

## CASE REPORT

## Iliopropfunda Endobypass Can Successfully Treat a Post-Operative Femoral Pseudo-Aneurysm

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**Introduction:** A 75-year-old male patient with significant cardiopulmonary comorbidity presented with a 70-mm left femoral pseudoaneurysm 6 years after aortobifemoral bypass (and prior femoral endarterectomy).

**Report:** As the left superficial femoral artery was occluded, an iliopropfunda endobypass was undertaken following extraperitoneal exposure of the left limb of the bypass graft with subsequent deployment of four Viabahn endoprosthesis via the left limb into the proximal left deep femoral artery with successful exclusion of the pseudoaneurysm. The endografts remain patent at 6 months with regression noted in the pseudoaneurysm itself.

**Discussion:** Post-operative femoral pseudoaneurysm following anastomotic dehiscence has traditionally been treated by open surgical repair. Re-re-do open femoral vascular surgery has a high complication rate. Scarring and potential graft infection may necessitate ligation of involved arteries and extra-anatomic bypasses with an attendant risk of limb loss. Although the common femoral artery is conventionally contraindicated for endograft deployment because of the perceived high risk of stent fracture in a highly mobile zone, an endobypass can avoid the potential complications of open revision groin surgery in an unfit, high-risk patient.

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### INTRODUCTION

Post-operative femoral artery pseudoaneurysm following anastomotic dehiscence has traditionally been treated by open surgical means. Re-re-do open vascular surgery in the scarred groin of an unfit patient has an attendant high local complication risk, sometimes necessitating ligation of the artery with extra-anatomical bypass, which carries a finite risk of limb loss, notwithstanding the potential for anaesthetic complications. This study presents the case of a 75-year-old patient with a femoral pseudoaneurysm 6 years following aorto-bifemoral bypass, treated successfully with endovascular stent-grafting, avoiding the need for open redo groin surgery and minimising the complications thereof.

### CASE REPORT

A 75-year-old male initially presented in 2009 with short distance lower limb intermittent claudication (IC), initially treated by a femoral endarterectomy with patch reconstruction and appropriate medical therapy including

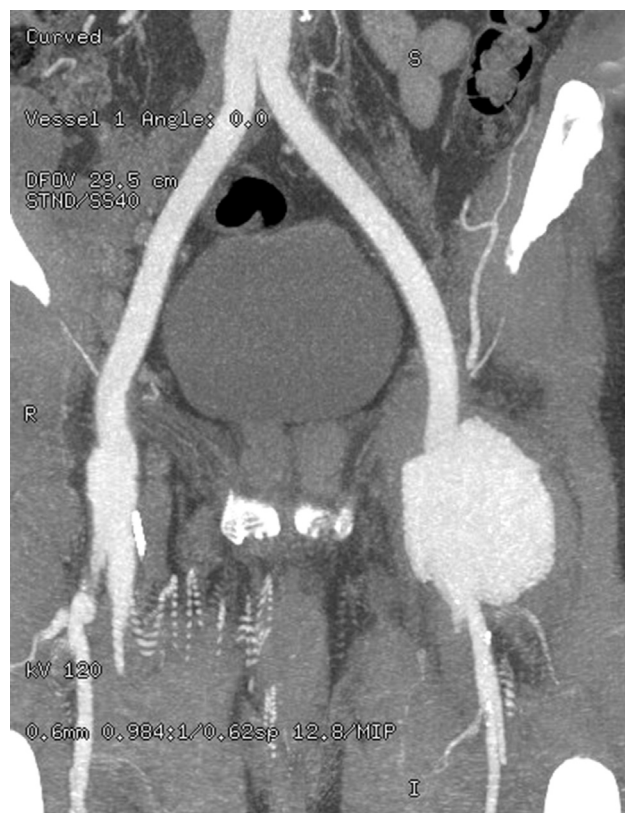


Figure 1. CTA indicating the 70 mm left femoral pseudoaneurysm.

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antiplatelet and lipid-lowering medication. He continued to smoke and re-presented with IC. Repeat imaging showed an ipsilateral iliac stenosis which was successfully stented. However, the patient continued to smoke and he presented again in 2010 with critical left lower limb ischaemia (rest pain), on this occasion because of occlusion of the ipsilateral common (CIA) and external iliac (EIA) arteries along with a contralateral CIA stenosis. He therefore underwent aorto-bifemoral bypass grafting. Post-operative recovery was complicated by compartment syndrome requiring fasciotomy, sepsis, and cardiac complications. The patient was successfully discharged after a prolonged hospital stay.

