

The CHIVA in practice: Ready for a bold rebranding?

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Efstratios Georgakarakos 

The CHIVA method (French acronym for “Cure Conservatrice et Hemodynamique de l’Insuffisance Veineuse en Ambulatoire”) for the management of chronic venous insufficiency (CVI) has been introduced as a method identifying overloaded venous draining networks with anatomic shunts, reflux and reentry points between the deep and superficial venous system. The surgical strategy aims to abolish superficial reflux and venous hypertension via targeted flush ligations, avoiding ablation of saphenous trunk.¹ In a recently published paper, Ricci et al. attempt wonderfully to describe the method by simplifying its surgical steps, avoiding sophisticated presentation of the associated pathophysiology and omitting some ambiguous elements, e.g., regarding the role and topology of perforators and reentry points.^{2–5}

While current European and American Guidelines reserve CHIVA for surgeons “experienced in this method”, this holds the method restricted under an elite prism, discouraging average surgeons to practice it.^{6,7} Contrary to current perception for CHIVA, Ricci brilliantly concludes that “for achieving the goal of saphenous conservative treatment, a limited phlebectomy and possible junction interruption may be a simplified solution”, while high Duplex expertise is not warranted.² This reflects a useful trend toward rebranding the method as a reasonable, useful and easy-to-use tool for -at least- some cases. Towards this notion, I believe that underlining further some practical drawbacks and certain issues subject to improvement would be a significant step forward.

The major issue with CHIVA is that it strives for a place among other better-established techniques for CEAP C2, i.e., varicose veins. The method is usually staged with a 6–12 months interval between the stages, waiting for the development of adequate draining perforators. The main problem remains the unpredictability of the outcome, which is neither guaranteed nor efficient, while the aesthetic outcome can be only fair or suboptimal; in every-day practice, in real world, it is doubtful whether most patients would agree with such plan -especially for aesthetic reasons- had they not been deprived of other therapeutic options.

On the contrary, CHIVA should be highlighted for what it is really meant for: a hemodynamic-correcting intervention aiming at the *consequences of venous hypertension*, where an immediate outcome is prioritized. I personally use this philosophy -even as a bridge therapy- in patients urging active venous ulcer (CEAP C6) healing, reserving for later an additional option, if necessary. My personal impression is that the indications for the methods should be courageously shifted to clinical situations associated with alleviation of venous hypertension, including also the C4 stages of CVI.

Another weakness of the CHIVA method needed to address, is the oversimplification of the shunts presentation, the anatomical applicability and representation of which is little -if any- in clinical practice, adding to the confusion of the non-experienced surgeons. I believe that the CHIVA shunt topography should be practically compared, realigned and matched to more realistic vein anatomic classifications, like the newly reported subtypes of the anterior saphenous vein (ASV), where targeted CHIVA applications may easily compare to the already suggested laser ablation of the proximal short segment of the ASV, sparing the distal incompetent varicose network.^{6,8–10} Given the several anatomic variations and cannulation limitations associated with a short intrafascial ASV length, shape and termination point, the CHIVA ligation approach may be the one fitting better to treat the ASV (or other incompetent tributaries) related situations than ablation or other expensive (glue) or temporary (foam sclerotherapy) techniques.

In alignment with CHIVA anatomy, the longitudinal R4 branch connects the GSV saphenous trunk to itself at two different levels; the ASV or the medial accessory vein

Department of Vascular Surgery, “Democritus” University of Thrace, University Hospital of Alexandroupolis, Alexandroupolis, Greece

Corresponding author:

Efstratios Georgakarakos, Department of Vascular Surgery, University Hospital of Alexandroupolis, Democritus University of Thrace, Dragana, Alexandroupolis 68100, Greece.
Email: efstratiosgeorg@gmail.com

