

Common Femoral Vein Aneurysm- A Case Report

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Abstract:

Objective: Primary venous aneurysms are rarely encountered lesions. Case reports have been described throughout the venous system. The lesions are usually symptom-free being found as a subcutaneous mass, an incidental finding on an imaging study, or during the work-up for deep venous thrombosis. However, embolism and rupture have been rarely described. A femoral vein aneurysm is reported, along with a current review of the literature of venous aneurysms.

Method: In a 11-year-old healthy female complaining of a localised swelling and pain in her left inguinal region, duplex ultrasonography and angio-computed tomography revealed a giant common femoral vein aneurysm then Tangential aneurysmectomy and lateral venorrhaphy is performed.

Results: Recovery was uneventful and patient still remains asymptomatic. Further duplex ultrasonography revealed patency of common femoral vein without thrombotic changes and no dilatation of the operated vein segment has been observed in the follow-up studies.

Keywords: Venous aneurysm, femoral vein, Pulmonary emboli, Doppler ultrasound, Tangential aneurysmectomy, CT angiography

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I. Introduction

Common femoral vein aneurysms are rare, yet knowledge of this entity is important for the surgeon who performs hernia repairs. This is because common femoral vein aneurysms can simulate inguinal or femoral hernias, and misdiagnosis can lead to significant morbidity if treated incorrectly. To our knowledge, only five other cases of femoral aneurysms simulating inguinal or femoral hernias have been reported. Venous Aneurysm (VA) is a focal dilatation that communicates with a normal venous segment through a single channel, non-related to a varicose segment, pseudoaneurysm or arteriovenous fistula. Most venous aneurysms are congenital, although they may also be acquired by trauma or inflammation¹ Single venous aneurysms are rare and usually appear as incidental findings on physical tests or imaging studies, yet little reported in the medical literature. However, they may be remembered as a rare cause of Pulmonary Embolism (PE) and Deep Vein Thrombosis (DVT)² The objective of this study is to report a case of asymptomatic common femoral vein aneurysm with a conservative approach.

II. Case

The case presented here is a 11-year-old female with a local discomfort in the left inguinal region. On detailed physical examination, a soft, non-pulsatile and compressible mass was identified. Complete blood count and basic metabolic profile were normal. Color-Doppler ultrasonography was performed to identify the origin of the lesion. A focal dilated segment of proximal common femoral vein seen measuring approximately 21X 9.9 mm with color flow on Doppler showing venous waveform pattern. Distal femoral vein, GSV and popliteal vein appears normal with no thrombus. Angio-computed tomography confirmed a 22 × 10 mm-oval mass in the left inguinal region involving common femoral vein. The inguinal region was explored through anterior approach by a vertical incision. A large femoral vein aneurysm sac was incised longitudinally and, after resection, the vein wall was repaired primarily. An oral anticoagulant containing warfarin was prescribed for 6 months. The patient was discharged on the 4th post operative day. Further follow-up duplex ultrasonography investigations showed patent femoral vein without thrombotic. Additionally, no dilatation of the operated vein segment has been observed in the follow-up ultrasound studies

III. Discussion

The first publication on venous aneurysm was in 1915 by Osler, who reported a case of axillary vein dilatation.³ Later, in 1928, Harris^{4,5} described a 5-year-old child with jugular vein aneurysm. Abbott³ described a

case of superior vena cava aneurysm in 1950. In 1968, May & Nissel were the first to describe the PVA,³ and Dahl et al. were the first to report complications of PVA.³

