

# THROMBOSED ANEURYSM OF THE SMALL SAPHENOUS VEIN THROMBOSED ANEURYSM OF THE SMALL SAPHENOUS VEIN

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## Abstract

**Introduction:** Isolated venous aneurysm is defined as an focal vascular dilatation that communicates with normal size venous structure through a single channel, and it should not have any association with an arteriovenous communication or a pseudoaneurysm. Venous aneurysms may rarely be thrombosed. Here we present a female patient with thrombosed venous aneurysm of the small saphenous vein.

**Case Report:** A 49 year-old woman was admitted to our hospital with complaints of a growing mass at the left popliteal region during the last 18 months. Physical examination revealed a firm subcutaneous mass on the left popliteal region. Color flow duplex imaging (CFDI) confirmed thrombosed saccular venous aneurysm of the small saphenous vein extending to the saphenopopliteal junction (SPJ) that measured approximately 3.2 cm in diameter. Surgical intervention was performed under spinal anesthesia. The aneurismal mass was relatively thin walled and was occluded by blood clot. Her postoperative course was uneventful and her symptoms resolved. Histologic findings were consistent with venous aneurysm.

**Conclusion:** In order to prevent the risk of deep venous thrombosis and even pulmonary embolism, we think that thrombosed venous aneurysms close to the saphenopopliteal junction should be operated without delay.

**Keywords:** Venous Aneurysm, Thrombosis, Small Saphenous Vein.

## Introduction

An aneurysm is defined as a focal dilatation of a blood vessel. This term is most commonly used to dilatation of arteries. However, aneurysmatic dilatations may occur in any part of the vascular system including veins (1). Isolated venous aneurysm is defined as an focal vascular dilatation that communicates with normal size venous structure through a single channel, and it should not have any association with an arteriovenous communication or a pseudoaneurysm (1,2).

Turbulent flow in the saccular aneurysmal sac represents a higher risk of thrombus formation (3). Undoubtedly, hereditary thrombophilic risk factors may contribute to the formation of thrombus. Although many venous aneurysms of the great saphenous vein have been reported, thrombosed aneurysms of the small saphenous vein extending to the saphenopopliteal junction (SPJ) are quite rare. Here we present a female patient with thrombosed venous aneurysm of the small saphenous vein.

## Case Report

A 49 year-old woman was admitted to our hospital with complaints of a growing mass at the left popliteal region during the last 18 months. She also referred localized pain and itching. Physical examination revealed a firm subcutaneous mass on the left popliteal region. Direct compression did not reduce its size. Bruits or pulsation were not present. Peripheral arterial pulses were also palpable. She had no past history of trauma. Informed consent was obtained.

Laboratory tests, electrocardiogram and chest radiograph all yielded normal. In addition, she was also screened for inherited thrombophilia. Factor V Leiden (FVL) and prothrombin gen (PT G20210A) polymorphisms were not found. Color flow duplex imaging (CFDI) confirmed thrombosed saccular venous aneurysm of the small saphenous vein extending to the SPJ that measured approximately 3.2 cm in diameter.

Surgical intervention was performed under spinal anesthesia. The posterior approach was performed to

expose the aneurismal mass. Adhesion of the mass to the surrounding tissue slight and was easily peeled off (Figure 1). The aneurysmal mass was relatively thin walled and was occluded by mural thrombus. Following heparin (5000 UI) administration, a vascular clamp was placed tangentially across the SPJ to avoid thromboembolic event and the aneurysm was excised. The distal end of the vein was ligated and SPJ was closed with 7-0 polypropylene suture. Her postoperative course was uneventful and her symptoms resolved. She is currently asymptomatic 32 months after surgery.

Histopathological examination demonstrated a localized structural alteration. Aneurysmal segment's wall was thinner than the wall of the normal venous segment. Organized thrombus was observed along the intimal surface of the aneurysm.



**FIGURE 1.** Intraoperative view of the thrombosed small saphenous vein aneurysm.

### Discussion

Venous aneurysms have been detected in all major veins (2). In differential diagnosis of venous aneurysms, hemangiomas, soft tissue masses, hygromas, hernias, vascular malformations and especially varices should be considered. Most venous aneurysms located in the superficial veins are palpable and easily compressed (1). However, as seen in our case, thrombosed superficial venous aneurysms could not be compressed.

Although various imaging techniques are used in the diagnosis of venous aneurysms, CFDI is usually sufficient for diagnosis (4). This noninvasive technique, which provides information about the hemodynamic

status of the limb, can easily be repeated for control examinations. Furthermore, it provides information about the presence and extent of thrombus within the lumen with a sufficient functional assessment of venous circulation, as seen in our patient.

Although the cause of venous aneurysm is unclear, reflux, venous hypertension, trauma, inflammation and hereditary factors may be possible contributing factors (5). Furthermore, It has been suggested that the increased expression of selective matrix metalloproteinases, and structural changes in the venous wall may be related to the pathogenesis of venous aneurysms (6).

Venous aneurysms located in lower extremities are prone to embolization since the thrombus within the aneurysmal sac may be forcefully expelled during muscle contraction (7). Furthermore, the underlying thrombophilic risk factors may contribute to thrombus development in venous aneurysms. However, thrombophilic risk factors (FLV and PT G20210A) were not detected in our patient.

A popliteal vein aneurysm may lead to severe life-threatening complications, such as pulmonary embolism and other thromboembolic episodes, if untreated (8). Similarly, we think that thrombosed superficial venous aneurysms extending to the saphenofemoral or saphenopopliteal junction may lead to these complications. The anticoagulant therapy may be insufficient to prevent pulmonary embolism and other embolic complications. Therefore, surgical therapy should be suggested in all patients with venous aneurysms (9).

After the excision of the aneurysms of the deep venous system, it is necessary to ensure venous continuity. If possible, primary repair should be preferred after resection of deep vein aneurysms. Interposition grafts should be used if primary repair is not possible. Superficial venous system aneurysms can usually be operated by simple ligation and excision (2).

### Conclusion

In order to prevent the risk of deep venous thrombosis and even pulmonary embolism, we think that thrombosed venous aneurysms close to the saphenofemoral or saphenopopliteal junction should be operated without delay.

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