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# ACTUALITÉS THÉRAPEUTIQUES EN PHLÉBOLOGIE

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# *Thermal Ablation of Large Calibre Saphenous Veins.*

Sylvain Chastanet, Paul Pittaluga



## Introduction

- In our daily practice, the great saphenous vein (GSV) can be preserved until a certain stage of evolution of the varicose vein (VV) disease according to the ASVAL principles, therefore endothermal ablation (EA) of the GSV is only indicated when the GSV is highly dilated.
- We wanted to evaluate the results of the EA for the treatment of GSV with high dilatation.

## Method

We have retrospectively included the patients who underwent in our institute an EA of the GSV the last 4 years.

We gathered the preoperative clinical and hemodynamic data, and the highest preoperative diameter of the GSV at the saphenofemoral junction (SFJ) and at the thigh.

The postoperative events, as well as the clinical and hemodynamic outcomes were reviewed.

## Results

A total of 204 EA procedures have been performed in 183 patients from 21 to 83 yrs (average 54.8 yrs).

The 204 limbs treated were classified Co in 0 cases, C2 in 121 cases (59.3%), C3 in 40 cases (19.6%), C4 in 38 cases (18.6%), C5 in 3 cases (1.5%) and C6 in 2 cases (1%) in the CEAP class C Classification.

- Preoperative symptoms were present in 89.7% of the cases.
- The average maximum preoperative diameter of the GSV was at 11.8 mm (median 11.0, ranged 5 to 27 mm).
- All EA were performed under tumescent local anesthesia in ambulatory.
- All EA were performed on the GSV above the upper third of the calf, with a segmental radiofrequency probe (Closure Fast Covidien) in 190 cases and a 1470 nm laser fiber (ELVeS Biolitec) in 14 cases.
- A concomitant phlebectomy was performed in all cases.
- A low molecular weight heparin was prescribed for one week in all cases.

In postop, tenderness along the GSV treated requiring a pain killer intake was present in 14 cases (6.9%) and a hematoma was observed in 10 cases (4.9%).

The other postop events were: a temporary lymphocele at the calf in 1 case, a temporary edema of the calf in 1 case and a delayed healing of the percutaneous access point in 1 case. No thromboembolic event was reported.

The average follow-up was at 20.7 months (median 17 months). At 12, 24 and 36 months after life table analysis, we observed :

- An improvement of symptoms in 98.6%, 96.2%, 85.8% respectively.
- Freedom of reflux at the SFJ in 100%, 96.3%, 93.7% respectively.
- A complete occlusion of the GSV treated in 100% 97.5% 93.7% respectively.
- And freedom of VV recurrence in 100%, 99.2%a and 96.5% respectively.

## Conclusion

In advanced stage of VVs disease when the GSV cannot be spared because of high dilatation, the EA of the GSV gives excellent results at midterm, similar to those reported in the literature after EA of GSV with lower diameter. ■

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# *The choice of varicose veins treatment is also based on anatomic and hemodynamic data.*



G. Mark Malouf

The patterns of venous reflux in varicose veins patients vary a great deal. Anatomic and hemodynamic variations ***must influence*** the appropriate treatment offered to each individual patient.

The best understanding of the venous anatomy and the reflux flow patterns is provided by **accurate venous duplex mapping for reflux**, performed by the treating doctor or a trusted sonographer who has been informed of the history and clinical findings and whose recording of the findings the treating doctor accepts.

Other hemodynamic investigations such as plethysmography and venous pressure studies would also add to the hemodynamic data, but is rarely performed. Duplex mapping must be interpreted in conjunction with the clinical findings

**1**: to adequately and logically explain the pattern of the varicose veins seen

**2**: to adequately explain the venous signs and symptoms

**3**: as a basis upon which the doctor and patient establish a ***treatment plan***, also taking into account other factors such as the realistic expectations of the patient, the likelihood of disease progression and the chance of complications of the varicose veins such as bleeding or thrombosis.