There are no precise criteria as to vessel diameter to define a venous dilatation as aneurysmal. McDevitt proposed that such definition would be correct in case of a dilatation twice the normal size⁶ of the vessel. Differently from the arterial system, venous system aneurysms are rare and occur at any age, irrespective of gender.³ Legnani⁷ reported that PVA are the most frequent in the lower limbs, followed by great saphenous vein aneurysms and common femoral vein. Most venous aneurysms are likely to have a congenital origin,⁸ but they may also be a result of degenerative changes or local inflammatory processes,⁹ such as trauma and infection. They could also be associated with varicose veins, due to valve insufficiency, obstructive process or arteriovenous fistula.⁴ Due to structural changes, venous aneurysms have two forms: fusiform or saccular. Such differentiation is important to determine the surgical strategy. Saccular PVA account for 75% of cases.¹⁰ A wide variety of clinical presentations of venous aneurysms is described in the literature.¹¹ Most cases of peripheral venous aneurysms only cause local discomfort,¹² therefore they are asymptomatic, with incidental diagnosis.¹¹ Peripheral venous aneurysms can be detected by presence of soft subcutaneous mass, which disappears with limb elevation and increases with the Valsalva maneuver.¹³ Suspicion will be confirmed by vascular ultrasound, current method of choice¹⁰ for the definitive diagnosis; ascending phlebography and magnetic nuclear resonance are restricted to cases of abdominal or thoracic venous aneurysms.^{14,15} The most common complications in venous aneurysms are deep venous thrombosis, thrombophlebitis and recurrent pulmonary embolism.⁴ Surgery is the base of PVA treatment. In patients with thromboembolic complications, surgical treatment is mandatory and considered as the method of choice, only limited by clinical conditions,^{4,3} since anticoagulation alone in patients with pulmonary embolism is inefficacious, with high recurrence rates (80%).⁵

Tangential aneurysmectomy and lateral venorrhaphy is the most widely used surgical method and has been recommended for saccular aneurysms, but it can also be performed in fusiform aneurysms, as in our case. The technique was described by Aldridge et al.¹⁶ and has good results. Aneurysm resection and venous reconstruction are recommended when tangential aneurysmectomy cannot be performed due to risk of permanence of disease segment in the venous wall. This would be a more appropriate conduct for our patient; however, since there was no autogenous substitute for venous reconstruction, choice was for tangential aneurysmectomy. Graft reconstruction was rejected due to increased risk of occlusion. The fibrinolytic treatment has been used as initial part of the treatment in patients with pulmonary embolism. In the literature there are few cases treated by fibrinolysis before surgical repair.⁸ This therapy reduces or eliminates the thrombi that may occasionally be inside the aneurysm, which could facilitate surgical repair.

VI. Conclusion

Venous aneurysms are unusual vascular malformations that occur equally between the sexes and are seen at any age. They are often misdiagnosed, especially if located near the inguinal region. Thromboembolic complications are common in aneurysms involving the deep system, although in this series we found a lower incidence of thromboembolism from popliteal aneurysms than previously reported. Once clinically suspected, venous aneurysms are easily diagnosed using CFD, phlebography, or MRI. In addition, the use of continuous-wave Doppler can be most helpful in diagnosing venous aneurysms, especially in the inguinal region. With the exception of the internal jugular vein aneurysms, the majority of venous aneurysms should be managed surgically to avoid their potential morbidity and, sometimes, death. Operative intervention may consist of tangential excision and lateral venorrhaphy or excision with or without interposition grafting.

References

- [1]. Volteas SK1, Labropoulos N, Nicolaidis AN. The management of venous aneurysms of the lower extremities. *Panminerva Med.* 1998;40(2):89-93.
- [2]. Gabrielli R, Rosati MS, Vitale S, Mellarelli M, Siani A, Chiappa R, et al. Pulmonary emboli due to venous aneurysm of extremities. *Vasa.* 2011; 40, (4):327-32.
- [3]. Castle JM, Arous EJ. Femoral vein aneurysm: a case report and review of the literature. *Cardiovasc Surg.* 1995;3:317-9.
- [4]. Ekim H, Gelen T, Karpuzoglu G. Multiple aneurysms of the cephalic vein. A case report. *Angiology.* 1995;46:265-7.
- [5]. Grice GD 3rd, Smith RB 3rd, Robinson PH, Rheudasil JM. Primary popliteal venous aneurysm with recurrent pulmonary emboli. *J Vasc Surg.* 1990;12:316-8.
- [6]. McDevitt DT, Lohr JM, Martin KD, Welling RE, Sampson MG. Bilateral popliteal vein aneurysms. *Ann Vasc Surg.* 1993;7:282-6.
- [7]. Legnani G, Mettini L, Bonfioli C, Motta F. Venous aneurysm of extremities: a case report and literature review. *Cardiovasc Surg.* 1995;3:445-6.
- [8]. Dawson KJ, Hamilton G. Primary popliteal venous aneurysm with recurrent pulmonary emboli. *J Vasc Surg.* 1991;14:437.
- [9]. Friedman SG, Krishnasastri KV, Doscher W, Deckoff SL. Primary venous aneurysms. *Surgery.* 1990;108:92-5.
- [10]. Tambyraja AL, Moores C, Chalmers RT. Primary popliteal venous aneurysm. *J Vasc Surg.* 2004;40:830.
- [11]. Perler B. Venous aneurysm. An unusual upper-extremity mass. *Arch Surg.* 1990;125:124.
- [12]. Gillespie DL, Villavicencio JL, Gallagher C, et al. Presentation and management of venous aneurysms. *J Vasc Surg.* 1997;26:845-52.

