

SILVER COATED GRAFTS FOR EXTRA-ANATOMIC AXILLO-BIFEMORAL BYPASS OF AN INFECTED AORTIC GRAFT

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Case Report

A 58-year old man was admitted with abdominal pain over the last two weeks, weight loss of 8 to 10 kg and anorexia. On examination a large abdominal aortic aneurysm (AAA) was found. However, the clinical history raised the possibility of an inflammatory aneurysm with gastrointestinal involvement or an unrelated gastrointestinal problem. A CT was performed which showed a 9-cm aneurysm with a contained posterior leak, possibility not of recent origin.

The patient was prepared for urgent surgery the same day on the 07/11/2000. At laparotomy a large non ruptured AAA was found. An obstructing caecal tumour was present with marked small intestinal and gastric distention. As there was no evidence of AAA rupture and the bowel was obviously obstructed a right hemicolectomy was performed. There was no metastatic disease seen. The histology confirmed a Dukes C1 malignancy.

Postoperatively the patient made a good recovery. It was decided to defer the AAA surgery to allow nutritional improvement and to lessen the risk of graft infection.

Six weeks post resection on the 15/12/2000, the patient underwent an elective AAA repair with a collagen impregnated knitted polyester graft. The patient received antibiotic cover with gentamicin (single dose), cefuroxime and metronidazole (two days). There was no intra-abdominal sepsis or malignant disease in evidence. The patient again made a good recovery and was discharged home. Four weeks post-surgery the patient presented with nausea, anorexia and weight loss. A CT was performed (figure 1) which showed gas in the clot surrounding the new graft. A CT guided aspiration of this area grew coagulase negative staphylococcal aureus of unknown significance. A central line was

inserted and the patient commenced on cefuroxime and vancomycin. Enteral feeding was commenced. Twelve days after admission the patient had improved considerably. A plan was formulated to implant an axillo-bifemoral graft followed by explantation of the infected aortic graft. It has been a practice recently to place silver impregnated grafts in infected or potentially infected sites. However, a silver coated axillo-bifemoral graft was not yet available. Straight 8 mm silver coated grafts were obtained from the manufacturer (InterGard™ Silver, InterVascular, La Ciotat - France).

On the 24/01/2001, the patient was taken to the operating theatre and right axillary artery and both femoral arteries were exposed. An anastomosis was performed between two lengths of silver coated graft to fashion an axillo-bifemoral graft similar in configuration, to those commonly in use. Antibiotic cover was vancomycin, cefuroxime and gentamicin. The graft was placed in the conventional way. Two days later, on the 26/01/2001, the patient was returned to theatre and a laparotomy performed. The old sac was reopened and the native aorta just below the renal arteries controlled. Both common iliac arteries were controlled. The aortic graft was explanted and the ends of the aorta and iliac orificies oversewn.

Amazingly the patient again made a good recovery. Metronizadole was continued for two weeks and cefuroxime and vancomycin for four weeks through the tunnelled central line. Followed by two months of ciprofloxacin and rifampicin. At six months post-surgery there has been no evidence of graft or wound sepsis.



Figure 1 - 4-week post-surgery CT showing gas in the clot surrounding the graft.

Comment

This patient presented a major treatment dilemma between his dual abdominal pathologies. The gastrointestinal cancer was thought to be the most acute problem and was treated in a standard way. Aortic surgery following laparotomy for bowel surgery is known to carry a considerable risk for sepsis. The surgery was performed uneventfully under heavy antibiotic cover. However, a silver coated or rifampicin bonded graft was not used. Rescue surgery to explant an infected graft has high mortality. The options were *in-situ* replacement of the infected graft with a

new silver graft or extra-anatomic bypass and graft explantation. In the light of the previous rapid early sepsis the second option was felt to carry the better prognosis. A silver coated axillo-bifemoral graft was not yet available from the manufacturer. However, they were able to supply straight 8-mm silver coated grafts and an axillo-bifemoral graft was fashioned easily. That this patient survived was a considerable triumph. Perhaps use of an antimicrobial aortic graft might have prevented the aortic infection. However, the use of a silver coated axillo-bifemoral graft was felt to have contributed to the complex strategy to prevent a further occurrence of graft sepsis.