

The Saphenous compartment: The Saphenous veins are not real superficial veins

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The veins of the limbs are designated in deep and superficial, according to their location with respect of the muscular fascia. Accordingly, Saphenous Veins (SVs) are currently included between superficial veins.

Actually, SVs course close to the muscular fascia, covered by a portion of the “membranous layer of the subcutaneous tissue” (alias, fascia superficialis) designated as “saphenous fascia”. This lamina, which accompanies SVs all along their length, is clearly demonstrated by imaging techniques *in vivo* as well in cadavers.

The saphenous fascia fuses with the underlying muscular fascia at the sides of the SVs, so delimiting a narrow compartment designated as “saphenous compartment”. SVs are anchored to the walls of the saphenous compartment by a connective lamina designated “saphenous ligament”. Besides SVs, the saphenous compartment contains related arteries, nerves, lymphatics and a small amount of fat.

The saphenous fascia stretches SV during muscular contraction thus contributing actively to venous return. Moreover, the saphenous fascia counteracts SVs dilation whereas the saphenous ligament make SVs less prone to tortuosity (dilation and tortuosity are the changes typical of varicose disease). The other superficial veins are surrounded only by an amorphous layer of fat.

These anatomical evidences explain the different behaviour of saphenous veins (interfascial) and their tributaries (epifascial) in the physiology of venous return, in the pathophysiology of varicose disease and finally, in their surgical approach.

Concluding, fascial relationships of SVs make them different, from both the anatomic and clinical points of view from the other vein running in the hypodermis.

The same fascial relationships and topography are for the basilic and cephalic veins.

References

- [1] Caggiati et al. (2002) Nomenclature of the veins of the lower limbs: an international interdisciplinary consensus statement. *J Vasc Surg* 36: 416-22.
- [2] Caggiati (2001) Fascial relationships of the short saphenous vein. *J Vasc Surg* 34: 241-246.
- [3] Caggiati (1999) Fascial relationships of the long saphenous vein. *Circulation* 100: 2547-2549.

Key words

Saphenous veins, saphenous fascia, saphenous compartment.