*Most varicose veins treatment options focus on treating great saphenous vein reflux, less focused on small saphenous vein reflux. Often however the saphenous trunks are not the site of the main anatomic or hemodynamic abnormalities.*

*Consider these examples:* It is not uncommon to find minor or segmental reflux in a saphenous trunk, often of normal diameter, but the saphenous tributaries giving rise to clusters of large varicosities.

There may be a short length of reflux in the anterior accessory saphenous vein of the thigh, possibly with a varix close to its junction with the saphenous vein, filling large thigh varicosities that extend down the thigh and leg. In some patients, including many who have lost huge amounts of weight following gastric anti-obesity surgery, there often appears strange patterns of non-saphenous varicosities from groin and saphenous tributary reflux without significant truncal disease. There may be sapheno-popliteal valve incompetence with reflux going upwards into a thigh extension and then into tributary varicosities at the back of the thigh, and these feed varicosities around and down the leg. Sapheno-femoral incompetence may feed a great saphenous vein which immediately becomes extrafascial and very superficial, connected to varicosities around the leg. Isolated primary thigh perforating veins that are incompetent, popliteal fossa refluxing perforators not associated with the small saphenous vein, and large pelvic escape varicosities, can all produce significant non-saphenous varicosities. Refluxing intersaphenous connecting veins can produce segmental saphenous reflux, particularly in the distal leg, that may be difficult to understand or interpret, often accompanied by severe venous changes distally in the leg.

***Good quality duplex mapping is so very important to detect these variations and many more patterns that involve saphenous trunks to a more minor extent than expected.*** Most experienced phlebologists are able to categorise varicose veins patients into one of three broad categories: those with predominantly saphenous trunk disease, those with predominantly tributary vein disease with little saphenous trunk problems, and thirdly those with both truncal and tributary disease, both of significant severity.

***The treating doctor formulating the treatment plan must take these anatomic and hemodynamic criteria into account as well as the symptoms, physical findings and likely future complications of the veins distally.*** The important point is that often the saphenous trunks themselves require little or often no treatment.

Treatment options for refluxing saphenous trunks are discussed more frequently than anything else in regards to varicose veins. They include surgical ligation and stripping – requires hospital and is reducing in popularity in the western world, thermal ablation usually with laser or RF energy – $$, ultrasound guided foam sclerotherapy – cheap and repeatable, and Clarivein – $$.

Saphenous tributary treatment options include phlebectomies, foam sclerotherapy, or a combination of both. We know from QoL studies that all these treatment options are effective but the challenge is to formulate a specific treatment plan for each leg.

We have to judge how guilty the saphenous trunks are to justify treatment to them or whether to aim that treatment at the more serious tributaries, incompetent perforators, intersaphenous veins and pelvic escape veins.

Putting it another way, does the saphenous trunk need to be treated to control the venous disease or will treating the tributaries and clusters of varicosities be adequate? Anatomic and hemodynamic data help make this decision.

**Members of the French Society of Phlebology have discussed and published on this topic previously, from which the phlebologists world wide have benefited.**

**In conclusion the choice of treatment for varicose veins is based on many things, but very important among them are anatomic and hemodynamic data.** ■

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# *Yes, there are Still Indications for Classical Varicose Veins Surgery.*

G. Mark Malouf



**Old fashioned open varicose veins surgery, where the same operation was performed for all patients, has died.**

It has been replaced with duplex guided open varicose veins surgery which combines better understanding of the disease and the pathology based on high quality duplex mapping, very accurate skin markings, modern anesthetic techniques, minimally invasive surgical techniques, good compression, early ambulation and often with a desire by the patient to not be awake for their treatment.

***This constitutes the NEW "classical varicose veins surgery".***

Good quality modern open varicose veins surgery is useful in cases of severe and extensive varicose veins disease including saphenous vein enlargement and/or reflux to the ankle and foot, accompanied by many large and extensive clusters of varicosities.

