

## EVLA: A modern approach for varicose veins

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Madam, varicose veins are the tortuous, widened veins with incompetency veins causing reflux of blood usually in lower extremities and is the first symptom of venous insufficiency that can lead to long term blood stasis with pain, oedema, skin changes, thrombosis and ulceration. The condition has almost a prevalence of 5% to 30% and is more common amongst the female population. It is multifactorial disease involving positive family history, pregnancy, lifestyle, smoking, obesity etc.<sup>1</sup> In Pakistan, the conventional approach is still in practice to treat this ailment that includes ligation stripping or sclerotherapy. Endovenous laser ablation (EVLA) is a novel plan which started in 2004 and since then has outweighed the benefits of venefit procedure, stripping methods, sclerotherapy and also prevented the recurrence from these older methods.<sup>2</sup>

EVLA works on the principles of thermodynamics which shrinks the leg veins irreversibly preventing recurrence of varicosity. The procedure involves heating of the vein wall and peri-venular tissue through a laser fiber inserted in the vein by locating the site through ultrasound. Ideally, the temperature is maintained at 85°C, adequate to achieve therapeutic effect with nearly no extra tissue compensation. An additive affect is through heat conduction in blood that shrinks the collagen of the veins and eventually obliterates the lumen.<sup>3</sup> The energy transfers approximately 80 to 100joules/cm with no more than consumption of 12-14 watts by the device which is remarkably economical. With variable venular tissue texture and thickness observed on ultrasound, the transferring energy can be adjusted.<sup>4</sup> It was also established that EVLA is more cost effective than its relative options, psychologically more promising for the patients and with minimal side effects. EVLA also outweighs the benefits, effectiveness and the quality of life of patient from radiofrequency ablation and ultrasound guided foam sclerotherapy.<sup>5</sup> The procedure does not take more than 28 minutes with 40 minutes of general anaesthesia time, which is further reduced by simple tumescent anaesthesia (N2O/O2) and all the patients are discharged on the same day. There

are no specific precautions to be practiced after it.<sup>6</sup>

EVLA can easily be done in local anaesthesia and with lesser surgical staff. The approach does not require long inpatient services or hospital stays that reduces the medical workforce and exposure to nosocomial infections. This is the cutting edge technique of this field and is considered a walk-in procedure with all the potentials to become the leading choice of the vascular surgery practitioners and the patients in treating the varicose veins in our country.

There could be multifactorial explanations that EVLA is still not in practice in Pakistan. One is that there are only two fellowship programmes of vascular surgery in the country which started in 2015 and are naïve to introduce such modern approaches. The importing of equipment, quality assurance of surgical units, machine handling and trained technicians to handle the device are other series of hurdles in bringing it in practice. A hands-on clinical training for general surgeons by a foreign vascular surgery programme, training of technicians and investment in the machinery may change the practice of vein care in our country.

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### References

1. Eberhardt RT, Raffetto JD. Chronic venous insufficiency. *Circulation*. 2005; 111:2398-409.
2. Theivacumar NS, Gough MJ. Endovenous laser ablation (EVLA) to treat recurrent varicose veins. *Eur J VascEndovasc Surg*. 2011; 4:691-6.
3. van Ruijven PW, Poluektova AA, van Gemert MJ, Neumann HA, Nijsten T, van der Geld CW. Optical-thermal mathematical model for Endovenous laser ablation of varicose veins. *Lasers Med Sci*. 2014; 29:431-9.
4. Niedzwiecki G. Endovenous Thermal Ablation of the Saphenous Vein. *SeminInterventRadiol*. 2005; 22:204-8.
5. van den Bos R, Arends L, Kockaert M, Neumann M, Nijsten T. Endovenous therapies of lower extremity varicosities: a meta-analysis. *J Vasc Surg*. 2009; 49:230-9.
6. Meier TO, Jacomella V, Clemens RK, Amann-Vesti B. Nitrous oxide/oxygen inhalation provides effective analgesia during the administration of tumescent local anaesthesia for endovenous laser ablation. *Vasa*. 2015; 44:473-8.

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