

Endovenous laser ablation of the small saphenous vein: Results

Ted King, MD, Assistant Medical Director, Vein Clinics of America, presented the following studies in June at the Asian Chapter Meeting of the World Congress of the Internal Union of Phlebology in Japan.

Aims: To report intermediate term results of endovenous laser treatment (ELT) of sapheno-popliteal junction (SPJ) incompetence and small saphenous vein (SSV) reflux.

Methods: Eighty-three small saphenous veins were treated with ELT (980 nm: 50 and 1320 nm: 31). Two (2.5%) were unable to be treated with laser due to vein spasm and were treated with ultrasound-guided foam sclerotherapy. Patients were evaluated clinically and Duplex ultrasound evaluation was performed at three days, one week, one month, three months, six months, and twelve months. The great saphenous vein (GSV) was also treated in the same session as the SSV in 49 (60.5%). All refluxing veins not amenable to treatment with ELT were injected the same day that ELT was done and then on follow up, as necessary.

Results: Successful occlusion of the SSV, as shown by

lack of flow on Duplex ultrasound and pulsed color Doppler imaging, was demonstrated in all but three patients at one month, all but four patients at three months, all but three patients at six months, and all but one patient at one year. Observed recurrent flow at the SPJ was treated with ultrasound-guided foam sclerotherapy. No nerve injury, infection, superficial phlebitis, or skin burns occurred. There was no evidence of deep venous thrombosis or pulmonary embolism. Patients experienced mild bruising, swelling, and discomfort but, otherwise, had no significant complications.

Conclusions: Short and intermediate term results of ELT of the small saphenous vein treatment showed that this technique is highly safe and effective in the elimination of small saphenous vein reflux. This is true, even when done in conjunction with concomitant ELT of GSV and ultrasound-guided foam sclerotherapy. Long term results, assessing success of treatment and effect on Quality of Life scoring, are underway.

Endovenous laser ablation: Does fluence make a difference?

Objective: To evaluate the possible effect and predictive value of fluence (J/cm²) on the success of treatment with endovenous laser ablation.

Methods: Four hundred thirty-five successive cases of endovenous laser ablation (980 nm diode laser and 1320 nm Yag laser) of the GSV, SSV and other non-saphenous veins were evaluated for success of treatment at 1, 3, 6, and 12 months. Any reflux (> 0.5 sec.) at the SPJ or SFJ, seen on Duplex ultrasound and pulsed color Doppler imaging, was called treatment failure. Fluence was determined by dividing the energy delivered to the vein by a calculated estimate of the surface area of the treated segment of vein.

Results: 195 cases treated with the 1320 Yag laser and 240 cases treated with the 980 diode laser were evaluated. 21 of the cases treated with the 1320 and 20 of the cases treated with the 980 laser were called failures.

	Average J/cm	Average J/cm ²	Average CEAP	Average VDS
980 nm diode laser				
Success	55.0	35.5	4.0	9.2
Failure	57.9	23.2	4.2	10.4
1320 nm Yag laser				
Success	66.9	45.4	3.9	9.7
Failure	64.9	38.1	4.2	11.4

Conclusions: Energy delivery (J/cm) would not appear to be as reliable a predictor of adequate endovenous laser treatment as fluence (J/cm²). This is true for both the 980 diode laser and the 1320 Yag laser. Although important factors to assess, CEAP and VDS do not appear to be reliable predictors of treatment outcome either.

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