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## **CHIVA diffusion is now possible, even towards “normal” phlebologists**

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Great Saphenous Vein (GSV) conservative treatment is interesting because reduces the costs, saves a vessel used in bypass treatments, maintains the normal leg draining system, reduces recurrences.

Conservative GSV surgery may be done in several ways as described recently in two open access issues produced by JTAVR (Journal of Theoretical and Applied Vascular Research).<sup>1</sup>

Unquestionably, CHIVA (Cure Hemodynamique de l'insuffisance Veineuse en Ambulatoire) is the most identified method for saphenous conservation; Claude Franceschi, the inspiring author of this treatment, in 1988 published a small book, printed in handwritten italics, where a simplified operative strategy for reflux hypertension elimination was suggested.<sup>2</sup> Based on limited targeted veins ligations in local anesthesia, it needed an intensive pre-operative Ultrasound Duplex assessment, not within reach at that time (but nowadays largely diffused). For this reason and for being completely opposite to the current saphenous ablation treatment modalities in times of continuous ablation gadgets suggestions, CHIVA did not find universal agreement, although maintaining an important supporter's community.

In facts, astonishing for the surgical community, the reflux was identified by several possible shunts (18 types have been theorized; TEUZPITZ Shunts Classification by CHIVA team, 2002);<sup>3</sup> reversed saphenous flow was not considered pathologic; perforators were helpful; saphenous could regain competence (and other strange rules suggested).

As the time passed, ultrasound investigations spread rapidly, so that at least a basic understanding of Duplex application to assess varicose extension and origin is now well-established in phlebologists' work. Interestingly, a significant number of the validated tools generally utilized in Duplex analysis at present derive from the CHIVA experience: i) standing position for reflux assessment; ii) activation maneuvers; iii) the eye sign for Saphenous stems identification; iv) different networks (N2 and N3)

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distinction; v) the alignment sign for AASV identification; vi) perforating veins characterization; vii) the difference between axial and non-axial reflux.

The problem of needing a particularly high understanding of venous ultrasound analysis, which was initially requested for CHIVA application, is becoming less important as people learn more basic skills. Naturally there is no doubt that an Ultrasound expertise is of paramount importance for a deeper knowledge of hemodynamic, for scientific deepening, for theoretical speculation and clinical progress; however, a correct approach to this conservative method is within reach of normally trained phlebologists.

Furthermore, clinical experience demonstrated that CHIVA conservative cure, from the surgical point of view is finally reduced to two limited operation phases: tributaries phlebectomy (or tributary disconnection preferred by “purists”), and junction interruption when needed (crossotomy).

Taking these premises into account, I wrote a review paper titled CHIVA FOR DUMMIES,<sup>4</sup> in publication in the Phlebology Journal, trying to underline a new perspective for CHIVA saphenous conservation policy, freed from the “difficulty and the long course apprenticeship myths”.

According to my simplification suggestion, understood that we process cases with Great Saphenous Veins incompetence, the first step to deal with is the direct avulsion of varices, *i.e.* the refluxing N3 network omitting any saphenous manipulation. Phlebectomy is the easiest and most effective method employing a simple local infiltration anesthesia, micro incisions and immediate ambulation, in an office setting. When a radical conservative attitude is preferred, like CHIVA radical proponents suggest, a disconnection (section and flush ligation) of the dilated tributaries from the saphenous axis is preferred.

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As a result, we can obtain two different hemodynamic situations:

- i) Saphenous reflux cessation: if the perforator acting as a re-entry of the retrograde flow is centred on the eliminated tributary. No saphenous correction is then necessary.
- ii) Saphenous reflux persistence: if a re-entry perforator is centred on the saphenous axis itself, reflux will not cease after phlebectomy as the shunt is not interrupted. Junction interruption is then necessary.

The two functional possibilities may be foreseen by the Reflux Elimination Test.<sup>5</sup>

Junction interruption is the second step: it should be done by crossotomy (flush ligation and section preserving the collaterals), so maintaining the drainage of the Junction's tributaries. This choice tends to avoid collaterals drainage hindrance (like in traditional crossotomy) with consequent revascularization induction, but also is going to allow a limited reduced flow in the saphenous channel so maintaining its function.<sup>6</sup>

Delaying the possible second step (from two to six months in relation to opportunities) will select which cases need junction's surgery: valve incompetence has to be diagnosed when a retrograde flow lasting longer than 0.5 s is elicited by both calf squeezing / release and Valsalva maneuvers, with the patient standing.<sup>7</sup> In fact, it has been evidenced that around half of patients with varicose veins with GSV reflux have a competent terminal valve; when incompetent, the valvular complex may benefit from the GSV caliber reduction following phlebectomy, regaining its function; even in incompetence persistence, the diastolic flow may be reduced after the first step. Therefore, the need of the second step may be appreciably reduced or further delayed.

In particular, the positive RET (reflux stop after phlebectomy) and terminal valve competence combination (40-50% of varicose patients) have the highest probability of not requiring further GSV treatment.<sup>8</sup>

Two sessions treatment may be unwelcomed by those patients preferring a single “shot”, but a long personal experience shows that the possible saphenous conservation is highly appreciated and convincing.

Surely companies interested in saphenous ablation tools do not like the described conservative attitude; their power is consistent and is enhanced by the operators’ passion for the most modern technologies.

In conclusion, simpler does not means simple, like somebody said before me. Those wanting to approach CHIVA must anyway apply for progressively learning continuous new challenges due to the countless anatomic-functional variations of venous human network. But yes, they can.

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