Why take the hard road in treating these extensive cases when a well performed operation will safely and adequately treat the problem all in one treatment episode?

*Such open surgery is useful in cases of extensive tributary reflux and clusters of large varices where I want to surgically remove the disease and not rely predominantly on sclerotherapy in order to avoid phlebitis or pigmentation and possible reopening of the veins.*

***Refluxing saphenous trunks,*** whether they are lying in the saphenous fascial compartment or they have migrated to a more superficial sub-cutaneous position, can be very well managed using a range of options: surgical removal, thermal ablation, cyanoacrylate vein glue or foam sclerotherapy.

The details of the anatomy would influence my choice of treatment.

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However, it is **extensive tributary disease** that would influence me to admit the patient to hospital for a few hours, take them to the operating theatre and do whatever I choose with the saphenous trunks but spend time removing the varicosities surgically.

Cost has a major influence when choosing surgical treatment of varicose veins over other treatment methods. New technology costs more money – that is a fact.

We can subdivide cost into cost to the community and specific out-of-pocket cost to the patient.

**The patients worry about the latter, and in many cases new technology costs them more money.**

Each country has a different system of remuneration or reimbursement for venous treatments, ranging from individual payments for each service to a single global fee for the disease irrespective of the range of treatment methods used or number of visits. In some countries open surgery will be less costly for the patient.

- *In the USA* where in most cases no reimbursement is given for open varicose veins surgery in a hospital, it is not offered. When however, some health insurance programs began to reimburse ambulatory surgical phlebectomies, they began being offered to patients.
- *Different European countries* have different regulations regarding reimbursement for various treatment options. Reimbursement for open surgery seems to be reducing, thus it is being performed less frequently.
- *In Australia* we have the uniquely stupid situation where no private health fund reimbursement is triggered unless patients are admitted to a hospital. Australia has 47% of the population privately insured in addition to the universal Government funded Medicare insurance. Many privately insured patients request hospital admission to enable the health fund to ease the financial gap.
  For this reason, Australia would be the only country where many varicose veins patients are admitted to hospital, taken to theatre and given an anaesthetic to duplex guided open varicose veins surgery or thermal ablation to saphenous trunks, followed by phlebectomies.
- *In poorer countries* where the government hospitals offer open surgery for varicose veins as the only treatment option, and the cost of thermal ablation is out of the reach for the majority of the population.
  Sclerotherapy is generally regarded as a cheap varicose veins treatment but even the cost of sclerotherapy may be high in some countries where surgery is free. Thus good quality duplex guided classic vein surgery is still a popular and frequently performed option.

*The increased downtime, bruising, postoperative pain and scars and potential for nerve injury are all a drawback for classical duplex guided veins surgery which includes saphenous trunk stripping.*

These have to be balanced against the issues raised above, as well as the situation that both the patient and the doctor finds themselves in. *Well performed open varicose veins surgery still remains a viable option for many patients worldwide. For open varicose veins surgery to remain competitive in the situations above, that surgery has to be of excellent quality.*

Such surgery is no longer being taught to our surgical trainees, resulting in a slow but decisive reduction in the number of varicose veins open operations worldwide, including among enthusiasts like me.

This reduction in surgery will hopefully correspond to treating varicose veins at an earlier stage using non-surgical methods which are very effective.

This will be demanded by a rising middle class worldwide demanding good quality medical care and with more health spending potential.

***Therefore, I see the current indications for open varicose veins surgery in 2016 as:***

- Severe extensive venous disease,
- Marked large tributaries and clusters of gross varicosities,
- Specific areas of varicose veins in a situation where surgical removal would give a better result than sclerotherapy or thermal ablation,
- Vein glue may alter this indication,
- Where the personal cost burden to the patient is least with open surgery, depending on the health care setting,
- Apprehensive or needle-phobic patient where as much needs to be accomplished as possible under a general anasthetic,
- Where patients request such open treatment. ■