a cemented Charnley-Muller total hip replacement. A giant thick-walled synovial cyst and a loose acetabular component were associated with perforation of the acetabular wall.

The complication we report is rare but in the presence of venous obstruction occurring late after THA, the formation of a polyethylene granuloma or an enlargement of the psoas bursa should be considered as a possible cause.

An orthopedic opinion should be sought in all cases of suspected venous outflow obstruction to the lower limb following total hip arthroplasty. Aspiration of the swelling as a definitive treatment does not help, as it tends to reoccur.

### Acknowledgement

The authors are thankful to Dr. Mukta Vadhva for helping to prepare this manuscript.

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