

## CASE REPORT

## Endovascular Repair of Ruptured Popliteal Artery Aneurysms: A Case Report and Review of the Literature

S.L. Brown <sup>a,\*</sup>, M. Lewis <sup>b</sup>, D.R. Morrow <sup>a</sup>

<sup>a</sup>Department of Vascular Surgery, Norfolk and Norwich University Hospital, Colney Lane, Norwich, Norfolk, NR4 7UY, UK

<sup>b</sup>Department of Interventional Radiology, Norfolk and Norwich University Hospital, Colney Lane, Norwich, Norfolk, NR4 7UY, UK

**Objective/Background:** The objectives were to report the management and outcomes of a 96-year-old man who presented with an acutely swollen right leg due to a ruptured popliteal aneurysm, and to review the relevant literature.

**Methods:** A ruptured popliteal artery aneurysm is a rare diagnosis and is one that is often missed at time of presentation. Previous case reports have documented successful outcomes following surgical repair, and a smaller number following endovascular repair. This is a case report of a 96-year-old man who eventually underwent endovascular repair of a ruptured popliteal artery aneurysm after a delay in diagnosis. A literature review was performed to analyse published data in this field.

**Results:** The patient underwent an uncomplicated endovascular repair with a GORE<sup>®</sup> VIABAHN<sup>®</sup> stent. A 15-week follow-up ultrasound demonstrated biphasic flow in a patent stent-graft with an unchanged aneurysm sac size and no evidence of an endoleak. A review of the literature demonstrated nine cases of ruptured non-mycotic popliteal artery aneurysms treated endovascularly. Seven cases survived the postoperative period, three had no follow-up recorded, and four cases had patent stent-grafts at time of follow-up.

**Conclusion:** Safe and effective endovascular repair of a ruptured popliteal artery aneurysm with endograft patency seen at the 15-week follow-up is reported. Review of the literature suggests that open repair remains the first-line management choice; however, endovascular repair is a valuable alternative. There is a further need for longer-term monitoring of endograft patency following endovascular repair.

© 2016 Published by Elsevier Ltd on behalf of European Society for Vascular Surgery. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Article history: Received 10 March 2016, Revised 15 June 2016, Accepted 3 July 2016,

**Keywords:** Endovascular procedure, Gore Viabahn, Ruptured popliteal aneurysm

### BACKGROUND

The popliteal artery is the most common site for peripheral aneurysm formation.<sup>1</sup> However, rupture of a popliteal artery aneurysm is rare. A recent study has reported the incidence of rupture at the time of presentation at 2.2%.<sup>2</sup> Early diagnosis is key to prevent injury to life or limb. To date, no guidelines are available to advise on management of a ruptured popliteal artery aneurysm. Currently, surgical intervention is performed more frequently,<sup>3</sup> but endovascular repair is increasingly being used, particularly in those with multiple comorbidities.

This case report aims to add to the limited amount of evidence available,<sup>4</sup> demonstrating successful endovascular repair of a ruptured popliteal artery aneurysm.

### CASE PRESENTATION

A 96-year-old male ex-smoker with a background of benign prostatic disease and dementia was admitted to another hospital following a collapse at home. Blood tests performed on admission revealed a normocytic anaemia with a haemoglobin of 119 g/L, a raised D-dimer of 1095 ng/mL, normal troponin, normal C-reactive protein, and a neutrophilia of  $10.44 \times 10^9/L$ . A cause for the collapse and raised D-dimer were investigated; however, no cause was found. A diagnosis of venous thromboembolism was considered but excluded on the basis of Well's score; therefore, the patient was not anticoagulated and was discharged home with a course of antibiotics for a urinary tract infection.

The next day the patient was referred back to the medical team by his general practitioner with a swollen right knee and thigh with extensive bruising, suspicious for deep vein thrombosis. The patient attended the deep vein thrombosis clinic and underwent a lower limb ultrasound, which revealed a patent venous system and detected a popliteal artery aneurysm (anteroposterior diameter

\* Corresponding author. Department of Vascular Surgery, Norfolk and Norwich University Hospital, Colney Lane, Norwich, Norfolk, NR4 7UY, UK.  
E-mail address: [stephaniebrown@doctors.org.uk](mailto:stephaniebrown@doctors.org.uk) (S.L. Brown).

