CASE REPORT

Endovascular repair of abdominal aortic para-anastomotic pseudoaneurysm

Correção endovascular do pseudoaneurisma para-anastomótico de aorta abdominal

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Abstract

Para-anastomotic aneurysms are either true aneurysms or pseudoaneurysms. The latter tend to be asymptomatic until rupture. Para-anastomotic aneurysms should be approached surgically, despite the high morbidity and mortality associated with their treatment. This report describes the case of a 68-year-old woman who presented with a para-anastomotic pseudoaneurysm secondary to infrarenal aortic aneurysmectomy. We chose to use an endovascular approach, and results were good. Endovascular techniques are increasingly becoming the method of choice in the treatment of anastomotic pseudoaneurysms.

Keywords: pseudoaneurysm; aorta; postoperative complications; aortic aneurysm; endovascular procedures.

Resumo

Os aneurismas para-anastomóticos de aorta podem ser verdadeiros ou pseudoaneurismas. Estes últimos tendem a ser assintomáticos até a ruptura. Devem ser tratados cirurgicamente, apesar da alta morbimortalidade em sua abordagem. Este relato descreve o caso de uma paciente do sexo feminino, 68 anos, com quadro de pseudoaneurisma para-anastomótico pós-aneurismectomia de aorta infrarrenal. Optou-se por correção endovascular, com bons resultados. As técnicas endovasculares vêm se estabelecendo como o método de escolha no tratamento dos pseudoaneurismas anastomóticos.

Palavras-chave: pseudoaneurisma; aorta; complicações pós-operatórias; aneurisma aórtico; procedimentos endovasculares.

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INTRODUCTION

Para-anastomotic aneurysms may be either true aneurysms or pseudoaneurysms. Its incidence reaches 10% eight to nine years after aneurysmectomy. Pseudoaneurysms tend to be asymptomatic until rupture. They may occur at any time after operation, but its incidence increases with follow-up time. They should be treated surgically even when asymptomatic, because mortality reaches 61% in the case of conservative treatment. However, open reoperation is technically difficult, and its morbidity and mortality rates are high.

CASE REPORT

This study describes the case of a 68-year-old woman with hypertension and depression under control, who denied smoking or diabetes. Previous surgeries: appendectomy, perineoplasty, cystopexy, hysterectomy, varicectomy, knee arthroplasty and surgical repair of abdominal aorta aneurysm. Eight years earlier she had undergone infrarenal aortic aneurysmectomy and aortoaortic bypass using a 14-mm Dacron graft. Immediate postoperative recovery was good.

A year and a half after the procedure, a CT angiogram (angio-CT) showed no evidence of abnormalities (Figure 1), and an arterial duplex scan of the lower limbs to investigate popliteal artery aneurysm did not show any changes.

Four years after operation, angio-CT showed Dacron graft dilatation (25 mm diameter), without pseudoaneurysm or leaking. Changes remained stable in the sixth year, and the patient remained asymptomatic.

Eight years after operation she had sporadic abdominal cramps. Ultrasound (US) scanning revealed the presence of biliary sludge, and angio-CT showed a distal thrombosed para-anastomotic pseudoaneurysm measuring 6.0 × 5.0 cm (Figures 2 and 3). An endovascular approach under general anesthesia was selected, and the procedure consisted of dissection of femoral arteries bilaterally, implant of bifurcated steel and Dacron graft (body of graft measuring 26 mm × 82 mm) and extending to the distal third of the common iliac arteries, with a diameter of 12 mm (Figure 4). Postoperative progression was good and she was discharged on the second day after operation. She remains under outpatient follow-up, with no complaints and asymptomatic three years after operation.

DISCUSSION

Of all the complications of aortoiliac bypass grafts, anastomotic pseudoaneurysm is the most common

Figure 1. Angio-CT: Dacron graft and infrarenal aortic bypass anastomosis without pseudoaneurysm; see infrarenal neck.

Figure 2. Angio-CT: sagittal view shows 65-mm thrombosed pseudoaneurysm in distal anastomosis.

