

Varicose veins due to reflux in a tortuous sartorius muscle vein



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ABSTRACT

In daily phlebology practice, duplex ultrasound may sometimes reveal unusual pathways of reflux. A 46-year-old woman presented with heaviness and pain at the medial side of the left thigh after exercise. A tortuous intramuscular course of a large refluxing vein was seen in the sartorius muscle in connection with a femoral vein perforator cranially and the below-knee great saphenous vein distally. Magnetic resonance imaging confirmed these findings. Treatment consisted of a combination of foam sclerotherapy, radiofrequency ablation, and phlebectomies. (*J Vasc Surg: Venous and Lym Dis* 2019;7:448-9.)

Keywords: Varicose veins; Sartorius muscle; Duplex ultrasound

Routine investigation of patients with varicose veins with duplex ultrasound (DUS) has become the basis for almost every treatment in phlebology. Some patients present with atypical complaints, and thorough DUS may sometimes reveal unusual findings, as illustrated in this case. Atypical complaints and thorough investigation lead to the right diagnosis. The patient provided written consent for publication of this case.

CASE REPORT

A 46-year-old woman presented with complaints of heaviness and pain in her left leg. Her complaints increased during the menstrual period. She experienced not only heaviness but also pain above the knee at the medial side of the thigh immediately after exercise. Medical history revealed ambulatory phlebectomies of varicose veins in both legs twice, with little or no effect on her prior complaints. There was no history of deep or superficial venous thrombosis, erysipelas, or trauma. Since birth, she had a port-wine stain on the medial side of the left thigh. Other complaints consisted of a feeling of swelling, calf cramps, and restless legs, on the left side more than on the right.

We saw a healthy woman of average height and body weight with multiple reticular veins and telangiectasias on both legs and a varicose tributary on the left medial calf down to the medial malleolus. Slight edema of the ankle and a corona phlebectatica paraplantarum but no skin changes were found.

DUS investigation of the left leg revealed a normal deep venous system and no signs of obstruction, post-thrombotic changes, or incompetence, apart from segmental reflux in the femoral vein at midthigh. At this level, a large refluxing perforating vein was seen, which connected with a tortuous vein coursing within the sartorius muscle with reflux >1 second after manual calf squeeze and high peak reflux velocity of 40 cm/s. Just below the knee, this tortuous vein connected with the distal great saphenous vein (GSV), causing a significant increase in diameter of the below-knee GSV to 6 mm. The above-knee GSV was not incompetent with a diameter of 4 mm. The incompetent GSV below the knee further gave rise to the clinically visible incompetent tributary at the medial side of the calf. The remaining superficial venous system was completely normal. Additional transabdominal DUS did not reveal any abnormalities at the ilio caval level or obvious pelvic vein incompetence.

Because of the unusual DUS findings at thigh level and to exclude the presence of an extratruncular venous malformation, magnetic resonance imaging was performed, which completely confirmed the DUS findings (Fig).

We concluded that this patient had an unusual anastomosis between the deep and the superficial venous systems, consisting of an incompetent femoral vein perforator connecting with a tortuous venous plexus-like large vein in the left sartorius muscle and eventually connecting with the GSV below the knee. The advanced Clinical, Etiology, Anatomy, and Pathophysiology (CEAP) classification of the left leg of this patient was defined as follows: C_{1,2,3,S}, E_{p(c?)}, A_{s,d,p}, P_{r3,5,13,17}.

Treatment consisted of a combination of foam sclerotherapy of the long tortuous intramuscular vein, radiofrequency ablation of the refluxing segment of the GSV, and phlebectomies of the varicose tributary below the knee. Six weeks later, although the tortuous intramuscular vein was not completely occluded, reflux appeared to be abolished. The treated segment of the GSV was fully obliterated. At routine follow-up after 18 months, the patient remained almost completely free of symptoms. On DUS examination, only a small segment of the vein in the sartorius muscle was visible without reflux.

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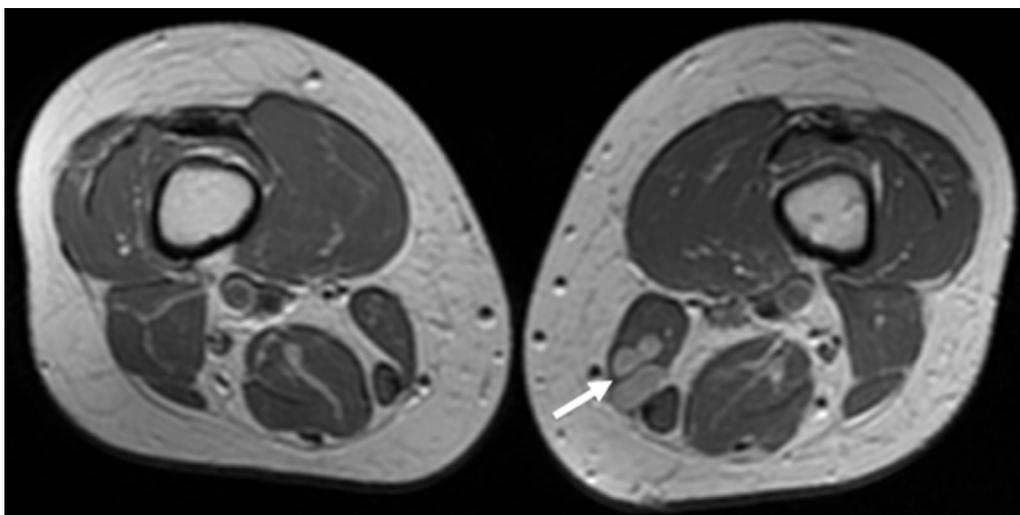


Fig. Bilateral magnetic resonance imaging above the knee shows large veins in the left sartorius muscle (arrow).

DISCUSSION

We describe a rare case of tortuous intramuscular course of a large refluxing vein in the sartorius muscle, connecting with an incompetent perforating vein of the femoral vein proximally and with the GSV below the knee distally, causing local pain at the medial thigh after exercise and varicose veins below the knee. This is an unusual connection between the superficial and deep venous systems, presenting as a venous plexus-like intramuscular vein. In view of the presence of a port-wine stain, this vein could also be considered a truncular venous malformation. It should be differentiated from the more frequently encountered intramuscular venous malformations, which are typically extratruncular "low flow" venous malformations.¹ These do not present as refluxing veins but rather as unclearly delineated smaller and larger venous structures that do not have the course of a normal venous vessel. Although the patient also had a port-wine stain on the affected leg, there were not enough additional arguments to consider a Klippel-Trénaunay syndrome.²

The presence of a large tortuous vein within the sartorius muscle is extremely rare. The sartorius muscle originates from the anterior superior iliac spine and part of the notch between the anterior superior and inferior iliac spine. It runs obliquely across the upper and anterior part of the thigh, then passes behind the medial condyle of the femur to end in a tendon, which joins the pes anserinus at the superior part of the medial tibia. The sartorius muscle receives blood from the superficial femoral artery and drains its venous blood into the femoral vein.

Although we are familiar with the presence of large intramuscular veins in the calf muscles (gastrocnemius

and soleus), such veins have not been described sonographically in muscles of the thigh. Only in an old report of cadaver dissections by Sherman³ was this kind of vein described as a variation of the "subsartorial vein." In addition, perforating veins of the femoral vein seem to have a predilection for intermuscular septa⁴ and usually connect directly with the GSV above the knee without having an intramuscular course. This exceptional case illustrates that a perforating vein may have a long intramuscular course, which is an unusual variation of the vein responsible for the normal venous drainage of the sartorius muscle. Its successful treatment required a combination of conventional therapies.

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