With Popliteal Aneurysms:
When Observe
When Endovascular Treatment
When Open Repair And What Approach

Raffaele Pulli
Professor and Chief
Vascular and Endovascular Surgery
University of Bari - Italy

Disclosures

- I have the following potential conflicts of interest to report:
  - Receipt of grants/research support
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  - Participation in a company sponsored speakers’ bureau
  - Employment in industry
  - Shareholder in a healthcare company
  - Owner of a healthcare company

- I do not have any potential conflict of interest

PAA: natural history

Asymptomatic popliteal aneurysms develop symptoms at a rate of about 14% per year (range, 5-24%). Acute ischaemia occurs in about one-third of cases. This is usually due to thrombosis but thrombus from the aneurysm can embolize distally. About a quarter of popliteal aneurysms are associated with intermittent claudication, either from thrombosis, repeated microembol or combined stenotic arterial disease. Pressure symptoms from large popliteal aneurysms can produce pain or discomfort behind the knee or swelling, with or without deep venous thrombosis, due to popliteal vein compression in about 5% of cases. Rupture nowadays is very rare.

PAA: when observe

- Lack of dedicated guidelines
- General agreement to treat:
  - Symptomatic patients regardless the diameter of PAA
  - Asymptomatic patients with diameter >3 cm
- Debated indication in small aneurysms

Nonoperative versus surgical management of small (less than 3 cm), asymptomatic popliteal artery aneurysms

CONCLUSION

All patients with PAA should have “best medical treatment” recommended to anyone with cardiovascular disease. They should be assured of the presence of other aneurysms. Management of asymptomatic popliteal artery aneurysms remains controversial. It is clear that no single criterion is sufficiently robust to identify reliably high risk PAA. Using a cut-off 75% diameter alone as an indicator for elective repair will subject an unacceptably large number of patients to unnecessary morbidities and mortality. However, combining risk factors may be more useful. Size and duration appear to be a more reliable means of identifying high risk aneurysms than size alone.

Key message: Asymptomatic popliteal aneurysms measuring less than 3 cm in diameter should be treated conservatively, provided that there is no significant distal involvement.

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Popliteal Aneurysms: Distortion and Size Related to Symptoms

R.B. Gilliland and T.A. Magee

PAA: when observe

- Aneurysms less than 3 cm:
  - Presence of thrombus
  - Distortion
  - Growth rate
  - Runoff
  - Patients unfit for surgery

PAA: when endovascular treatment

A matched case-control study on open and endovascular treatment of popliteal artery aneurysms

In summary, endovascular repair continously seems better to be an ideal approach for patients with PAA in order to maintain the output of open surgical morbidity. However, the long term results show an increased risk of thrombus formation and occlusion, and the lack of long term results to support this notion, coupled with the reported immediate periperal mortality of 6% to 14% and the long term follow-up is not available. Repair of popliteal artery aneurysms, and the lack of long term results are the reasons for the need for a long term follow-up.

Thomas L. Forbes, MD, Section Editor

Open versus endovascular repair of popliteal artery aneurysms

In summary, endovascular repair is associated with improved survival and improved limb salvage rates compared to open repair. Further improvements in prosthesis design and technology are necessary to improve outcomes.

(2010)
CASE REPORT

PAA: when open repair and what approach
SVS guidelines are ongoing

CONCLUSIONS

- We have few data about the natural history of small PAA
- The introduction and the worldwide diffusion of endovascular techniques allow satisfactory results also for PAA
- Open repair still remains the best option in patients fit for surgery
- An accurate selection of the patients is mandatory