

## CASE REPORT

# Ruptured Popliteal Aneurysm Infected with *Salmonella enteritidis*: an Unusual Cause of Leg Swelling

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### Introduction

Mycotic aneurysms make up less than 2% of popliteal aneurysms.<sup>1</sup> They typically present with leg pain, swelling and erythema, a picture similar to deep venous thrombosis.

A rapidly expanding aneurysm may indeed compress the popliteal vein giving venous stasis and calf swelling. Here we describe a case of ruptured popliteal aneurysm infected with *Salmonella enteritidis* presenting as a popliteal vein thrombosis.

### Case Report

An 87-year-old woman presented to the physicians on the 24 February 1994 with a 2-week history of falls and a painful, swollen left leg. Her past history included a recent episode of gastroenteritis from which no organism was isolated.

An ultrasound scan on presentation had shown a left popliteal artery aneurysm and occlusion of the left popliteal vein. She was treated as for a below-knee deep vein thrombosis with anticoagulation, but after 3 weeks her symptoms were worse and a repeat scan showed an increase in size of the aneurysm from 2.5 cm to 4.8 cm. At this point she was referred to the vascular surgeons.

On examination she was pyrexial – 37.5 °C – with a massively swollen left leg and a tender left popliteal

aneurysm. She had a full compliment of peripheral pulses. Routine investigations revealed a leucocytosis of  $13.3 \times 10^6/\text{ml}$ .

Angiography (Fig. 1) and computed tomography with contrast (Fig. 2) on the day of referral revealed a saccular popliteal aneurysm, 7.1 by 4.1 cm in diameter lined with thrombus but not leaking.

She was taken to theatre on the 4 April 1994, where the aneurysm was found to contain pus and thrombus and to have ruptured into the lateral head of gastrocnemius. Culture of operative specimens grew *Salmonella enteritidis* sensitive to ciprofloxacin. The artery was ligated above and below the aneurysmal sac and an extra-anatomic bypass graft performed using 6 mm externally supported PTFE because not enough length of saphenous vein of adequate size was found for use as a graft.

The proximal anastomosis was to the superficial femoral artery in the femoral triangle. The graft was tunnelled laterally and anastomosed to the proximal anterior tibial artery using a Miller vein cuff. The popliteal fossa was then packed with Betadine gauze and left open for closure 2 days later, and long-term ciprofloxacin commenced.

Her postoperative period was complicated by acute on chronic renal failure, a mild left-sided stroke and diarrhoea secondary to *Clostridium difficile*. She was transferred back to the care of the physicians on the 18 April 1994 for rehabilitation.

Since discharge she has been well, but was readmitted to hospital with septicaemia secondary to bronchopneumonia, and haematuria secondary to an indwelling catheter in July 1995.

A routine postoperative duplex scan at 7 days

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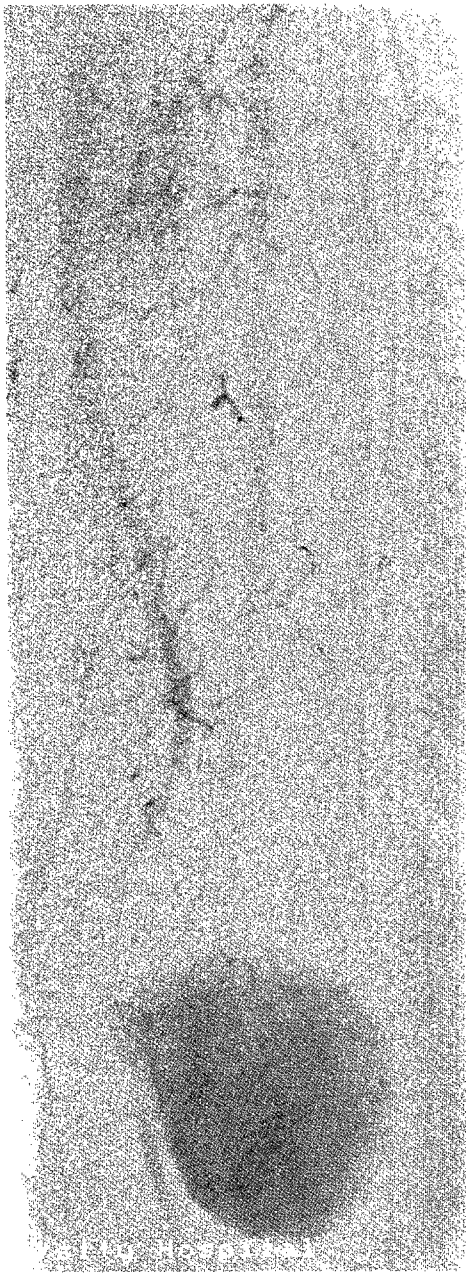