- [13]. Calligaro KD, Ahmad S, Dandora R, et al. Venous aneurysms: surgical indications and review of the literature. *Surgery*. 1995;117:1-6.
- [14]. Kassabian E, Coppin T, Combes M, Julia P, Fabiani JN. Radial nerve compression by a large cephalic vein aneurysm: case report. *J Vasc Surg*. 2003;38:617-9.
- [15]. Schatz IJ, Fine G. Venous aneurysms. *N Eng J Med*. 1962;266:1310-2.
- [16]. Aldridge SC, Comerota AJ, Katz ML, Wolk JH, Goldman BI, White JV. Popliteal venous aneurysm: report of two cases and review of the world literature. *J Vasc Surg*. 1993;18:708-15. .



Swelling In Left Inguinal Legion



FIG 1 Grayscale ultrasound showing focal dilatation of common femoral vein in its proximalpart.

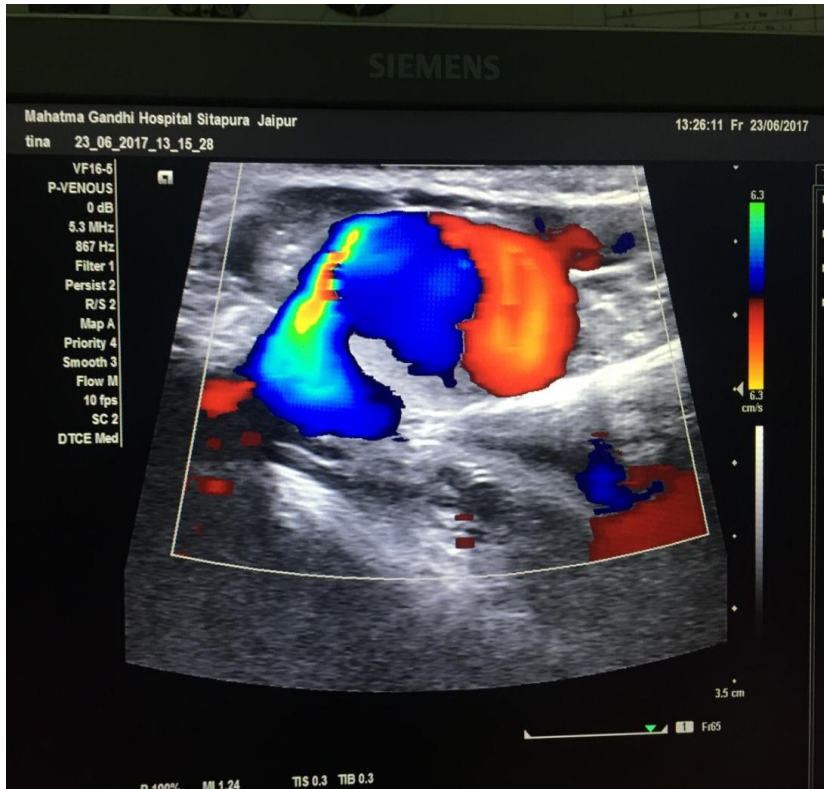


FIG 2 Color-Doppler trasonography revealed a 21 × 9.9 mm oval mass in the left inguinal region.

