



Venous Forum Annual Spring meeting

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Abstract:

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Post-procedure pain, safety and efficacy following great saphenous (GSV) endovenous laser ablation (EVLA) using a 1470nm diode laser

AIMS:

EVLA abolishes GSV reflux and is an alternative to surgery for treating varicose veins. Currently lasers of 810 – 980nm wavelength (peak absorption by haemoglobin) are used. Both direct vein wall contact and steam derived from intra-luminal blood may facilitate ablation. Despite its minimally invasive nature post-procedure pain was similar to that for surgery in a recent RCT. We have therefore assessed pain scores (and safety and efficacy) after GSV EVLA using a 1470nm diode laser (energy absorption by water in vein wall 40x >haemoglobin).

METHODS:

GSV ablation (ultrasound, 6 weeks), post-operative pain (100mm linear analogue scale, days 1 – 7) and complications were assessed in patients treated with either an 810nm laser (Group A: n=29) or a 1470nm laser (Group B: n=22).

RESULTS:

Both groups received 60J/cm laser energy (median) with complete GSV occlusion achieved in 26/29 legs (90%, Group A) and 22/22 (100%, Group B) respectively. In Group A 2/29 (7%) patients developed temporary saphenous nerve paraesthesia (resolved by 6 weeks) and 3 (10%) significant "phlebitis". No complications occurred in Group B. Median pain scores (days 1 – 7) were 4, 1, 1, 8, 11.5, 14.5, 15 for Group A and 1, 0.5, 0, 0, 0.5, 1 for Groups B respectively (P<0.001 for all days).

CONCLUSIONS:

GSV EVLA using a 1470nm diode laser is safe and effective. Furthermore patients experienced minimal post-procedure discomfort compared to those treated with the current generation of lasers. This may reflect more specific vein wall injury secondary to the absorption characteristics of the laser energy.