

CASE REPORT

Endovascular treatment for iliac artery pseudoaneurysm with arteriovenous fistula after abdominal aortic aneurysm open repair

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INTRODUCTION

Iliac arteriovenous fistula complicating an iliac anastomotic pseudoaneurysm is a rare occurrence after abdominal aortic aneurysm open repair.^{1,2} We report the third case in the literature and the first case to be treated by endovascular means.

CASE REPORT

A 71-year-old man underwent an abdominal aortic aneurysm open repair eleven years ago. The operation was performed with an aorto-bi-iliac Dacron graft. Three years later, the patient developed a right iliac artery occlusion. Correction was made with a femoral-to-femoral bypass.

The patient presented in the emergency department with acute onset of orthopnea and exertional dyspnea. A physical examination indicated an abdominal thrill and murmur, jugular venous distention, cardiomegaly, and diminished distal pulses in both legs. His vital signs were within normal limits, and biochemical analysis revealed no significant abnormalities. A contrast-enhanced computed tomography angiography (CTA) scan revealed a left iliac artery anastomotic pseudoaneurysm complicated with an ilio-iliac arteriovenous fistula. The femoral-to-femoral bypass and the lower limb arteries were patent (Figures 1 and 2).

An intra-operative arteriography confirmed the false aneurysm and arteriovenous fistula to the left iliac vein. The patient underwent endovascular repair with iliac extender grafts ("Medtronic Talent 16×12×75; 14×12×105 and 16×12×75") in the left iliac artery, sealing the fistula. Control arteriography revealed no residual fistula, no endoleak and adequate lower limb perfusion.

There were no postoperative complications, and the patient was discharged five days after surgery. His congestive heart failure symptoms disappeared. The follow-up CTA scan demonstrated no fistula, no endoleak and adequate lower limb perfusion (Figure 3).

DISCUSSION

Anastomotic false aneurysm is a well-known complication after arterial revascularization procedures. The progression of atherosclerotic disease, wound infection, chronic hypertension, and weakness of the host artery are possible causes for its development.³ Arteriovenous fistula complicating an anastomotic pseudoaneurysm is also common. It has been observed following spine surgery, gynecological surgery, difficult labors, malignancies, and trauma.^{4,5} However, it is an extremely rare complication after abdominal aortic aneurysm open repair, which is one of the most commonly performed arterial reconstructive procedures. This complication has been reported only twice in the literature.^{1,2}

In a patient with a past medical history of an abdominal aortic aneurysm open repair, clinical findings (such as abdominal pulsatile mass, intra-abdominal bruit, and



Figure 1 - Contrast-enhanced computed tomography angiography (CTA), showing the anastomotic pseudoaneurysm and the ilio-iliac arteriovenous fistula. The inferior vena cava is fully contrasted, indicating an arteriovenous fistula.

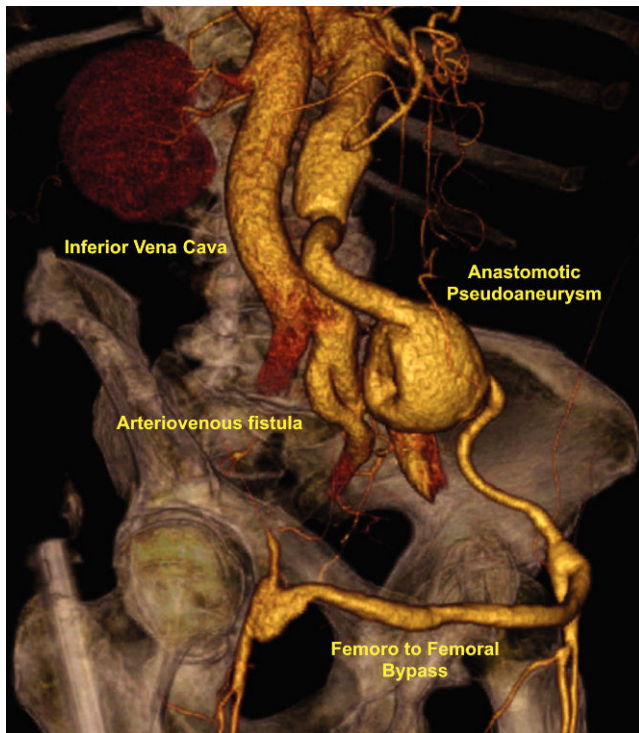


Figure 2 - 3D reconstruction, showing a fully contrasted aorta and inferior vena cava, in addition to a left iliac artery pseudoaneurysm with an ilio-iliac arteriovenous fistula and patency of the femoral-to-femoral bypass.

murmur and acute symptoms of congestive heart failure) can lead to the diagnosis of an arteriovenous fistula complicating an anastomotic false aneurysm. Contrast-enhanced CTA is the preferred noninvasive exam for confirming the diagnosis. It is also helpful for planning endovascular repair.

Once diagnosed, arteriovenous fistula complicating an anastomotic false aneurysm must be treated to prevent its growth, rupture, and cardiac decompensation.⁶ Open techniques have been proposed for the treatment of complex aorto-iliac disease, but these cases involve high risks of bleeding, wound infection, and mortality. Endovascular techniques have been used to decrease these risks by reducing bleeding, the need for blood transfusion, operative time, and infection.^{7,8}

There are no reports of the use of endovascular procedures for an arteriovenous fistula complicating an anastomotic pseudoaneurysm after an abdominal aortic aneurysm open repair. The two cases described in the literature^{1,2} were both treated with open surgical repair.

CONCLUSION

Endovascular treatment appears to be an effective and minimally invasive alternative to open surgery for an arteriovenous fistula complicating an anastomotic pseudoaneurysm after an aorto-bi-iliac Dacron graft bypass.

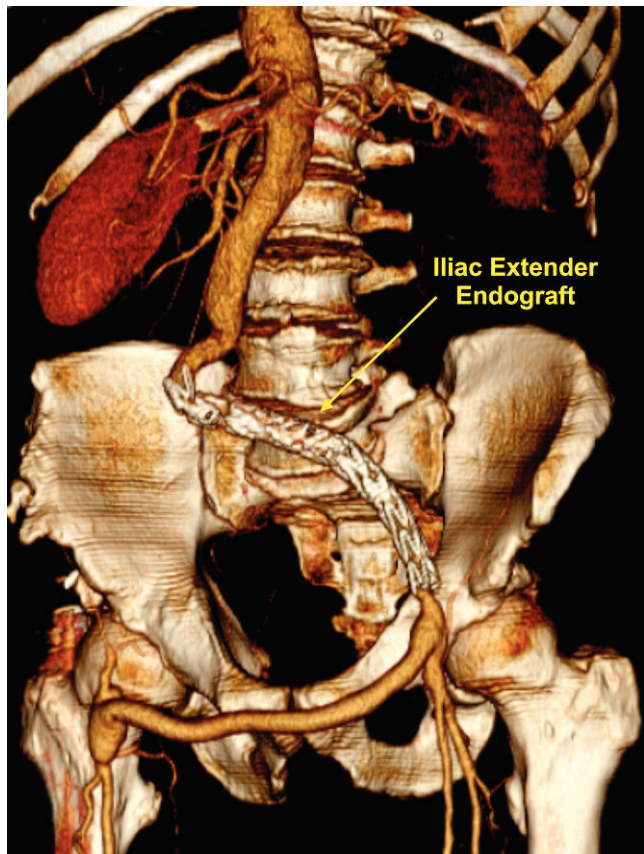


Figure 3 - Postoperative contrast-enhanced computed tomography angiography reconstruction, showing complete resolution of the arteriovenous fistula and pseudoaneurysm.

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