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Treatment of Major Aortic Graft Infection: Preliminary Experience with Total Graft Excision and *In Situ* Replacement with a Rifampicin Bonded Prosthesis

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Introduction

The most feared complication after aortic reconstruction is infection, principally because the ensuing death and/or amputation rate may exceed 70%.[1] Its relative rarity (1–2%)[1,2] has contributed towards problems in determining the optimal mode of management because thousands of patients would be required in prospective trials to prove the effectiveness of one treatment regime over another. Accordingly, the literature contains genuine claims and counter-claims on the respective merits of antibiotic irrigation, total graft excision, extra-anatomical bypass, autologous reconstruction, *in situ* prosthetic revascularisation or retroperitoneal in-line prosthetic bypass.[3–7]

Until recently, it had been our policy to excise infected aortic prostheses and undertake synchronous extra-anatomic bypass. However we were then faced with a patient with an infected aortic graft, massive retroperitoneal abscess formation and poor peripheral perfusion in whom flexion deformities at the hips precluded extra-anatomical bypass. We therefore undertook to manage this patient by graft excision and *in situ* replacement with a rifampicin bonded prosthesis as had been recently advocated by Strachan.[8] Impressed with the outcome, we have since dealt with four further patients in a similar manner.

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Clinical Materials

Patients were commenced on parenteral antibiotics (cefuroxime and metronidazole) once the diagnosis of graft infection was suspected and each received a further bolus with induction of anaesthesia. Preoperative CT scans and angiograms were performed routinely unless clinical urgency precluded them. At the time of undertaking this study, there were no MRI facilities at this hospital. At operation, the aorto-iliac segments were mobilised and any macroscopically infected tissue debrided. The original graft was then excised and replaced with a rifampicin-bonded prosthesis in the manner described by Strachan.[8] In summary, a 20ml ampoule containing 600mg of rifampicin (Merrell Dow) was reconstituted with 10ml of solvent provided. The resultant solution was added to a kidney dish into which was placed a pre-prepared and sized gelatin impregnated, knitted Dacron graft (Gelsoft, Vascutek Ltd, UK) and lavaged for ten minutes in order to ensure complete bonding of the antibiotic to the gelatin coating. The prosthesis was then anastomosed in the standard manner and covered with an omental pedicle where possible. Postoperatively, all patients were continued on parenteral and then oral antibiotics (usually cefuroxime or ciprofloxacillin and metronidazole) for 6 weeks. The exact choice depended on micro-organism sensitivities and patient allergies. The decision to stop antibiotic therapy at 6 weeks was based on pre-existing unit policy when all patients had been reviewed and there was no clinical evidence of residual infection. In addition, each patient underwent a III Indium labelled

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