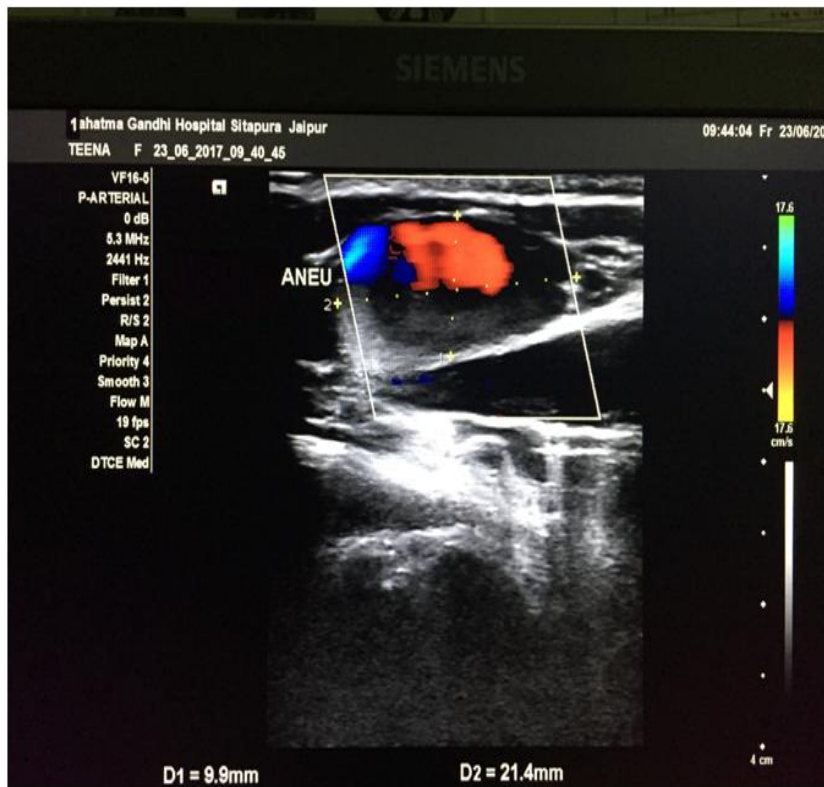


FIG 3 Color Doppler Showing common femoral vein aneurysm.

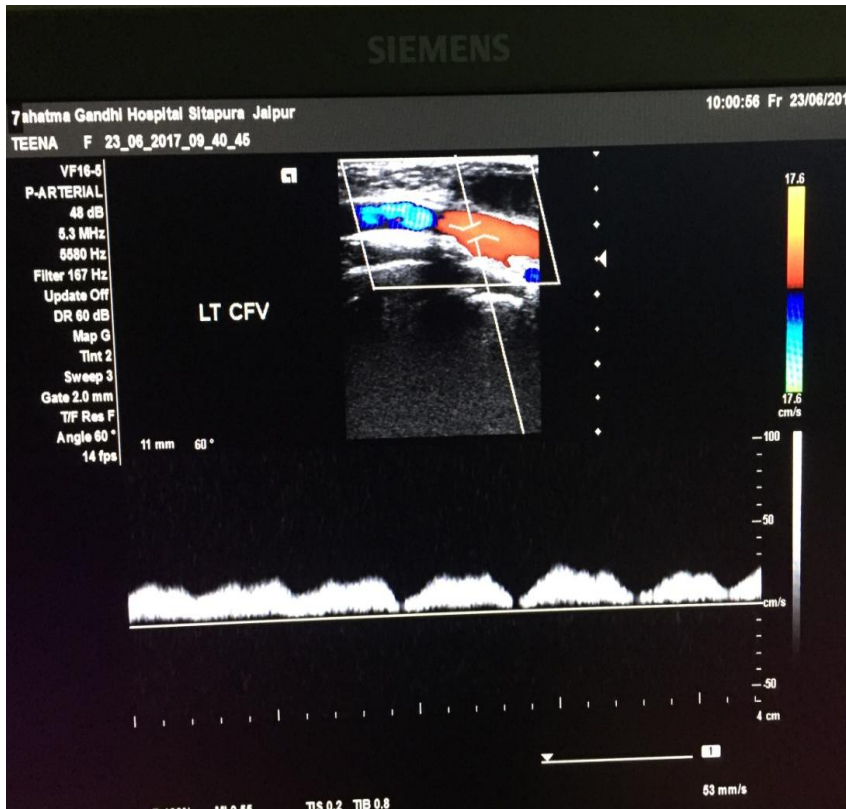


FIG 4 Pulsed Doppler ultrasonography show venous wavefor pattern in CFV.

