CASE REPORT

Use of a Pedicled Omental Flap in the Treatment of an Infected Vascular Prosthetic Graft

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Introduction

Omentum has been used for a variety of reconstructive purposes in different surgical disciplines. In vascular surgery it has been used to revascularise the myocardium, to protect the carotid artery after radical neck dissection and irradiation, and to cover abdominal aortic grafts and prostheses following radical inguinal excisions.

The case presented here is, to our knowledge, the first report in literature of the use of a pedicled omental flap in the protection and treatment of an exposed infected vascular prosthetic graft.

Case Report

A 48-year-old man presented with bilateral claudication and rest pain in the left foot. Ten years earlier a left-iliofemoral endarterectomy had been performed. He had a history of insulin dependent diabetes, hypercholesterolaemia, hypertension, obesity and heavy smoking.

Angiography showed significant stenoses at the bifurcation of the left common iliac artery and the left common femoral artery. On both sides the superficial femoral arteries were occluded with popliteal arteries filling by collateral circulation. At exploration, the left iliac artery was approached retroperitoneally through a left pararectal incision, but due to scarring from the previous surgery, further dissection was deemed too risky. Therefore a femorofemoral bypass with an 8 mm Dacron prosthesis was constructed.

One week postoperatively there was a wound dehiscence in the left groin, leaving the bypass exposed over a length of 2 cm. Intravenous antibiotic therapy with imipenem and local therapy with povidone-iodine could not prevent infection with an oxacillin sensitive Staphylococcus aureus. It was decided to close the defect with a pedicled omental flap. Laparotomy was performed through the earlier left pararectal incision. By partial division of the omental apron, an omental strip vascularised by the middle and left omental arteries was fashioned and pulled down behind the inguinal ligament to the groin, filling the defect. It was fixed superficially with separate resorbable sutures. Healthy granulation tissue soon covered the flap and cultures became negative. Finally a split thickness meshed skin graft was used to cover the flap. Recovery was uneventful and after a 1.5 year follow-up the graft remains patent with no evidence of infection.

Discussion

The pedicled omental flap is richly vascularised and highly immunoreactive, making it a good choice for implantation in an infected region. Its qualities in protecting vessels and vascular grafts are proven and it offers an excellent surface for skin grafting.

With careful surgical technique, the rich omental blood supply allows great mobilisation. The omental...
blood supply derives mainly from the right and left
gastroepiploic arteries, joining to form the gastro-
epiploic arterial arch, which gives rise to the right,
middle and left omental arteries. These vessels bifur-
cate, giving rise to right and left arterial arcades in
several anatomic variations. For intraabdominal use,
the omentum is usually of sufficient length. Partial
division of the omental apron will provide further
lengthening. For extensive lengthening, the omentum
is removed from the transverse colon and the greater
curvature of the stomach, with preservation of the
gastroepiploic arch. An omental pedicle on one of the
gastroepiploic arteries can then be created and further
lengthening is possible according to vascular arcade
formation in the omental apron.

In our view, the omental flap can certainly be added
to the therapeutic techniques for treating infected or
exposed vascular grafts. The use of this technique in
the serious complication described in this case report,
was highly successful, resulting in rapid wound
healing and saving the vascular graft.

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