



# Ruptured Popliteal Artery Aneurysm

Umberto G. Rossi, MD, EBIR<sup>1,2</sup>  Francesco Petrocelli, MD<sup>3</sup> Maurizio Cariati, MD<sup>2</sup>

<sup>1</sup>Interventional Radiology Unit, Department of Radiological Area, E. O. Galliera Hospital, Genova, Italy

<sup>2</sup>Diagnostic and Interventional Radiology Unit, Department of Diagnostic and Therapeutic Advanced Technology, Azienda Socio Sanitaria Territoriale Santi Paolo and Carlo Hospital, Milano, Italy

<sup>3</sup>Department of Radiology and Interventional Radiology, Istituto di Ricerca a Carattere Clinico e Scientifico San Martino Policlinic University Hospital, Genova, Italy

**Address for correspondence** Umberto G. Rossi, MD, EBIR, Diagnostic and Interventional Radiology Unit, Department of Diagnostic and Therapeutic Advanced Technology, Azienda Socio Sanitaria Territoriale Santi Paolo and Carlo Hospital, Via A di Rudini, 8 - Via Pio II, 3 - 20100 Milano, Italy  
(e-mail: urossi76@hotmail.com; umberto.rossi@galliera.it).

Aorta (Stamford) 2021;9:233–234.

## Abstract

### Keywords

- ▶ popliteal artery
- ▶ aneurysm
- ▶ imaging
- ▶ aging
- ▶ endovascular

Rupture of a popliteal artery aneurysm is an uncommon event in an uncommon disease. We present the case of an 88-year-old female with a ruptured popliteal artery aneurysm that was diagnosed by multidetector computed tomography and treated by an endovascular approach.

An 88-year-old female, with arterial hypertension, was admitted to our hospital for onset of acute pain and swelling behind her left knee. There was no history of trauma. Physical examination revealed a palpable and pulsatile mass in the upper popliteal fossa. Left ankle brachial index was 0.8 (normal range: 0.9–1.2). Multidetector computed tomography of left lower limb, on axial and sagittal volume rendering technique reconstruction, revealed a voluminous popliteal artery aneurysm (4.1 cm; arrowhead) with partial aneurysm sac thrombosis and signs of contained rupture (▶ **Fig. 1A, B**). She was felt to be a candidate for an urgent percutaneous endovascular approach.

Intraoperative digital subtraction angiography confirmed left popliteal artery aneurysm (▶ **Fig. 2**; arrowhead). A covered stent was deployed into the left popliteal artery segment with consequent aneurysm sac

exclusion (▶ **Fig. 3**). The patient's symptoms resolved after the procedure with an uneventful postoperative course.

Predischarge and follow-up ultrasound color Doppler confirmed thrombosis of the treated left popliteal aneurysm sac and stent lumen patency.

Ruptured popliteal artery aneurysm is an uncommon event in an uncommon disease.<sup>1</sup> Multidetector computed tomography in urgent cases is the diagnostic imaging of choice to evaluate aneurysm anatomy and possible complications, as well as for planning treatment approach.<sup>1,2</sup> In cases of ruptured popliteal artery aneurysm, as in our patient, with partial thrombosis and good run-off blood flow to the foot, an endovascular approach is indicated.<sup>2</sup> Endovascular deployment of a covered stent to exclude the popliteal artery aneurysm is a less invasive procedure compared with a conventional surgical approach.<sup>3</sup>

received  
September 18, 2020  
accepted after revision  
July 2, 2021

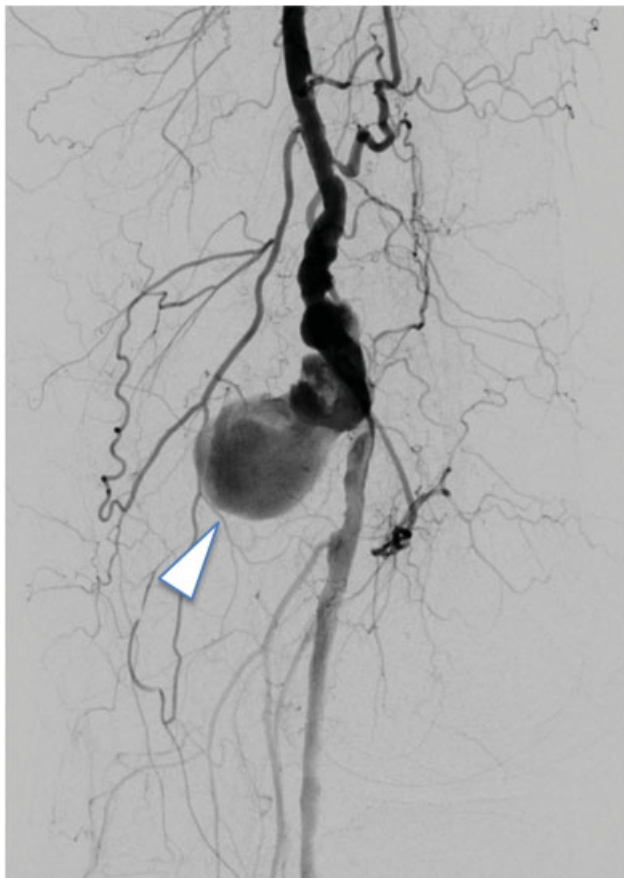
DOI <https://doi.org/10.1055/s-0041-1739484>.  
ISSN 2325-4637.