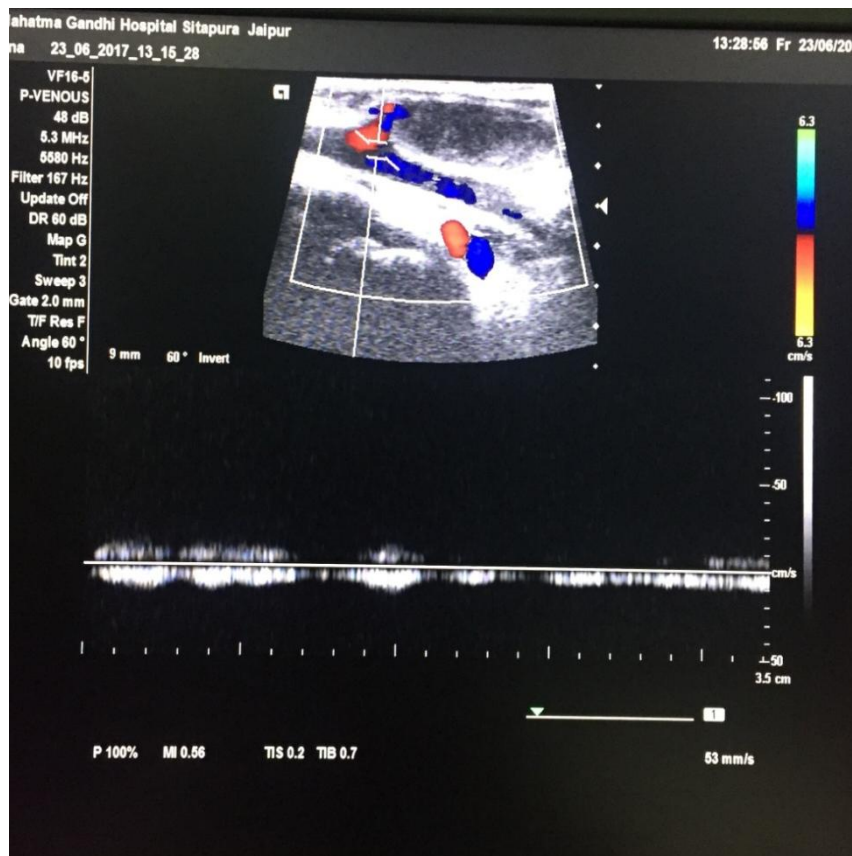


FIG 5 Swelling in left inguinal legion which increases on valsalva.

