

Phlebology in 21st century

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Nowadays, it is difficult to have a clear idea of which evolution in our field – Phlebology – will be considered as a *true* advancement or will be disregarded by the selection of experience. However that may be, we have the feeling that a sudden rush of ideas and methods is going on at the beginning of this century.

Phlebology is an old branch of Medicine; its roots are in common with the origin of circulatory physiology, where the venous function represented a mysterious subject solved by Harvey's demonstration (Figure 1).¹ The diffusion of veins pathology is witnessed by the description of ulcer treatment in the ancient Egyptian Ebers papyrus.² Although many (and substantial) contributions during the centuries may be recalled, *modern* phlebology started at the beginning of 20th century by the introduction of an efficient surgical method of eliminating the incompetent great saphenous vein (GSV)³ after the suggestion of Trendelenburgh,⁴ derived by Rima hypothesis⁵ of GSV high interruption when involved in varices. In these same years, Keller³ and Mayo³ published two alternatives methods of GSV avulsion that resulted less successful in the following years but still demonstrated the particular interest on the subject at that time.³

Babcock's method (stripping of the GSV stem), made popular worldwide by T. Myers of the Mayo Clinic,³ dominated the century and till now it is probably the most employed method around the world. Throughout these nearly 100 years, GSV ablation remained nearly unchanged, with few variations for less aggressive purposes: short stripping,⁶ vein invagination,⁷ isolated junction high ligation.⁸

Sclerotherapy proceeded simultaneously/alternatively, most of the active solutions being suggested in the first fifty years of the 20th century.⁹

Five milestones occurring in the second half of the century, which will have a great influence in the future, have to be underlined: i) the Muller's ambulatory phlebectomy¹⁰ (with consequent shifting of surgery toward office setting), ii) the diffusion of ultrasound facilities¹¹ (finally starting to understand what happens to veins circulation), iii) the Franceschi's Conservator ambulatory conservative hemodynamic management of varicose veins (CHIVA) theory¹² (consequence of the former, the beginning of conservative treatments), iv) the *invention* of foam,¹³ especially when a simple method of production has been found,¹⁴ v) the endovascular GSV treatments by radio frequency¹⁵ and laser¹⁶ as an alternative to surgery.

These advancements have been the basis of the new century phlebology evolution, but the

true nature of change, as it probably happens in all history changes, has been the challenging of the (phlebological) leading dogma:¹⁷ all treatments must go through the radical interruption of the saphenofemoral junction (SFJ) and its tributaries.

Several factors concurred and are presented below.

First, outcome studies by ultrasound: a consensus document by Perrin and colleagues¹⁸ and a paper by Fischer and colleagues¹⁹ in 2001 showed a very high recurrence rate of groin dissection and high ligation in the mid (long) term.

Second, the vein ablation by radio frequency and laser that have been spread worldwide in the last 10 years to become the preferred alternative to surgery for many operators. These treatments achieve the closure of the GSV stem, leaving the terminal part of the SFJ open, allowing the drainage of one or more tributaries (epigastric, pudendal), with good results in the midterm.²⁰

Third, the diffusion of foam sclerotherapy, achieving similar (although less favorable) results as radiofrequency (RF) and laser with lower costs and simpler settings.²¹ Here, the terminal part of the SFJ usually remains open as well, being washed out by junction tributaries.

Fourth, some Authors reported good outcomes of saphenectomy without junction disconnection.^{22,23}

Fifth, an ultrasound (US) study of the SFJ showed that not all the terminal valves are incompetent in the presence of a GSV reflux.^{24,25} More refined preoperative US investigation of the junction is mandatory for evaluation of whatever surgical techniques. Currently, no study reports preoperative data on the terminal valve, making the interpretation of surgical results doubtful.

Sixth, CHIVA operators achieved stable results by high ligation of the junction, preserving the junction tributaries and the GSV stem, the blood being redirected through GSV perforators.²⁶

Seventh, isolated phlebectomy of varicosities may reduce the GSV caliber and eliminate reflux.²⁷⁻²⁹

As a consequence, although insufficient groin dissection due to poor surgical skill was considered as the cause of groin (and limb) recurrence for many years and in a plethora of papers, at present time exactly the opposite seems to be true: an excessive dissection may favor neo vascularisation of the groin area.

Challenging the dogmas stimulated new ideas: GSV occlusion by steam as heating mechanism;³⁰ vein endothelial damage by a rotating device before sclero-injection,³¹ GSV occlusion by special glue.³² Furthermore, varicose disease was submitted to outstanding changes. Limbs venous disease stimulated the research of cerebral venous flow as a cause of

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neurological diseases opening a never ending debate.³³ Moreover, new oral anticoagulation agents are promising a better quality of life to thrombotic patients.³⁴ Radiologists became able to produce three dimensional images³⁵ and venous stenting began to be more diffused.³⁶

We, as the *Veins and Lymphatics* journal's group, are willing to spread these novelties together with all the other scientific media involved. We are minor and back in the list of phlebology issues, but we have the feeling of being in the right place at the right moment, using the best diffusion tool, freely accessible by those who have something to say and those who want something to learn.

For the future we expect the following: a varicose veins cause explanation; an evolution of GSV incompetence treatment patient-oriented and effective from a pharmaco-economic point of view, possibly simple and office-based; compression devices that patients are happy to put on; new treatments of lymphatic disorders; an open mentality avoiding dogmas; new technologies possibly less expensive than those going to be replaced.

As always, time and evidence will decide what will be a cornerstone in our practice, what will be forgotten (and probably reinvented at other times), what will be juts helpful somehow. Anyway, what is sure is that *Veins*

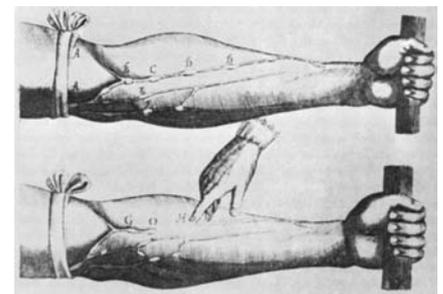


Figure 1. Harvey's demonstration of venous valves.

and Lymphatics will keep open its eyes to witness these events.

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