

Perspective

ELVeS - When? Where? Who? With What? How?

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Endolaser therapy insufficiency of the superficial veins system of the lower limbs at present demonstrated indubitable affectivities and advantages for the patients at all the world and there are, in vast majority of the cases method therapy the first choice. It had been very well tolerated by the patients, and now also with long-lasting effects, more than ten years.

According to our proceeding experience with classical stripping method radical treatment varices lower limbs and after more than fourteenth years' experience with ELVeS and more than one thousand and fifty hundred patients, we'd like to present our basic knowledge's. There are:

WHEN?

When radical ELVeS should be suggested?

A clinical examination of superficial venous and arterial systems should be a key assessment, i.e. the measurement by Doppler ultrasound. The diameters of the both great and small saphenous veins in groin and popliteal regions before entering the deep venous system, the presence of reflux in these regions, the extent of reflux in large veins and/ or their lateral branches, and even in by-passing vessels into deep venous system, must always be known. If there is a dilatation of a large vein detected either in sapheno-femoral or in sapheno-popliteal junction and if there is a reflux present, then a radical procedure is inevitable, of course in case a normal clearness of deep venous system.

WHERE?

Where ELVeS should be performed?

We believe that the operating room is the only optimal setting in a large majority of indicated radical ELVeS interventions. The anaesthesiologist, who provided various types of analgesia, during the procedure starting with analgosedation and ending with general anaesthesia, should be present in specific situations. Under these conditions, the surgeon may calculatedly perform a preparation and or ligature of the great or small saphenous veins in inguinal to popliteal regions, insert a laser fiber into optimal length of affected vein, depending on the actual situation, extend a radicality of the procedure by instrumental resection of varicose nodes, without any limitation by a degree of analgesia.

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WHO?

Who has the best expertise for ELVeS?

We believe that considering the radicality of primary procedure, as well as long term efficiency, such treatment should remain in the scope of vascular surgery, phlebology and perhaps general surgery specialisations, and their trained experts. It is evidently clear, that interventions in which the large veins isn't closed in the whole length, the necessary preparation in the groin or popliteal region isn't performed, and/or all varices on the affected leg aren't adequately treated, domine nowadays. This happens when the specific expertise in vascular surgery, which is very desirable in the effort to perform the radical endolaser intervention, is missing.

WITH WHAT?

Which instrumentation should be used for radical ELVeS?

Nowadays, we exclusively use lasers with 1470 nm laser fibre wave length. The efficiency of this wavelength has already proven. We may only discuss various types and shapes of laser tips, to ensure optimal contact with vessel walls. In the future we and our patients would appreciate the options of treating simultaneously intracutaneous telangiectasia's, together with subcutaneous varices. The medical device should be equipped with the option to alternatively change either 980 nm or 1470 nm wavelength, for both percutaneous and intravascular application of laser energy.

HOW?

How should we proceed in radical ELVeS?

We believe that it is necessary to treat the superficial venous system insufficiency radically. This means, that we should primarily treat everything what is in a given time point. i.e., not only the large veins in the whole length, but also dilated collateral veins with reflux and mainly all varicose nodes.

The insertion of a laser fiber into great or small saphenous vein can be performed via micro incision above the inner or outer ankle, or via a puncture in a calf. We always choose the most distal part of the affected vein. The puncture may be insufficient

approach in some cases and the puncture in the middle of calf may pose the patients in a risk due to the proximity of the sural nerve of the intervention in the small saphenous vein.

The technique used in sapheno- femoral and sapheno- popliteal junctions is also very important. If preoperative ultrasound detects, that diameter of the entry into deep system reaches triple diameter of in the its non-dilated segments, and especially, if there is a reflux into one or more branches before entering the deep system, we believe, in accordance with other authors, that "lege artis" performed crossectomy with ligature of the trunk of the great or small saphenous vein and their branches represent the optimal solution in such local situation. Nevertheless, it must be taken into account, that prevention of local recurrences isn't always possible. However, we would like to point out, that if the local finding had made us perform a ligature and a crossectomy we didn't observe any local recurrences in the group of our patients later on.

In situations, when we decide not to perform a ligature, we always place a laser fibre about 2,0 to 2,5 cm far from junction, of course before administration of the tumescent anaesthesia or a cold normal saline. It is evidently clear, that patients without incision in their groin or popliteal region have better post-operative comfort.

The closure of the total length of the great or small saphenous vein is performed standardly – by decreasing the intensity of the laser energy to the point a distal insertion of the fibre into the vein from 10W, resp. 12W, to 2W. The amount of released energy per unit length oscillates around 80 J/cm.

After closing the large vein, the next step is the closure of all dilated and preoperatively colourfully marked lateral varicose veins. We always enter these veins by puncture and we use a combined procedure, ie. A combination of laser, foam sclerotisation and/or extirpation with "Klapp- Smetana" knife to reach the best final result. The reason for this combined approach is the inadequate flexibility of the optic fibre, which prevents closure of the total length of this vein, let alone the large varicose nodes. This is also a prevention of recurrence of large varices. That means, from the above, that the per-operative procedure is strictly individual in every patient.

The high elastic stocking class 2/40 mg Hg compressions are put on the operated leg after the surgery. Depending on the extent of the procedure and the grade of anaesthesia, the patient is either hospitalized for one day, or dismissed 2 hours after procedure at home. Complete occupational and social recovery usually varies from 7 to 10 days after the surgery.

During the last 5 years we eliminated the risk of deep phlebotrombosis low, by a short 3 days administration of LWMH.

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