CASE REPORT

Arterial Injury During Removal of a Migrated Acetabular Component

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Introduction

Vascular trauma after hip surgery has been described mostly after elective total hip arthroplasty, but there have also been a number of cases after hip fracture surgery. Re-operation increases this risk in elective total hip arthroplasty.¹

Arterial injury complicating hip replacements are rare² and usually occur at the time of operation. Delayed arterial injury may result from a false aneurysm produced when the acetabular floor has been broached by operative instrumentation. Arterial injury can also be caused by the migration of cement or prosthesis into the pelvic cavity.

The treatment options for arterial injury include primary repair, a by-pass graft for short segments, or ligation in combination with an extra-anatomic by-pass graft.³ ⁴ Resection of damaged artery and primary end-to-end anastomosis is not usually possible. We report a case where elongation of the artery by migrating acetabular component made such a repair possible.

Case Report

A 79-year-old woman underwent revision and exchange arthroplasty for staphylococcal infection of a total hip replacement in October 1990. There was osteolysis of the acetabulum, and acetabular reconstruction was performed using autogenous bone graft, a strengthening ring and a cemented Charnley prosthesis (using Gentamycin impregnated cement).

She returned 4 months later with recurrence of the infection. Further surgical debridement failed to control this and there was continuing acetabular destruction with proximal migration of the prosthesis into the pelvis (Figs 1 and 2). She was admitted for skeletal traction with a view to removing the prosthesis. During admission, she developed a bloody discharge from the hip wound associated with pyrexia and diarrhoea. There was no evidence of a pelvic abscess or false aneurysm on CT scan.

Surgery was planned with a vascular surgeon in attendance. Pus was found deep to vastus lateralis, and the acetabular cup was lying deep within the true pelvis. Through a hypogastric incision the pelvic vessels were identified and controlled. The cup was adherent to the external iliac artery with the artery stretched over the protruding acetabular cup (Fig. 2). Manipulation of the prosthesis led to pronounced bleeding from a linear tear in the posterior wall of the

Fig. 1. Anterior posterior view of the pelvis showing the protrusion of the acetabular component into the pelvis.
external iliac artery. The prosthesis was removed and a repair of the tear performed. The patient was left with an excision arthroplasty.

The patient developed marked hypovolaemia postoperatively. Emergency laparotomy confirmed a disruption of the vascular repair. The vessel could not be ligated because there was insufficient collateral circulation to the leg, and an extra-anatomic by-pass was contra-indicated in the presence of severe infection. A redundant length of external iliac artery was observed in the space initially occupied by the acetabular cup having been lengthened by it. (Fig. 2). As such it was possible to resect 3 cm of the artery and perform an end-to-end anastomosis.

The patient made good progress postoperatively with satisfactory wound healing, adequate distal circulation in the limb and palpable distal pulses. A pelvic ultrasound scan showed normal size external iliac with good flow. The patient went home mobilising with a frame and a built-up shoe.

**Discussion**

This case illustrates a case of infection after a total hip replacement resulting in external iliac artery injury during re-operation. Due to postoperative bleeding after repair of the iliac artery it had to be resected. Since the artery was elongated it could be anastomosed end to end, following resection of the damaged part of the artery.

Similar cases are unusual but are described several times in the literature. In this case the problem could be solved by performing a direct anastomosis and there was no need for artery ligation or replacement. Since the anastomosis was performed in infected tissue, the risk of dehiscence of the anastomosis was still present. The migrated cup of the prosthesis served as a “tissue expander” resulting in elongation of the artery and making an end to end anastomosis possible.

**Acknowledgement**

The authors would like to thank Miss C Fenby for preparing the manuscript.

**References**


*Accepted 23 August 1993*