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Case Report

A unilateral popliteal vein aneurysm in an adult cadaver: A case report

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ABSTRACT

Introduction: The incidence of venous aneurysm is less than the arterial aneurysms. The knowledge of Popliteal vein aneurysm (PVA) is important as it could be a source of pulmonary embolism, deep vein thrombosis and so could be fatal. PVA could be an incidental finding during the investigations for pulmonary embolism or chronic venous insufficiency.

Case Report: We report a case of left popliteal vein aneurysm in the popliteal fossa in a 65-year-old female cadaver observed during routine dissection. A large saccular dilatation was noted in the left popliteal vein in the distal part of the popliteal fossa. The right popliteal vein was normal.

Conclusion: An early diagnosis of PVA with doppler ultrasound examination is important to prevent the occurrence of any thromboembolic events or other major complications.

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1. Introduction

Aneurysm is the abnormal dilatation of the blood vessel. Venous aneurysms are less common when compared to arterial aneurysms. If present, venous aneurysms (VA) can be highly dangerous and life threatening. Mostly the VA are incidental findings. Popliteal vein aneurysm (PVA) involves all three layers (tunica intima, media and adventitia) of the vein and are called true aneurysm.¹ This could lead to stasis of blood and in turn result in thrombosis and could be life-threatening.

The deep veins of the leg form the popliteal vein (PV) that ascends through the popliteal fossa to the opening in the adductor magnus muscle. The popliteal artery (PA) accompanies the PV. Lower part of the popliteal vein is medial to the PA. Then the popliteal vein crosses and lies posterior (superficial) to the PA. Proximal to the knee joint PV is posterolateral to the artery.²

Since there are no much signs and symptoms specific to PVA, it is difficult to diagnose it. In most of the cases it turns out to be an incidental finding during routine investigations such as ultrasound or doppler studies done to evaluate deep vein thrombosis.^{1,3}

2. Case Report

During routine cadaveric dissection of the left lower limb of a 65-year-old female cadaver, in the Department of Anatomy, Sri Ramachandra Medical College and Research Institute, Chennai, the popliteal fossa was meticulously dissected to expose its contents. Interestingly, a large saccular dilatation was seen in the left popliteal vein at the distal end of the popliteal fossa over the popliteal surface of tibia. This aneurysm of the popliteal vein was 3 cm long and 1.5 cm wide. The formation, course, and termination of popliteal vein were otherwise normal. The popliteal artery was situated deep to the vein. The tibial and common peroneal branches of sciatic nerve were located lateral to it. The right popliteal vein was normal.

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Fig. 1: A large saccular dilatation (white arrow) was observed in the left popliteal vein in the distal end of the popliteal fossa over the popliteal surface of the tibia. tibial nerve (white arrow head) and popliteal artery (red star).

3. Discussion

The incidence of venous aneurysm is less than the arterial aneurysms. Popliteal Vein aneurysm has been reported in a 16-year-old male patient as a swelling behind the knee and with slight discomfort while walking, but was otherwise asymptomatic. According to the authors, PVA should be considered among the differential diagnosis while evaluating a popliteal mass. Ultrasound revealed aneurysmal dilatation in left popliteal vein.⁴ Miyamoto M et al., reported two cases with PVA in right and left popliteal vein respectively.⁵ The authors also stated that with the availability of imaging methods such as Doppler ultrasonography early diagnosis of venous aneurysms in the pre-thrombotic phase can be made. According to Teter KA et al., have stated in their study that among the aneurysms of lower extremity, venous aneurysms are seen in most of the cases.⁶

PVA are sometimes misdiagnosed as baker's cyst which is characterized by swelling in the popliteal fossa.¹ The diagnosis of PVA is usually made incidentally during investigations for pulmonary embolism or in cases of chronic venous insufficiency. Surgery is indicated in all

symptomatic patients. Surgery is also recommended in patients with asymptomatic saccular aneurysms or large fusiform aneurysms.¹

Chaisiwamongkol K et al., reported a fusiform aneurysm of right popliteal artery.⁷ Sumalatha S et al., reported a case of right PVA in a 67-year-old male cadaver without any other associated variations in the cadaver which was similar to our report.⁸ Rao SS et al., reported two fusiform PVA in right popliteal vein in a 60 year old male cadaver.⁹

4. Conclusion

Hence we conclude that Popliteal vein aneurysm is usually an incidental finding during an ultrasound or a doppler study to evaluate deep vein thrombosis. It is also important to include PVA as a differential diagnosis in cases of patients presenting with a popliteal mass and an early diagnosis of PVA with doppler ultrasound examination is important to prevent the occurrence of any thromboembolic events or other major complications.

5. Source of Funding

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6. Conflict of Interest


The author declares that there is no conflict of interest.

References


1. Hafez İ, Diken Aİ, Türkmen U, Alemdaroğlu U, Tünel HA. A rare presentation of a saccular aneurysm of the popliteal vein: A case report. *Turkish J Vasc Surg.* 2021;30(2):159–161. doi:10.9739/tjvs.2021.903.
2. Standing S. Gray's anatomy e-book: the anatomical basis of clinical practice. and others, editor. Elsevier Health Sciences; 2015.
3. Sandstrom A, Reynolds A, Jha P. Popliteal Vein Aneurysm: A Rare Cause of Pulmonary Emboli. *Ann Vasc Surg.* 2017;38:315–e15. doi:10.1016/j.avsg.2016.05.093..
4. Musa J, Rahman M, Saliq K, Siddik AB, Khadra R, Guy A, et al. Popliteal vein aneurysm in a teenager with knee swelling. *Radiol Case Rep.* 2021;16(6):1410–9. doi:10.1016/j.radcr.2021.03.022..
5. Miyamoto M, Costa MD, Granella VH, Angelo BZ, De Andrade C, Raymundo D, et al. Popliteal vein aneurysm: report of two cases. *Jornal vascular brasileiro.* 2018;17(2):170–3. doi:https://doi.org/10.1590/1677-5449.009717.
6. Teter KA, Maldonado TM, Adelman MA. A systematic review of venous aneurysms by anatomic location. *J Vasc Surg Venous Lymphat Disord.* 2018;6(3):408–13. doi:10.1016/j.jvsv.2017.11.014..
7. Chaisiwamongkol K, Toomsan Y, Tuamsuk P, Boonruangsri P, Teepsawang S. A case of multiple aneurysms in Northeast Thailand embalmed cadaver. *Srinagarind Med J.* 2008;23(1):113–6.
8. Sumalatha S, Souza AS, Bhat KM, Bhat N, Hosapatna M, Kotian SR, et al. An unusual right popliteal vein aneurysm in an adult cadaver: A case report. *Australas Med J.* 2014;7(6):260–3. doi:10.4066/AMJ.2014.2128.
9. Rao SS, Pamidi N, Somayaji SN, Rao MK. Right popliteal vein aneurysm: a case report. *Int J Anatomical Variations.* 2011;4:61–2.

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