

# An intrapelvic granuloma induced by acetabular cup loosening

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## Case report

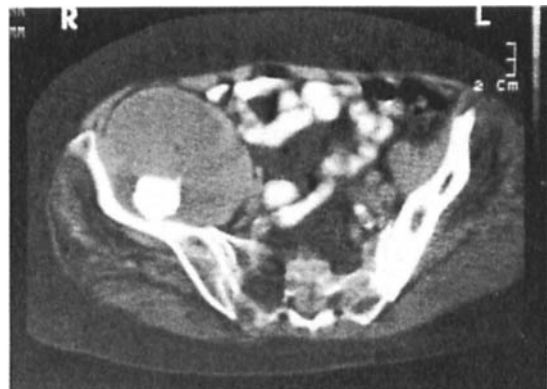
A 78-year-old woman was treated with a Christiansen total hip prosthesis for arthrosis in July 1982. The acetabular component was revised in September 1984 due to mechanical loosening. Very soon the hip was painful again. At admission to our hospital in February 1990, radiographs revealed loosening of the acetabular component and lysis around the femoral component (Figure 1). A 10-cm tumor, fixed to the pelvic wall, could be palpated in the right iliac fossa. Ultrasonography and CT showed a big intrapelvic cystic tumor with bone cement inside. No communication between the joint and the cyst was demonstrated by arthrography. Brown-colored fluid was aspirated from the cyst, and cytology showed macrophages and leucocytes.



The loose acetabular component and femoral bone resorption.

The cyst was approached using an oblique extraperitoneal incision over the right iliac fossa. The femoral nerve was stretched over the cyst and had to be displaced medially together with the iliac vessels. The cyst had a broad adhesion to the iliac bone and had to be emptied of its brown semifluid contents before removal. The intrapelvic cement, which was situated inside the cyst, was removed, but no direct communication with the hip joint was seen. Macrophages, foreign body giant cells, and lymphocyte infiltration were found histologically in the fibrous cystic wall. Bacteriology was negative.

The prosthesis was removed by a direct lateral approach. The acetabulum was reconstructed with autologous cancellous bone grafts and a hydroxyapatite-coated cementless screw-type acetabular component (Landos corail) was inserted. On the femoral side, a cemented component (Landos/Titane) was used. The patient is pain-free and walks without crutches 21 months after the operation. No tumor recurrence has occurred. Radiographs indicate secure fixation of both prosthetic components.



CT shows a cystic tumor in the right iliac fossa and intrapelvic bone cement.

Figure 1. A 78-year-old woman 8 years after Christiansen arthroplasty for arthrosis and 6 years after acetabular revision for loosening.

## Discussion

Wear products of hip joint prostheses induce macrophage and giant cell response (Willert and Semlitsch 1977). The wearing properties of polyacetal (Delrin®), which was used in the Christiansen acetabular component, are inferior to those of UHMW-polyethylene (Clarke and McKellop 1980, Mathiesen et al. 1986), and more inflammation and necrosis are found around polyacetal components than in components made of UHMW-polyethylene (Mathiesen et al. 1987). Transmission electron microscopy has shown abundance of plastic particles in the tissue around a Christiansen prosthesis (Ohlin and Kindblom 1988). Sometimes the foreign body reaction against wear products induces the formation of large granulomas. Adjacent bone represents a barrier against granuloma formation until it is resorbed by osteoclasts (Willert et al. 1990). Our case presents the extreme form of such granulomatous growth and in the literature we have found only one case report on an intraabdominal tumor like that reported here (Hattrup et al. 1988).

## References

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