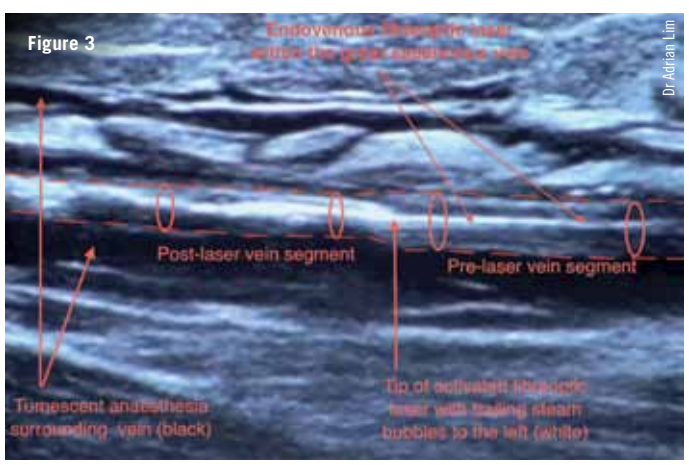
Treatment of varicose veins


Dr Adrian Lim

Figure 1: Varicose veins can cause discomfort and complications.

Figure 2: EVLA uses a fibreoptic laser to heat-ablate vein segments.



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Patients often ask about management options for unsightly varicose veins.

CLINICAL SCENARIO

A 48-YEAR-OLD nurse presents with a 10-year history of varicose veins that are gradually getting worse (Figure 1). She complains of significant aching and swelling of the affected leg that gets worse with prolonged standing, especially at the end of the day.

She is currently well but has a maternal family history of varicose veins with the complication of thrombophlebitis and venous ulceration. She asks about her management options.

COMPLICATIONS OF VARICOSE VEINS

Primary varicose veins are associated with increased venous congestion/ pressure in the superficial venous system of the lower limb, due to weak vein walls or incompetent valves. Less commonly, deep vein thrombosis of the leg with valve damage can cause secondary reflux and congestion to produce secondary varicose veins.

Chronic venous congestion can lead to harmful changes in the skin and veins (see Table 1). Even when varicose veins are asymptomatic, potential skin and vein complications can still occur secondary to underlying chronic venous congestion or pressure.

ASSESSING AND MANAGING VARICOSE VEINS

The diagnosis is straightforward when there are clearly visible dilated and tortuous vein segments. In less clinically apparent cases, ultrasound scanning (audio Doppler or visual Duplex devices) is required to assess superficial venous reflux or incompetence. Significant venous reflux or congestion may occasionally be detected in patients presenting with 'mild' looking varicose veins.

Before treating varicose veins, a Duplex scan is required to map the entire superficial venous network so that no 'hidden' varicosities are missed. The map provides information on the degree of venous reflux or incompetence as well as vein lumen diameter. More severe disease is correlated with greater reflux and larger lumen diameters.

Specific procedural options include vein stripping, ultrasound-guided sclerotherapy, endovenous laser ablation (Figure 2) or a combination of procedures.

In recent years, ultrasound guided sclerotherapy and endovenous laser ablation techniques have become a popular alternative to this stripping procedure. Informed patient preference will help determine the specific treatment option.

ENDOVENOUS LASER ABLATION

Endovenous laser ablation (EVLA) of varicose veins uses a fibreoptic laser to heat-ablate intraluminal vein segments (Figure 3).

Radiofrequency devices were introduced first, a decade ago, followed by a steady proliferation of laser devices characterised by different wavelengths.

They all accomplish vein ablation by heating the internal vein wall, which leads to subsequent collapse and fibrosis of the treated vessel.

The endovenous laser procedure involves three steps:

1. Insertion of fiber-optic laser wire into the incompetent vein segment.
2. Infiltration of tumescent (dilute) anaesthetic (xylocaine and adrenaline) around the target vein to collapse it so that it is in close contact with the device wire whilst providing a protective fluid buffer between the treated vein and the surrounding tissue.
3. Firing and withdrawing the fibreoptic laser along the vein segment at a controlled rate.

Common side effects of EVLA include possible procedural discomfort (under local anaesthetic), bruising and swelling. More serious but rare complications include laser burns (to the overlying skin), thrombophlebitis and deep vein thromboembolism. EVLA offers high efficacy with low side effects/ downtime and is considered a valid alternative to surgical stripping of varicose veins.

EVLA has a recanalisation (failure) rate of 5% over five years and is more effective than ultrasound guided sclerotherapy for larger diameter veins.

However, tortuous veins are not suitable for EVLA because these 'squiggly' veins will not permit passage of the catheter/ wire. In practice, many of these smaller tributaries can be simply and effectively treated with ultrasound-guided sclerotherapy.

CASE DISCUSSION

This patient underwent EVLA of the proximal great saphenous vein and ultrasound guided sclerotherapy to the tributaries. The procedure was uneventful but she experienced some temporary post-treatment phlebitis in the second month post procedure.

By three months post-procedure, the varicose veins had mostly resolved with some residual haemosiderin (brown) staining of the skin, which will further improve with time (up to 12 months). The symptoms of leg heaviness and aching resolved after the second month.

The treatment can be expected to reduce her risk of potential complications from chronic venous congestion.

Clinical features of chronic venous congestion

Symptoms	Signs	
	Vein	Skin
None	Venular flares	Dermatitis
Aching	Varicose veins	Haemosiderin staining
Heaviness	Phlebitis	Oedema
Throbbing	Thrombosis	Acute lipodermatosclerosis
Burning	Bleeding	Chronic lipodermatosclerosis
Tightness		Cellulitis
Cramps		Poor wound healing
Itching		Atrophie blanche (pre-ulcer)
Swelling		Scarring
Tiredness		Ulceration
		Malignant transformation (SCC)