SHORT REPORT

Endoleak Three Years After Conventional Open Abdominal Aortic Aneurysm Repair

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Introduction

Endovascular repair of Abdominal Aortic Aneurysms (EVAR) may eliminate much of the early cardiovascular and pulmonary risk associated with open repair, but the long-term efficacy of this technique is debatable.

In up to 44% of cases it may be complicated by an endoleak – leakage of blood outside the endoluminally placed graft, but contained within the aneurysm sac. Conversely, open repair may be associated with early cardiac and respiratory complications in almost 20% of cases, but latent inappropriate reperfusion of the aneurysm sac had until recently, never been documented. However in 2000 Chan et al. described six patients who developed such leaks, and suggested that endoleak be considered a complication of open repair in patients presenting as late as 18 months. We report a case in which a leak was detected 3 years after conventional open abdominal aortic aneurysm (AAA) repair.

Case Report

A 70-year-old female presented with epigastric pain and tenderness. Thirty-five months previously she had undergone an emergency open repair of a ruptured infrarenal AAA, using a 20 mm diameter straight dacron graft. On examination she was cardiovascularly stable, and had epigastric tenderness but no palpable mass. An ultrasound scan showed an 8-cm diameter hypoechoic region in the upper abdomen (Fig. 1). An urgent contrast-enhanced CT scan revealed an 8.5 cm diameter sac lying to the left side of the upper abdominal aorta, and communicating with it (Fig. 2).

The patient remained cardiovascularly stable, but in view of the size of the aneurysm it was decided to explore the graft by open operation.

At laparotomy there was an expansile vascular swelling which had the appearance of a primary infrarenal AAA; the original graft was not visible. After control of the iliac arteries a supra-coeliac clamp was applied. On opening the sac a jet of blood was seen emanating from the left side of the proximal end of the abdominal aorta. Further exploration revealed a small gap in the proximal anastomosis; bleeding had occurred from here and had filled the old aneurysm sac. The defect was oversewn and the sac closed. The patient made an uneventful recovery.

Discussion

This case lends credence to Chan et al.’s suggestions that technical factors such as loose sutures may lead to the development of endoleak following open AAA repair, and that contrast-enhanced CT is an appropriate diagnostic tool for large leaks. Moreover, we propose that it is important to consider endoleak as a possible complication of open AAA repair as late as 3 years
Fig. 1. Ultrasound scan of the upper abdomen showing a hypoechoic area, 8 cm in maximum diameter.

Fig. 2. CT scan demonstrating leakage of contrast from the abdominal aorta into an 8.5 cm diameter aneurysm sac (arrow).
post-surgery, and that indications for surgical intervention should be based on extrapolation from conventional teaching on primary AAAs. Thus the presence of abdominal or back pain together with radiographic evidence of an endoleak producing an aneurysm greater than 5.5 cm diameter should prompt urgent surgical repair, thereby avoiding rupture with its attendant operative mortality of 50%.

The incidence of symptomatic endoleaks following open repair is manifestly low but the overall prevalence is unknown – as many as 50% of endoleaks following EVAR seal spontaneously and it is not unreasonable to assume that the same phenomenon occurs following open repair. Furthermore as the reported incidence of primary AAA continues to rise and with heightened clinical suspicion of endoleaks following open repair, this complication may assume more clinical significance. Thus there is perhaps a case for prospective long-term follow-up after open AAA repair, with regular measurement of aneurysm diameter and/or radiographic detection of endoleak.

References