

The longest vein in the body

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Kaplon A. Small concept dealing with diabetic retinopathy. *J Phlebol Lymphology* 2022;15(1):1-1

ABSTRACT

The Great Saphenous Vein (GSV, alternately “long saphenous vein”) is a large, subcutaneous, superficial vein of the leg. It is the longest vein in the body, running along the length of the lower limb, returning blood from the

foot, leg and thigh to the deep femoral vein at the femoral triangle.

The great saphenous vein originates from where the dorsal vein of the big toe (the hallux) merges with the dorsal venous arch of the foot. After passing in front of the medial malleolus (where it often can be visualized and palpated), it runs up the medial side of the leg.

Key Words: *Common femoral vein; Crockett perforators; GSV thrombosis*

INTRODUCTION

At the knee, it runs over the posterior border of the medial epicondyle of the femur bone. In the proximal anterior thigh three to four centimetres anterolateral to the pubic tubercle, the great saphenous vein dives down deep through the cribriform fascia of the saphenous opening to join the femoral vein. It forms an arch, the saphenous arch, to join the common femoral vein in the region of the femoral triangle at the saphenous-femoral junction.

Several veins join the great saphenous vein, but each of them is not present in every individual. Most of them join it near its junction with the Common Femoral Vein (CFV), at various average distances from this junction:

At the ankle, the great saphenous vein receives branches from the sole of the foot through the medial marginal vein; in the lower leg it anastomoses freely with the small saphenous vein, communicates by perforator veins (Crockett perforators) with the anterior and posterior tibia veins and receives many cutaneous veins; near the knee it communicates with the popliteal vein by the Boyd perforator, in the thigh it communicates with the femoral vein by perforator veins (Dodd perforator) and receives numerous tributaries; those from the medial and posterior parts of the thigh frequently unite to form a large accessory saphenous vein which joins the main vein near the saphenous-femoral junction.

METHODS

Pathology of the great saphenous vein is relatively common, but in isolation typically not life-threatening.

Varicose veins

The great saphenous vein, like other superficial veins, can become varicose; swollen, twisted and lengthened, and generally considered to be unsightly. Varicose veins are not life-threatening and various treatment options are available. However, when the diameter of the vein is too large for the

valves within it to coat completely, the resulting condition, chronic venous insufficiency, can result in skin colour changes in the calf and ulcers that may persist for years if the vein is not ablated.

Thrombophlebitis

The GSV can thrombose. This type of phlebitis of the GSV is usually not life-threatening in isolation; however, if the blood clot is located near the saphenous-femoral junction or near a perforator vein, a clot fragment can migrate to the deep venous system and to the pulmonary circulation. Also it can be associated with, or progress to a deep vein thrombosis which must be treated promptly. So a GSV thrombosis is investigated by ultrasonography to detect if these complications are present.

CONCLUSION

The vein is often removed by cardiac surgeons and used for auto transplantation in coronary artery bypass operations, when arterial grafts are not available or many grafts are required, such as in a triple bypass or quadruple bypass.

The great saphenous vein is the conduit of choice for vascular surgeons, when available, for performing peripheral arterial bypass operations. The saphenous vein may undergo vein graft failure after engraftment, but still it has superior long-term patency compared to synthetic grafts (PTFE, PETE (Dacron)), human umbilical vein grafts or biosynthetic grafts [Omni flow]. Often, it is used in situ (in place), after tying off smaller tributaries and destruction of the venous valves with a device called valvulotome, e.g. Lemaitre’s valvulotome.

Removal of the saphenous vein will not hinder normal circulation in the leg. The blood that previously flowed through the saphenous vein will change its course of travel. This is known as collateral circulation.

The saphenous nerve is a branch of the femoral nerve that runs with the great saphenous vein and can be damaged in surgery on the vein.

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