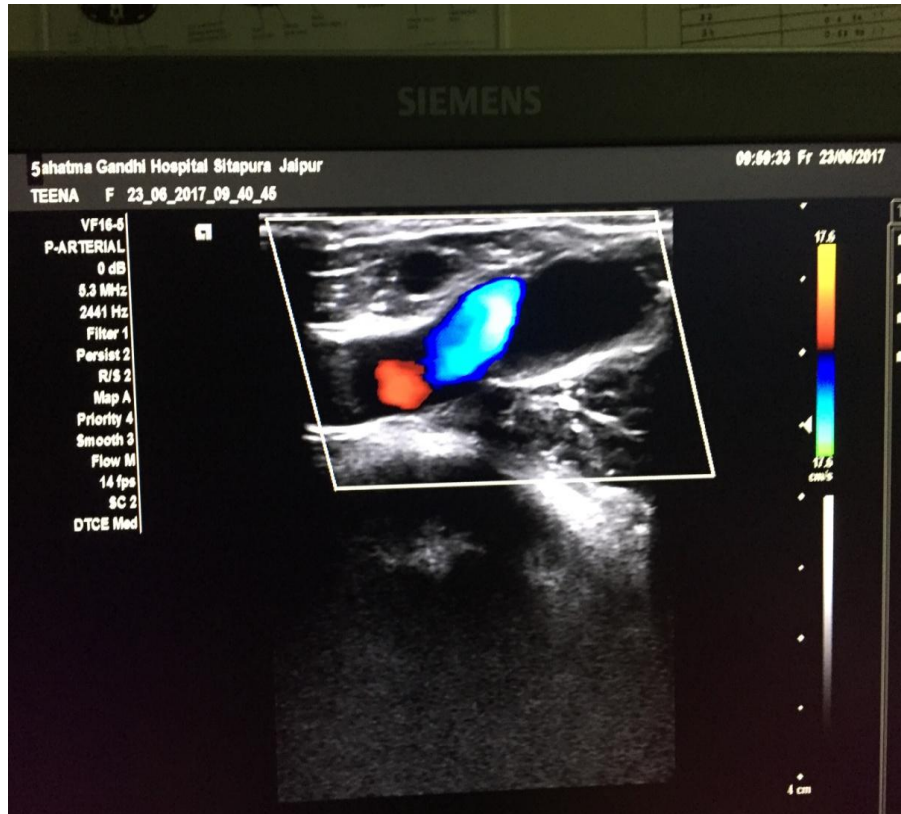


FIG 6 Color Doppler Showing common femoral artery and arterial waveform pattern.

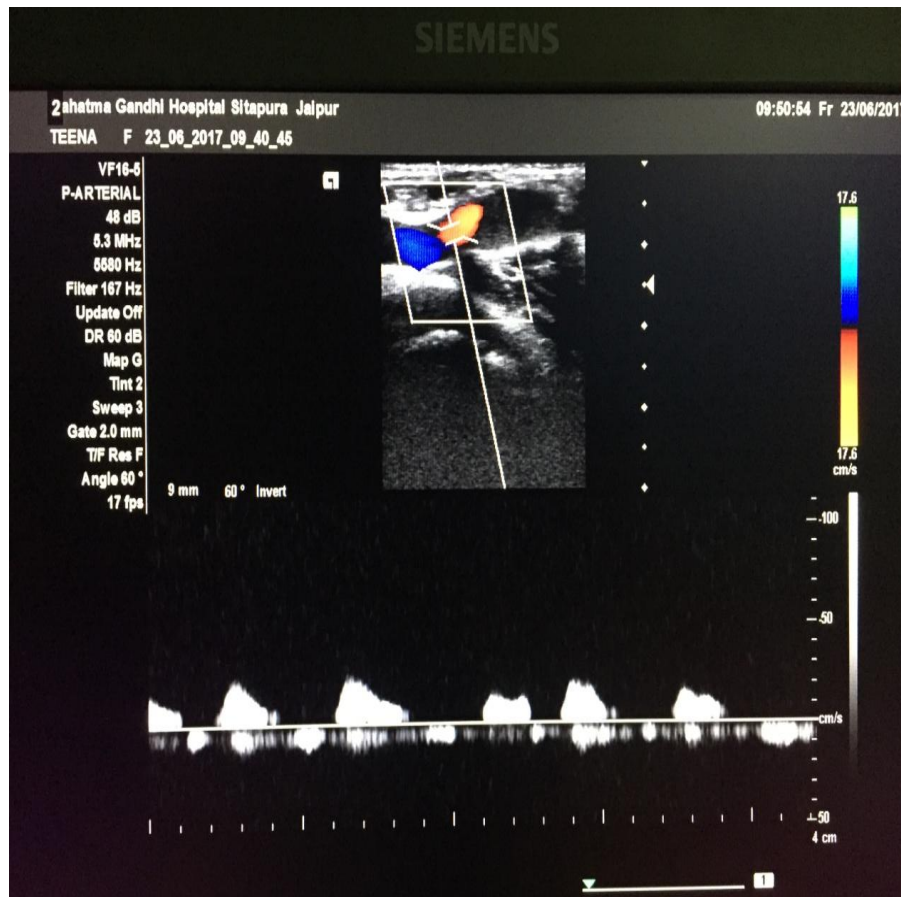




FIG 7 CT Angiography showing communication of swelling with left common femoral vein



FIG-8 CT Angiography Coronal View Showing Filling Of Aneurysm With Common Femoral Vein.



Fig -9ct Angiography Venous Phase Showing Filling Of Aneurysm With Common Femoral Vein



FIG 10 CT Angiography in venous phase showing filling of aneurysm by common femoral vein.

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