

A rare case of non-mycotic ruptured popliteal aneurysm

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Popliteal artery aneurysms (PAAs) are the most common peripheral arterial aneurysms, and they are generally complicated by distal embolization or thrombosis, resulting in acute or chronic limb ischemia.¹ Although rupture of a popliteal artery aneurysm is rare, the incidence is 2.2%.² Accurate diagnosis and timely surgical treatment are recommended in cases of symptomatic PAAs. Its rupture into the popliteal space, usually confined by muscles and tendons, causes pain and thigh swelling, but also symptoms arising from compression of adjacent structures: deep vein thrombosis or associated neurological symptoms. Therefore, patients are often initially evaluated by orthopedics.³

According to the patient's general health, endovascular repair is increasingly used and is a durable alternative to surgery on medium-term follow-up.^{4,5}

We present a 63-year-old man referred to our emergency department for severe and sudden thigh pain and swelling while he was riding his motorcycle. A deep venous thrombosis was initially suspected, but a duplex ultrasound confirmed a giant PAA and hematoma. The patient was investigated with computed tomography angiography, which revealed the presence of a bulky PAA of the P1 tract with a maximum diameter of 10 cm with wall irregularities and hemorrhage into the popliteal cavity (A) due to a posterior-medial rupture (B/Cover and a drawing as C). Angiography confirmed the diagnosis, and four Viabahn endografts (W.L. Gore & Associates) were deployed from bottom to top from 15 mm above the origin of the anterior tibial artery. The final angiography confirmed the complete exclusion of the aneurysm and the patency of the tibial vessels (D). The patient was recovering well, and a palpable pedal pulse was present. All the blood microbiological samples were negative. A follow-up duplex ultrasound graft patency control was performed after 8 months, and the aneurysm sac size had partially shrunk.

This case highlights the possibility of misdiagnosing a ruptured PAA as a deep venous thrombosis, bleeding, or abscess. The treatment goals are control of bleeding and maintenance of distal perfusion. Emergent endovascular treatment is fast and safe; however, decompression is not performed. The patient consented to the publication of the case details and relative images.

DISCLOSURES

None.

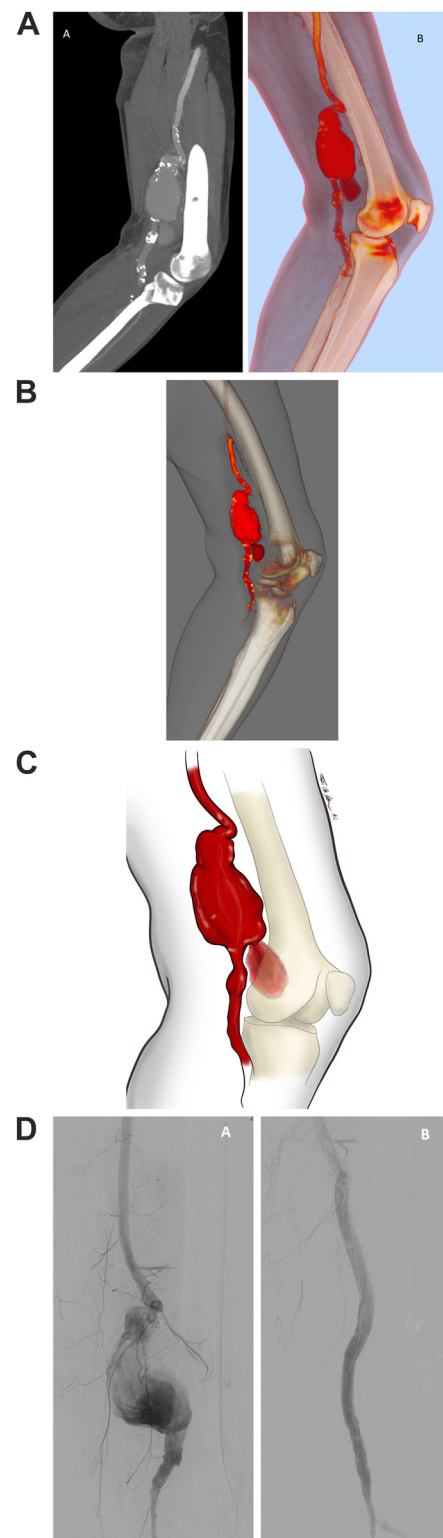
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REFERENCES

1. Martelli E, Ippoliti A, Ventoruzzo G, De Vivo G, Ascoli Marchetti A, Pistolesse GR. Popliteal artery aneurysms: factors associated with thromboembolism and graft failure. *Int Angiol.* 2004;23:54–65.
2. Cervin A, Tjarnstrom J, Ravn H, et al. Treatment of popliteal aneurysm by open and endovascular surgery: a contemporary study of 592 procedures in Sweden. *Eur J Vasc Endovasc Surg.* 2015;50:342–350.
3. Shortell CK, DeWeese JA, Ouriel K, Green RM. Popliteal artery aneurysms: a 25-year surgical experience. *J Vasc Surg.* 1991;14:771–779.
4. Cervin A, Ravn H, Björck M. Ruptured popliteal artery aneurysm. *Br J Surg.* 2018;105:1753–1758.
5. Bani-Hani MG, Elnahas L, Plant GR, Ward A, Moawad M. Endovascular management of ruptured infected popliteal artery aneurysm. *J Vasc Surg.* 2012;55:532.e4.

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