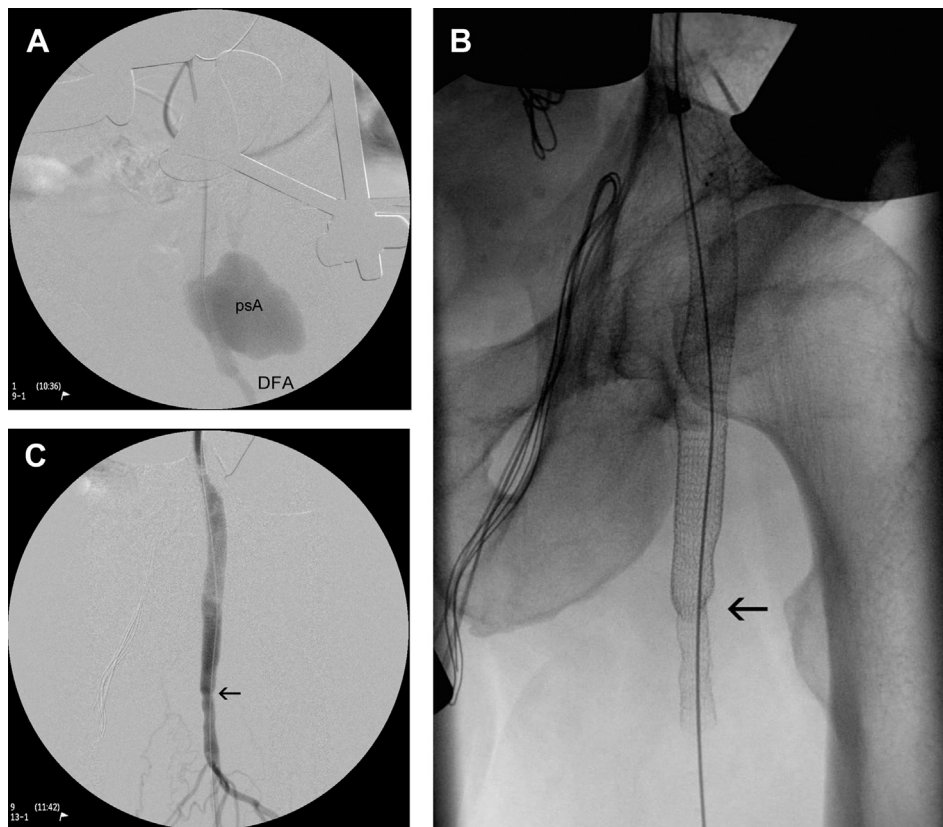
His most recent presentation in 2016 was with sudden-onset left groin pain with a pulsatile mass therein. Computed tomography angiography (CTA) showed a large (70 mm) pseudoaneurysm (psA) arising from the left groin anastomosis (Fig. 1). The patient had continued to smoke and was now extremely high risk with significant cardiorespiratory comorbidities. The superficial femoral artery (SFA) was chronically occluded and therefore, in the absence of any overt groin infection, it was felt that an endovascular approach to achieve psA exclusion and maintain lower limb perfusion via the deep femoral artery (DFA), which was patent, would be both prudent and appropriate.

Under combined spinal-epidural anaesthesia, a left iliac fossa extraperitoneal approach was used to expose the

distal aspect of the left limb of the aortobifemoral graft. A long 12F sheath (Dry-Seal, WL Gore & Associates Inc., Medical Products Division, Flagstaff, AZ, USA) was employed to maintain intravascular access via the graft limb. Subsequently, four heparin-bonded endoprosthesis (Viabahn, WL Gore & Associates Inc.;  $9 \times 50$  mm,  $n = 1$ ,  $10 \times 50$  mm,  $n = 1$ ,  $11 \times 50$  mm,  $n = 1$ ,  $13 \times 50$  mm,  $n = 1$ ) were deployed building from distal to proximal, commencing in the proximal DFA, bridging across the common femoral artery (CFA) to seal proximally within the graft limb (Fig. 2A and B). A 2 cm distal landing zone was achieved without sacrificing significant DFA branches, and all overlaps were kept at a minimum of 2 cm, with successful exclusion of the psA (Fig. 2C). The patient was discharged home the following day on lifelong dual antiplatelet therapy and post-procedure CTA has shown that the false aneurysm remains excluded (Fig. 3). The patient remains well at 6 months under a graft surveillance programme with no reported complications.

## DISCUSSION

False aneurysm formation after aortobifemoral reconstructions is a recognised problem in the long term,<sup>1</sup> with a possible relation to ongoing smoking.<sup>2</sup> Traditionally, psA occurrence following open surgery has been managed by open surgical techniques.<sup>3</sup> In the patient described, open



**Figure 2.** (A) Angiogram indicating the pseudoaneurysm and the outflow via the DFA. (B) Screenshot of the four endoprosthesis after deployment. (C) Completion angiogram indicates successful pseudoaneurysm exclusion and PFA outflow with proximal branch preservation (arrow = transition zone from CFA to DFA).

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