

LETTERS TO THE EDITOR

External iliac artery pseudoaneurysm following total hip replacement

Sr, director:

Arterial lesions following primary total hip replacement (THR) are infrequent, with an incidence of 0.25%. The external and common iliac arteries are the most usually involved vessels,¹ and pseudoaneurysm is the most common lesion.²

Late vascular lesions are infrequent and usually result from erosion and compression of the walls of the large vessels, and pseudoaneurysm is the most common presentation. Acute vascular lesions manifest themselves in the form of severe hemorrhage, whereas late lesions normally do so as pain secondary to pressure exerted by a false aneurysm, ischemic symptoms due to the obstruction of vascular flow,² hypotension, limb edema, bleeding stulae and even sciatic nerve palsy.³

Pseudoaneurysm usually presents as a painful pulsatile mass accompanied by anemia, weeks or even months after surgery. It is caused by a laceration of the vascular wall of one of the larger arteries and tends to occur following revision surgery and, sometimes, accompanied by infection.¹ Commonly, the agent causing the lesion is a spur of cement from the acetabular component that erodes the vascular wall.^{1,3} Intrapelvic lesions secondary to prosthetic loosening are infrequent since the protective role played by the iliopsoas muscle on the vascular structures is related to the fibrous reaction that surrounds the acetabular component in its slow intrapelvic migration. Both factors explain the low incidence of vascular lesions in cases of intrapelvic protrusion.

We hereby report the case of a 78-year-old woman with a 2-year history of arthritis in her right hip. Radiographically, she presented with advanced hip arthritis with subtotal resorption of the right femoral head and elevation of the femoral neck to the supraacetabular region. An uncemented total hip replacement was implanted on her right side by means of a Hardinge anterolateral approach. Intraoperatively, a significant bone defect was found in the anterior acetabular wall. In the postoperative x-ray examination it was determined that the acetabular cup had been implanted to an incorrect position. Sitting was allowed at the 5th day post-op. As a precautionary measure, weightbearing was not allowed, although we at no time thought that the

implant was not firmly seated. At one month's follow-up, we observed elevation and migration of the acetabular component. The patient had borne weight, in spite of the indications to the contrary. At 2 months, the patient presented with sudden pain in the right hip and leg related with coldness and severe functional impairment. Examination revealed the absence of Peripherals pulses in that leg, and a diagnosis of acute ischemic syndrome secondary to right iliofemoral artery obliteration was established. As a result, an emergency transfemoral embolectomy was performed, which helped recover peripheral artery circulation in that area. One month later, the patient was readmitted into hospital since she was once again experiencing pain and functional impairment without associated acute ischemia. An arteriogram was carried out prior to revision surgery that showed a dissection of the common femoral artery with a concomitant pseudoaneurysm in the external iliac artery (Fig. 1). During the first surgical stage, a combination of vascular and trauma surgery, the intrapelvic cup was explanted by means of a retroperitoneal approach; the pseudoaneurysm was controlled by dissection and termino-terminal anastomosis. Intraoperatively, failure of the anastomosis was detected. In addition, peripheral pulses were not palpable, there was a lack of capillary filling and distal temperature was too low, so it was decided



Figure 1 External iliac artery pseudoaneurysm with intrapelvic cup loosening.

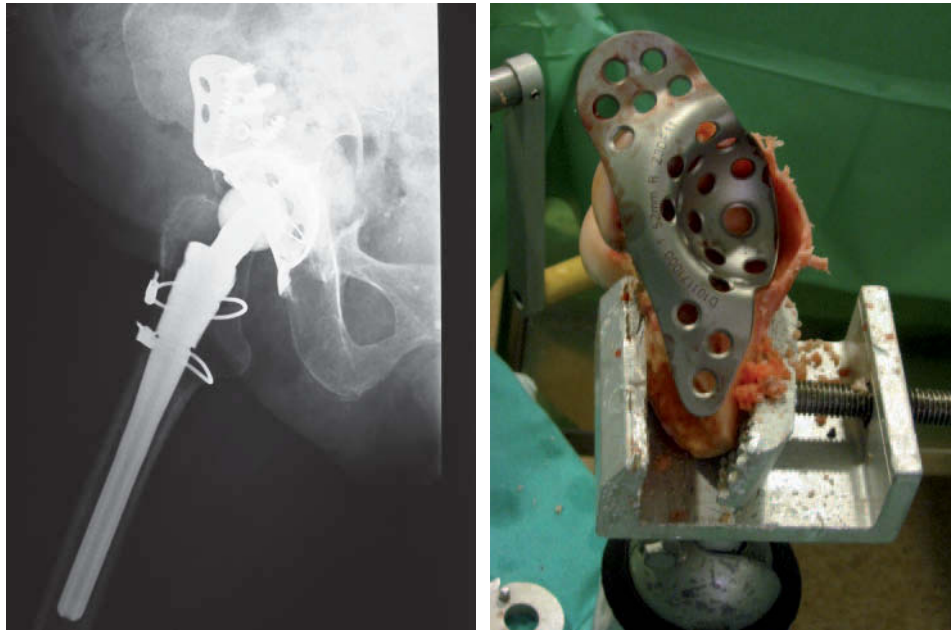


Figure 2 Paprosky reconstruction ring used as an adjunct to revision hip replacement with cemented cup and modular stem.

to perform a thrombecto-endarterectomy of the external iliac artery with a bypass from the external iliac artery to the deep femoral artery with a Dacron vascular graft. At 8 hours, the patient had a feeling of coldness in the limb, absence of pulses and more intense pain, so an emergency superficial femoral artery thrombectomy and a femoro-femoral bypass were performed. Postoperative evolution was satisfactory, with normal peripheral pulses and recovery of limb temperature. One month later, once the vascular problem had been addressed, the femoral stem was explanted and the acetabulum cleansed by means of a Hardinge anterolateral approach. Significant structural bone loss was detected in the acetabulum, with complete loss of the acetabular floor and the posterior and anterior walls (Paprosky type IIIB defect).⁴ A new acetabulum was created using a full strut graft derived from femoral condyle allograft, which was impacted onto the acetabular region to remedy the lack of bone stock. A Paprosky reconstruction ring was implanted as well as a cemented cup and a modular stem (Fig. 2). Postoperative evolution was satisfactory and uneventful. At one month from surgery, ambulation was allowed with two sticks. The patient showed a satisfactory health status, with the results of her x-ray exams within normal ranges. At 4 months the patency of the femoro-femoral bypass was checked, and the patient did not show

signs of claudication on ambulation and peripheral pulses were palpable. She is currently doing well and walks with one single stick.

References

1. Ratliff AH. Arterial injuries after total hip replacement. *J Bone Joint Surg Br.* 1985;67:517-8.
2. Bach CM, Steingruber IE, Ogon M, Maurer H, Nogler M, Wimmer C. Intrapelvic complications after total hip arthroplasty failure. *Am J Surg.* 2002;183:75-9.
3. Giacchetto J, Gallagher JJ. False aneurysm of the common femoral artery secondary to migration of a threaded acetabular component. A case report and review of the literature. *Clin Orthop Relat Res.* 1988;:91-6.
4. Paprosky WG, Perona PC, Lawrence JW. Acetabular defect classification and surgical reconstruction in revision arthroplasty: a 6 year follow up evaluation. *J Arthroplasty.* 1994;9:33-44.

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