© 2021. The Author(s).

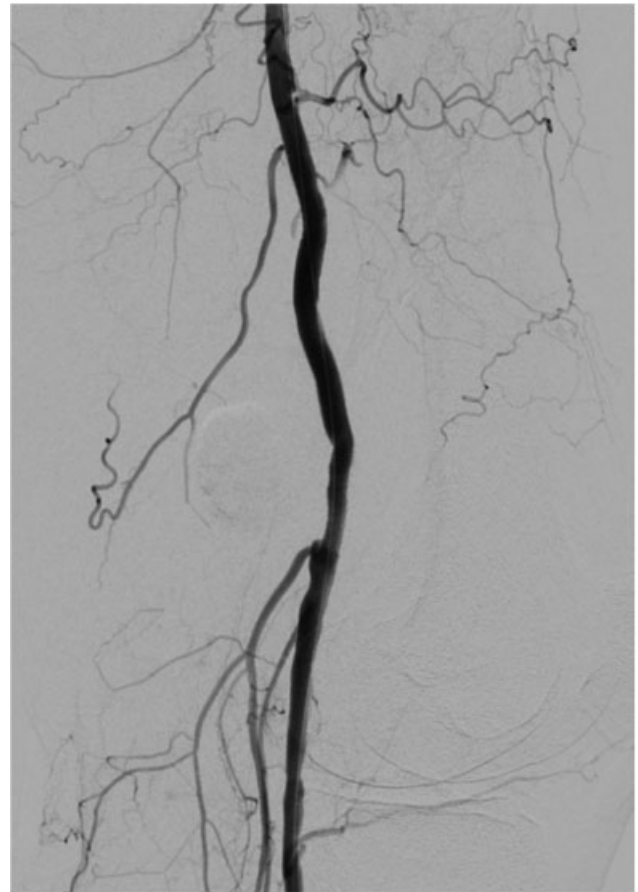
This is an open access article published by Thieme under the terms of the Creative Commons Attribution License, permitting unrestricted use, distribution, and reproduction so long as the original work is properly cited. (<https://creativecommons.org/licenses/by/4.0/>)  
Thieme Medical Publishers, Inc., 333 Seventh Avenue, 18th Floor, New York, NY 10001, USA



**Fig. 1** A voluminous popliteal artery aneurysm (arrowhead) with partial aneurysm sac thrombosis and signs of contained rupture. VRT, volume rendering technique.



**Fig. 2** Intraprocedural diagnostic digital subtraction angiography confirmed left popliteal artery aneurysm (arrowhead).



**Fig. 3** A covered stent was deployed into the left popliteal artery segment with consequent aneurysm sac exclusion.

**Funding**

This research was funded solely through institutional sources.

**Conflict of Interest**

The authors declare no conflict of interest related to this article.

**Acknowledgments**

None.

**References**

- 1 Cervin A, Ravn H, Björck M. Ruptured popliteal artery aneurysm. *Br J Surg* 2018;105(13):1753–1758
- 2 Björck M, Earnshaw JJ, Acosta S, et al; Esvs Guidelines Committee. Editor's choice - European Society for Vascular Surgery (ESVS) 2020 clinical practice guidelines on the management of acute limb ischaemia. *Eur J Vasc Endovasc Surg* 2020;59(02):173–218
- 3 Rossi UG, Santuari D, Dallatana R, Cariatì M. Use of iliac branch device for endovascular treatment for abdominal aorta aneurysm with small diameter neck. *Aorta (Stamford)* 2017;5(06):181–183