2405-6553/© 2016 Published by Elsevier Ltd on behalf of European Society for Vascular Surgery. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

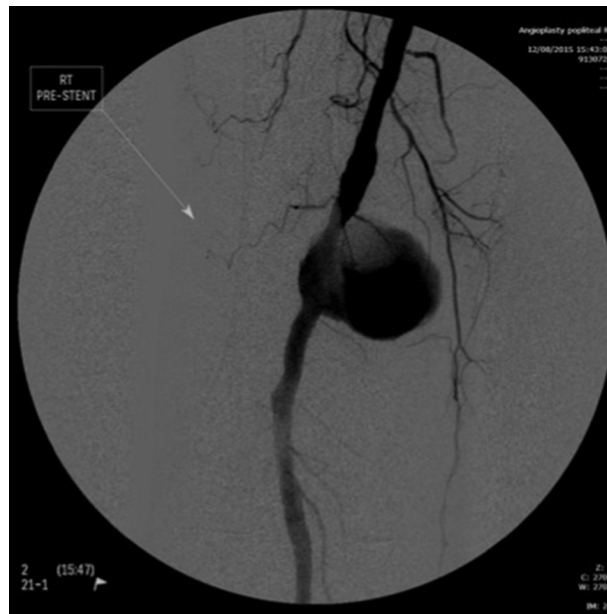
<http://dx.doi.org/10.1016/j.ejvssr.2016.07.001>



**Figure 1.** Computed tomography angiogram demonstrating the right 4 × 5 cm right saccular popliteal artery aneurysm (lateral view).

45 mm) with a haematoma in the medial aspect of the leg just above his knee that measured 11.4 × 5.2 cm. The patient was discharged home the same day and referred to the authors' vascular service for an urgent outpatient appointment that took place 7 days later. At this point, the patient was found to be having difficulty walking owing to pain in his right leg and he was admitted from the clinic as an emergency.

Clinically, extensive bruising was evident behind the patient's right knee and posterior-medial thigh. A pulsatile mass was felt posterior to the medial aspect of his right knee, and the pulsatile area was felt to be extending into his posterior mid-thigh. The patient's right foot was pulseless but not acutely ischaemic.



**Figure 2.** On-table angiogram showing right 4 × 5 cm saccular popliteal artery aneurysm pre-stent.

Admission blood tests showed an acute normocytic anaemia with a haemoglobin level of 77 g/L. A computed tomography angiogram demonstrated a right 4 × 5 cm right saccular popliteal artery aneurysm with a large posterior thigh collection extending superiorly measuring approximately 23 × 3 cm (Fig. 1). Run-off was severely diseased but patent. No other aneurysmal disease in the aorta or more distally was identified. As part of the patient's management, he was transfused with blood and discussed in the vascular multidisciplinary team meeting.

Primarily because of the patient's age and longstanding cognitive impairment, the safest definitive management option was felt to be endovascular repair with insertion of an above-knee popliteal stent-graft. A GORE® VIABAHN® stent (W.L. Gore & Associates, Flagstaff, AZ, USA) was deployed through a right femoral cut-down under general anaesthetic (as decided by the anaesthetist at the time, although local anaesthetic may be preferable in some patients). Completion angiogram showed successful exclusion of the aneurysm (Figs. 2–4) with an unchanged run off. The patient was then started on dual antiplatelets post-operatively (aspirin and clopidogrel) for 3 months, followed by lifelong aspirin.

### **Outcome and follow-up**

The patient was seen in clinic 6 weeks after his discharge from hospital. He was recovering well with the bruising and swelling having all settled down. A below-knee palpable pulse was present, indicating that the stent at this time was patent and the mass was no longer pulsatile.

A follow-up graft patency check was performed 15 weeks postoperatively. Doppler ultrasound showed biphasic flow in a patent stent. The aneurysm sac size was unchanged and

Download English Version:

<https://daneshyari.com/en/article/2911461>

Download Persian Version:

<https://daneshyari.com/article/2911461>

[Daneshyari.com](https://daneshyari.com)