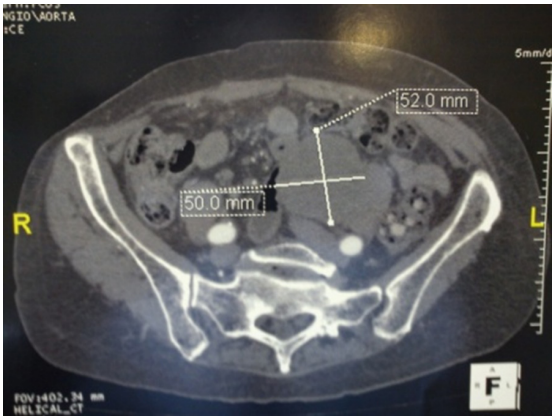

Figure 3. Angio-CT: axial view shows 52-mm pseudoaneurysm in distal anastomosis.

Figure 4. Angio-CT after endovascular repair.

late complication. The following complications may be listed: pseudoaneurysm (3%), thrombosis (2%), enteric erosion/fistula (1.6%), graft infection (1.3%), anastomotic hemorrhage (1.3%), colon ischemia (0.7%) and atheroembolism (0.3%)[1]. They occur at a mean 10 to 12 years after operation, affect the distal anastomosis primarily[2], and are asymptomatic until rupture, with a tragic outcome for the patient and the medical team.

The continuous degeneration of the artery wall after graft implantation may weaken the suture between the artery and the prosthesis along the years, which may give origin to the pseudoaneurysm.

Szilagyi reported the occurrence of anastomotic aneurysms in 0.2% of the aortic anastomosis, 1.2% of the iliac anastomosis, and in 3% of the femoral anastomosis three years after operation[3]. Edwards reported and incidence of 1% of anastomotic pseudoaneurysm eight years after operation, and 20% 15 years later, with detection at a mean 12 years after operation[4].

Imaging follow-up (angio-CT and MRA) for three to five years after operation is recommended to detect new aneurysms or pseudoaneurysms under formation, and therefore avoid rupture[5].

Open reoperation is technically difficult because of adhesions and fibrosis, and its mortality rate is 5% to 17% when elective, and 24% to 88% when there is rupture[6]. Endovascular repair has a mortality rate of about 3.8%[7].

The endovascular approach has gained importance, with successful results in several case series[6-10]. It reduces morbidity and mortality, particularly in high-risk surgical patients. Its initial technical success is about 98% at the time of implantation, and it reduces perioperative mortality to about 3.8%[7,9]. Despite the complications associated with endoprostheses, such as endoleaks (type II are the most common), thrombosis, migration, rupture, structural failures and infections, short- and long-term follow-up shows lower complication rates than open surgery. This suggests that the endovascular approach may definitely become the method of choice for the treatment of anastomotic pseudoaneurysms[6-9].

In the case reported here, the patient underwent follow-up using imaging tests every two years, and a pseudoaneurysm of the distal aortic anastomosis was detected eight years later. The patient had discrete abdominal pain that radiated to the dorsal region. Abdominal ultrasound detected gallstone, and the hypothesis of pain of biliary origin was raised.

Radiological follow-up showed an increase in the diameter of the pseudoaneurysm, and the endovascular repair was chosen. Abdominal pain resolved completely and the abdominal mass regressed. After three years of follow-up, the patient remains asymptomatic and imaging control has not detected any changes to this moment.

CONCLUSION

The chance of developing a para-anastomotic aneurysm or pseudoaneurysm increases and may reach 20% 15 years after operation, which increases the chances of rupture significantly. Most cases have an asymptomatic progression until rupture, and the outcome is tragic.

Para-anastomotic aneurysms are the most common late complication of the conventional repair of abdominal aorta aneurysm. Adhesions and inflammation caused by the aneurysm and by the previous surgery may complicate surgical access for the correction of this complication, and morbidity and mortality rates are high.

An interesting option, which has shown good short- and middle-term results, as long as the patient's anatomy is favorable, is the endovascular approach, which reduces morbidity and mortality when reoperating this type of late complication of aortic repair.

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