Case Report

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Superficial venous aneurysm of the great saphenous vein: a case report

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ABSTRACT

Superficial venous aneurysms are rare clinical entity. They can remain asymptomatic to be detected incidentally or can present with pain. They can be readily diagnosed by duplex ultrasonography or discovered only during surgical exploration. The objective of this clinical case report is to highlight this rare occurrence and avoid misdiagnosis. A 69-year-old male presented at our tertiary care hospital with complaints of pain and swelling which was gradually increasing in size. Initially it was misdiagnosed to be femoral hernia, and the diagnosis of Great Saphenous Vein aneurysm was made following duplex ultrasonography. Following which, the patient underwent successful surgical excision.

Keywords: Great saphenous vein aneurysm, Lower extremity superficial venous aneurysm, Femoral hernia

INTRODUCTION

Unlike arterial aneurysms, venous aneurysms are a much rare abnormality.¹ Although, found in all major veins of the body, venous aneurysm are uncommon in lower extremities and can be divided into superficial and deep venous aneurysm.^{2,3} Of which, superficial venous aneurysms of the lower extremities are rare and their clinical significance has been poorly defined.⁴ Being this rare, it can be misdiagnosed as soft tissue mass or as inguinal or femoral hernias.⁵

In this article, we present a rare case of Great saphenous vein (GSV) aneurysm on left side which presented as painful groin swelling, and was initially misdiagnosed as femoral hernia. Duplex ultrasound was done to confirm the diagnosis. The patient underwent successful surgical treatment. Its clinical presentation, diagnosis and management have been discussed.

CASE REPORT

A 69-year-old male presented to our General Surgery OPD at tertiary care hospital with complaint of growing mass over medial aspect of left upper thigh since 1-1.5 months.

He was asymptomatic before that, and then he noticed a small swelling over medial aspect of left upper thigh. The swelling gradually increased in size and presented currently with size of a lemon. He also complained of localized pain and discomfort while walking. On presentation, the patient was vitally stable. He had no history of trauma, fever, weight loss or similar swelling in other part of body. His family history was not significant. On local examination, there was single 3×4 cm swelling, 5 cm below and lateral to pubic tubercle on left side (Figure 1). Palpation revealed a single, tender, non mobile, non reducible swelling, with hard consistency and normal overlying skin. There was no impulse on coughing. Testicular examination was normal. Based on these clinical findings, a differential diagnosis of lipoma, inflammatory mass, sebaceous cyst, hematoma, soft tissue tumour, femoral hernia, nodal mass, vascular malformation, saphena varix was made.

Routine blood reports were normal.

USG of local part showed a large, well defined, oval, and thick walled, out – pouching of 3.3×3.1×3.1 cm arising from left great saphenous vein and having no vascular flow on Color Doppler Flow Imaging (CDFI). Hypoechoic area

was noted within the lumen of this saccular out-pouching; suggesting thrombotic occlusion. Few subcentimetric sized lymph nodes were seen in left inguinal region, with largest measuring 1.5×1.5 cm.



Figure 1: Round swelling over medial aspect of left thigh, below left groin crease.



Figure 2: USG showing saccular thrombosed GSV aneurysm.

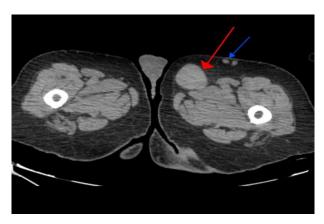


Figure 3: CT-Scan showing evidence of round, well defined, isodense soft tissue in anterior compartment (red arrow) and varicose veins (blue arrow).

These findings favoured possibility of thrombosed saccular aneurysm arising from the left GSV (Figure 2).

CT-Scan showed evidence of round, well defined isodense soft tissue in anterior compartment of inguinal region with clear fat planes between adjacent structures suggestive of aneurysmal dilatation (Figure 3).



Figure 4: Intraoperative finding after opening the skin.

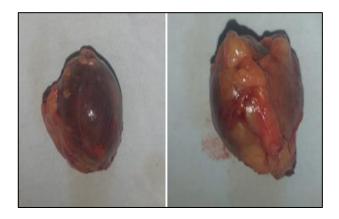


Figure 5: Gross specimen of thrombosed saccular aneurysm measuring approximately 4×3×3 cm.