Fig. 1. Digital subtraction angiography of the left leg showing a saccular popliteal aneurysm.

showed a patent graft and flow in the popliteal vein. Clinical review and a surveillance scan at 20 months confirmed continued graft patency and a viable limb.

### Discussion

*Salmonella enteritidis* has been documented in approximately 30% of infected abdominal aortic aneurysms.<sup>2</sup> It has also been found infecting aneurysms of

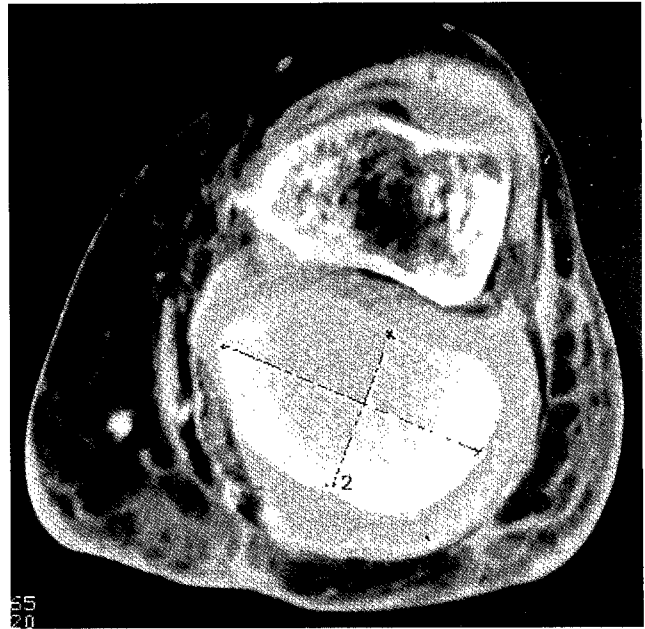


Fig. 2. Contrast enhanced CT scan of the aneurysm showing no leak of contrast.

the iliac and femoral arteries,<sup>3,4</sup> but on only one previous occasion the popliteal artery,<sup>5</sup> where it presented with ischaemic symptoms.

Organisms more commonly infecting popliteal aneurysms are *Streptococci*, *Staphylococcus aureus* and enteric bacteria such as *E. coli*.<sup>1</sup>

Mycotic aneurysms may arise a long time after the causative bacteraemia has disappeared, and in this case the preceding gastroenteritis may be significant.

Diagnosis is made clinically and by blood cultures, which here were negative; however, compression of the popliteal vein by the aneurysmal sac may give the clinical picture of deep venous thrombosis, which in this case caused the delay in making the true diagnosis.

Treatment follows the principles applied to any infected aneurysm, the object of which is to remove all infected material and restore distal blood supply, followed by antibiotic therapy for a minimum of 6 weeks.

In the previously documented case<sup>5</sup> a popliteal vein thrombectomy was undertaken with good effect; however, our experience suggests that this is unnecessary due to the rapid recanalisation of the occluded vein.

### Acknowledgement

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