SHORT REPORT

Infection of Aortic Endoluminal Graft Following Internal Iliac Embolisation

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Introduction

Graft infection is recognised as a late and rare complication of endovascular abdominal aortic aneurysm repair (EVAR). We describe an early graft infection in a man who had an internal iliac artery embolisation prior to his EVAR.

Case Report

A 74-year-old gentleman presented for elective endoluminal repair of a 7 cm infrarenal aortic aneurysm and right common iliac aneurysm. Preoperative comorbidity included bilateral claudication, ischaemic heart disease, chronic obstructive airways disease and recent pulmonary embolism for which he was warfarinised.

Pre-operatively he had the right internal iliac artery embolised with 14 Cook coils to prevent an endoleak as the right graft limb was to be to the external iliac. He had right hip and thigh claudication following this. A week later he had an EVAR using a Trifab Zenith graft (Cook). Both procedures were performed in a new angiology suite with sterile fields but prophylactic Cephazolin was used only for the EVAR. During the post-operative period after the EVAR he developed bilateral groin pain, a mildly increased temperature and rapid AF with reversion to sinus rhythm within 24 h on amiodarone. At 48 h his temperature remained elevated, and an abdominal CT scan showed some perigraft air which is often seen post EVAR. Antibiotics (IV metronidazole, amoxycilin and gentamicin) were commenced and continued until blood cultures were shown to be negative. Five days post-operatively he was afebrile. He was assumed to have had a graft related fever, and went home without antibiotics.

Ten weeks after EVAR he presented for the third time with back, bilateral buttock and groin pain for which previous CT scans and blood cultures had been normal. On admission he had elevated platelets (631 $\times 10^9$/L ($N = 150–400$)) and CRP (261 mg/L ($N = 0–8$)) but a normal white cell count and a normal abdominal CT. Over the next 4 days he continued to have pain and spiking pyrexia. Clinically he was thought to have a graft infection and a Tc99m labeled white cell scan showed increased uptake in the abdominal aortic area (Fig. 1). A CT guided fine needle aspiration of the thrombus surrounding the endograft yielded Staphylococcus sp. He was started on vancomycin and prepared for surgical removal of the infected endoluminal graft. On opening the aneurysm pus was found coming mainly from the right common iliac artery in the area of the embolisation. The infected aneurysm sac and graft were excised and an aorto-bi-iliac silver-coated polyester graft soaked in rifampicin and wrapped in omentum was placed. The pus grew Staphylococcus aureus. He made a good recovery and was discharged home 10 days later. He was continued on oral rifampicin and oral cefuroxime for a further 6 months. At follow-up over the next 2 years he had no evidence of further graft infection.

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Graft infection is fortunately a rare complication of EVAR occurring in five of 1140 patients (0.44%) in studies which reported infected grafts.1–4 Other studies mention no infections, which may make this rate even lower. The reported patient suffered ischaemic symptoms following embolisation and ischaemia may have been a significant factor in infection through protection from the normal blood borne antibacterial mechanisms. Reported infection rates for stents where there is no ischaemia is as low as one in 10,000 in a series from the USA.5 In this case it appeared to be related to Staphylococcus acquired at a prior iliac embolisation. A recent case report suggests EVAR graft infection can occur from post-operative embolisation.6 It is recommended that a strict sterile technique and prophylactic antibiotics be used for pre-operative embolisations as well as for the EVAR itself. This would include iliac, lumbar or inferior mesenteric artery embolisation. As mentioned above, uncovered stent infections are rare and fewer precautions may be needed.

Once the horrendous diagnosis of EVAR infection is established there is controversy over what constitutes best management. In this case in situ replacement with a rifampicin bonded, omental wrapped graft was used as is standard practice in our institution and others7 for infected abdominal aortic grafts. The silver coated graft was used on this occasion as it was on trial but it is not normally stocked. Alternative approaches are to use autogenous femoral vein8 or a homologous aortic graft9 or the more conventional procedure of an axillo-bifemoral graft followed by excision of the aneurysm and closure of the stump.10 It seems clear that the graft should be removed and the aneurysm dealt with but the choice of exact technique may depend on local experience.

References


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