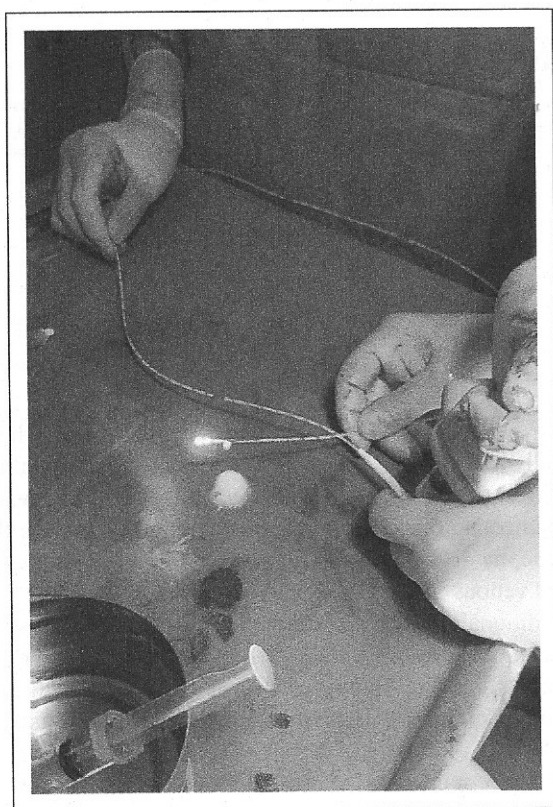


Figure 1. The Biolitec ELVeS Radial 2ring Pro laser fiber enables foam sclerotherapy through an injection channel located distal to the laser rings.

may be considered as such in most cases. While the CHIVA strategy considers the management of the reflux points and of the tributaries with reentry points, little is reported on the management of the R4 branches. Yet, half of the hemodynamic patterns having incompetent saphenofemoral junction treated in the study by Zamboni et al. were described as involving R4 branches with competent and incompetent saphenous segments interchangeably interposed along the great saphenous vein (GSV) trunk.¹¹ The author suggested combined flush ligation and division from the GSV of the tributary containing the reentry perforator.¹¹ Consequently, a newly appreciated CHIVA strategy should also clarify the optimal treatment (CHIVA 1 + 2, CHIVA 2, staged or *even hybrid*) for common relevant clinical scenarios; concomitant GSV and ASV reflux with symptomatic tributaries, isolated ASV reflux without proximal GSV reflux or ASV reflux with a hypoplastic proximal GSV and incompetent distal GSV.⁸

Interestingly, *as part of a hybrid approach*, a proximal CHIVA ligation may precede sclerotherapy of incompetent tributaries providing more completed cosmetic results. Alternatively, the *thermal ablation techniques can be modified* in accordance with the CHIVA philosophy, providing occlusion only in a limited GSV length -as equivalent

to the CHIVA saphenofemoral (SFJ) flush disconnection between the proximal crossing vessels of the SFJ and the first draining tributary of the GSV trunk, thus leaving most of the latter unaffected (the Riobamba laser draining crossotomy).¹² In other words, as part of a more complete personalized approach for challenging CVI cases, the value and benefits of an implemented CHIVA philosophy exceed by far the limitations of the classic described CHIVA surgical steps. The applicability of CHIVA philosophy will augment its use to a wider audience, overcoming questionable points and confusion over its classical use and outdated older ambiguities regarding the “drained versus the non-drained” CHIVA strategy.¹³

Practically, the aforementioned, fresh CHIVA approach can be facilitated with the new generation ablation catheters such as the ELVeS Radial 2ring Pro laser fiber (Biolitec AG, Wien, Austria).^{14,15} This catheter combines targeted thermal ablation with simultaneous foam delivery in the proximal part of varices in a single-step procedure (Figure 1) to reduce recurrence or neovascularization.

To conclude, the reappraised CHIVA strategy in current venous era should focus on what it is really about: a surgical hemodynamic rearrangement alleviating mostly from venous hypertension symptoms in C4-6, sparing the aesthetic result -if necessary- either for later or another method. These limitations but targeted CHIVA interventions can be a part of a complete hybrid approach to complex CVI cases. Reappraising CHIVA within a certain classification system for specific defined venous territories will provide a focused insight on the technique's efficacy, specifying its anatomical limitations and indications and evaluating its clinical applications.

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Guarantor

Efstathios Georgakarakos.

ORCID iD

Efstathios Georgakarakos  <https://orcid.org/0000-0003-3789-1110>

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