

Giant Pseudoaneurysm After Girdlestone's Excision Arthroplasty

D Bowley, M Brinsden, M Halawa, D Wilkins

Citation

D Bowley, M Brinsden, M Halawa, D Wilkins. *Giant Pseudoaneurysm After Girdlestone's Excision Arthroplasty*. The Internet Journal of Orthopedic Surgery. 2002 Volume 1 Number 2.

Abstract

Vascular injury is rare after hip arthroplasty. We report the occurrence of a giant pseudoaneurysm of the profunda femoris artery after excision arthroplasty of the hip. A high index of suspicion must be maintained to detect vascular injury if the limb is to be salvaged.

There was no external support, financial or otherwise for this article.

and was symptomatic. CT scan confirmed an aneurysm occupying the right proximal thigh; the maximum diameter of the aneurysm was 19 cm (figure 3).

INTRODUCTION

Vascular injury is rare after hip arthroplasty. A high index of suspicion must be maintained to detect these complications if the limb is to be salvaged.

CASE REPORT

An obese, eighty-two year old woman with rheumatoid arthritis underwent a right total hip arthroplasty. She suffered a peri-prosthetic fracture (figure 1); reconstruction was not entertained due to poor local bone stock and concomitant medical disease. Excision arthroplasty was undertaken. Her wounds healed uneventfully; however, in the postoperative period both legs became increasingly swollen. The right leg was painful and significantly more swollen than the left. There were no physical signs that suggested a major vascular injury, specifically there was no distal vascular compromise and examination of a very obese thigh was non-contributory.

Proximal venous thrombosis was suspected; however, non-invasive vascular imaging revealed a pseudoaneurysm of the profunda femoris artery. Endovascular occlusion of the aneurysm was attempted and the interventional radiologist was confident that occlusion of the inflow had been achieved (figure 2). The patient was discharged to a rehabilitation facility, in a wheelchair and consuming 60mg of slow-release morphine tablets twice daily. At review, it was apparent that the aneurysm was slowly continuing to expand

Figure 1

Figure 1. Right hip, prior to the Girdlestone's procedure; note the periprosthetic fracture.



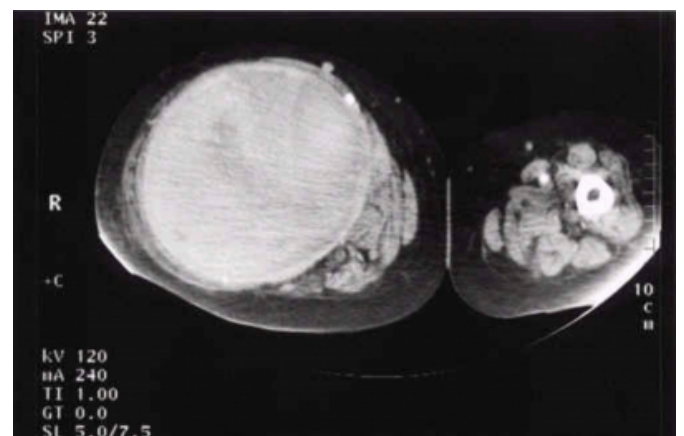
Figure 2

Figure 2. Angiogram demonstrating attempted endovascular occlusion of the pseudoaneurysm of the profunda femoris artery.



Figure 3

Figure 3: CT scan demonstrating a giant pseudoaneurysm of the right profunda femoris artery.



A disarticulation of the right hip was undertaken six months

after the excision arthroplasty. Although the patient made a good recovery she was unable to ambulate and was discharged to a nursing home, dependant on full-time carers.

DISCUSSION

Excision arthroplasty (Girdlestone's procedure) is a widely used salvage procedure for complications following hip surgery. It enables control of infection in approximately 90% of patients and achieves satisfactory relief of pain in the majority of patients.^{1, 2} In addition, the improvement in hip function after revision total hip arthroplasty has been described as only marginal compared to a good pseudarthrosis.² Excision arthroplasty may avoid multiple revision procedures and remains a valid option in selected patients.

Vascular complications are rare following hip arthroplasty, with a reported incidence of 0.2% to 0.3%;³ revision arthroplasty increases the risks of vascular trauma.⁴ Intraoperative haemorrhage is the commonest presenting feature of major vascular injury during hip arthroplasty.⁴ Direct injury may be caused by osteotomes or powered reamers or malpositioning of retractors at the anterior margin of the hip joint. Cement may also cause vascular injury as a consequence of the exothermic reaction of polymerisation.⁵ Distal ischaemia may occur secondary to intimal injury, or thromboembolism of atherosclerotic vessels traumatised during manipulation of the hip joint.^{3, 4}

Occult vascular injury may present later as a pseudoaneurysm; the delay from the index procedure to presentation may be as long as fourteen years.⁵ Injury to the vessel wall is thought to be a result of erosion of bone or cement spicules or repeated trauma from a projecting screw or migration of the components of fixation.^{6, 7}

Pseudoaneurysm of the external iliac artery has also been reported as resulting from peri-prosthetic sepsis after hip arthroplasty.⁸

If a pseudo aneurysm is identified at an early stage endovascular occlusion or surgical reconstruction affords limb salvage in the majority of cases.^{3, 5, 7} However, delay in diagnosis often leads to debilitating ablative surgery, as in this case.

CORRESPONDENCE TO

Doug Bowley, 20 Heddon Court, Cockfoster's Road, Barnet, EN4 0DE, United Kingdom. Telephone & fax: 0208 440 3144. Email: dbowley@hotmail.com

References

1. Castellanos J, Flores X, Llusa M, Chiriboga C, Navarro A. The Girdlestone pseudoarthrosis in the treatment of infected hip replacements. *Int Orthop* 1998;22:178-81.
2. Schroder J, Saris D, Besselaar PP, Marti RK. Comparison of the results of the Girdlestone pseudoarthrosis with re-implantation of a total hip replacement. *Int Orthop* 1998;22:215-8.
3. Nachbur B, Meyer RP, Verkkala K, Zurcher R. The mechanisms of severe arterial injury in surgery of the hip joint. *Clin Orthop* 1979;141:122-33.
4. Stuchin SA, Pearl R, Haveson S. The management of vascular injuries associated with total hip arthroplasty. *J Vasc Surg* 1990;11:549-55.
5. Sethuraman V, Hozack WJ, Sharkey PF, Rothman RH. Pseudoaneurysm of femoral artery after revision total hip arthroplasty with a constrained cup. *J Arthroplasty* 2000;15:531-4.
6. Bach CM, Steingruber I, Wimmer C, Ogon M, Frischhut B. False aneurysm 14 years after total hip arthroplasty. *J Arthroplasty* 2000;15:535-8.
7. Nozawa M, Irimoto M, Maezawa K, Hirose T, Shitoto K, Kurosawa H. False aneurysm of the profunda femoris artery after total hip arthroplasty. *J Arthroplasty* 2000;15:671-4.
8. Hopkins NFG, Vanhegan JAD, Jamieson CW. Iliac artery aneurysm after total hip arthroplasty. Surgical management. *J Bone Joint Surg [Br]* 1983;65:359-61.

Author Information

DM Bowley, FRCS

Derriford Hospital and Postgraduate Medical School, University of Plymouth

MD Brinsden, MRCS

Derriford Hospital and Postgraduate Medical School, University of Plymouth

M Halawa, MCh (Orth) FRCS Ed (Orth)

Derriford Hospital and Postgraduate Medical School, University of Plymouth

DC Wilkins, MS FRCS

Derriford Hospital and Postgraduate Medical School, University of Plymouth