Patient was explained about surgery. All routine protocols were followed and left femoral block was given. A vertical incision was made over the swelling. Following which, the mass was identified and excised (Figure 4,5). The thrombosed GSV was traced up to Sapheno-Femoral Junction (SFJ) and ligated. The distal part of GSV was also ligated. After thorough wash, the wound was closed in layers after achieving hemostasis. Histopathology of excised GSV aneurysm was not sent. Post-operative course was uneventful and the patient was discharged on the next day.

DISCUSSION

Aneurysms are abnormal dilatations of the blood vessels and occur most commonly in arteries, but they can also be seen in veins.¹ The traditional definition of a venous aneurysm is dilation of a venous segment 1.5 times the diameter of the non varicose or normal segments proximal and distal to the diseased segment in question. But, a venous aneurysm can be best described as a solitary area

of venous dilatation which communicates with the main venous structure by a single channel, and has no association with an arterio-venous communication or a pseudo aneurysm. Most importantly it should not be contained within a segment of a varicose vein.⁵ Venous aneurysm are rare, but have been reported in all the major veins of the body which includes intra- and extracranial veins, veins in the extremities, the superior vena cava and in the spleno-portal and common iliac systems.² The most common location is in the lower extremities, and the most frequent vessel is the popliteal vein- deep vein. Saphenous vein- superficial vein, is the next commonly affected vessel.⁶

Superficial venous aneurysms of lower extremities are considered rare and their clinical significance is poorly defined.⁴ Patients with superficial venous aneurysms frequently manifest pain, edema, and a mass in the affected extremity.³ Depending on their location, these aneurysms can be confused with hygromas, or even inguinal or femoral hernias.⁷ Physical examination may identify a superficial venous aneurysm because the mass is more resistant to compression in the dependent position compared with when the extremity is elevated. In addition, physical examination should identify any sequel of arteriovenous fistula, with imaging studies performed if needed.⁵ Duplex ultrasonography can definitely make the diagnosis.8 Saphenous vein aneurysms have been diagnosed during operative procedures for what were thought to be varicose veins preoperatively. 6 Diagnostic confirmation can be performed using duplex ultrasonography, computed tomography, or magnetic resonance imaging. Venography is not indicated for primary diagnosis. 9,10

The pathogenesis of venous aneurysms is unknown, but various mechanisms have been implicated in its formation which includes hemodynamic changes, arteriovenous fistula, infection, trauma, inflammatory process, congenital weakness of the venous wall and degenerative changes. Primary or congenital, aneurysms are caused by a weakness in the venous wall secondary to inherited conditions such as connective tissue disorder. Secondary or acquired, venous aneurysms arise from aetiologies such as trauma, inflammation, degenerative process, mechanical stress and venous hypertension. A thorough history should be elicited from patient, inquiring about family history of aneurysmal or connective tissue disease and any recent or remote trauma to the region.

Pulmonary embolism is thought to be less common in superficial than deep venous aneurysms. Perhaps, this occurs because of vigorous emptying of the deep system associated with contraction of the muscular venous pump. Such rapid emptying has been hypothesized to play a role in dislodging thrombus that may accumulate in deep venous aneurysms. Rupture is a noted complication in arterial aneurysms, but is rare in those of the venous system.⁴

Treatment of venous aneurysms is performed on a case-by-case basis because there are few evidence –based studies to guide treatment. In general, conservative management is indicated for small and /or asymptomatic aneurysms. 14 Surgical treatment for large aneurysms or those associated with complications consists of tangential aneurysmectomy, aneurysm resection with primary anastomosis, aneurysm resection with interposition grafting, or ligation of the affected venous segment. There is no standard endovascular treatment, but endovascular modalities have been successfully implanted in select patients. 10

CONCLUSION

Great Saphenous Vein aneurysms being a rare clinical entity can be misdiagnosed as soft tissue mass or femoral hernia. They rarely have clinical significance and sometimes they can be an incidental finding. They are important differential diagnosis of subcutaneous mass and groin hernia. Diagnosis is made my duplex ultrasonography. Treatment is by simple excision with the ligation of feeding vessels.

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