



Résumés d'articles publiés dans la revue « Phlebology » Volume 24 ; Number 4 : August 2009

Venous disease A-Z series : no. 11

Changes in venous function after foam sclerotherapy of varicose veins.

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Abstract: **Objectives:** Foam sclerotherapy of varicose veins has recently proven to be an effective, economic and safe treatment modality. The present study attempts to evaluate the haemodynamic changes after sclerotherapy in addition to the clinical results.

Methods: In a prospective observation trial, 67 sites (2/3 of which were recurrent varicose [RV] veins after previous treatment) in 53 patients were treated with polidocanol foam, and the results were assessed clinically, by duplex, photoplethysmography and strain gauge plethysmography.

Results: With the exception of two sites (3.0%), all treatments resulted at least in an improvement, and about 80% of the treated veins were completely occluded as demonstrated by duplex ultrasound examination. The haemodynamical results accordingly reflected a significant improvement of the venous function. Patients with postthrombotic syndrome showed poorer results.

Conclusion: Foam sclerotherapy is a highly effective and safe method for the treatment of primary and RV veins.

Keywords: varicose veins, sclerotherapy, polidocanol, foam, haemodynamics.

Phlebology 2009; 24(4): 145-150

Original article

Effects of eccentric compression by a crossed-tape technique after endovenous laser ablation of the great saphenous vein: a randomized study.

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Abstract: **Objectives:** To evaluate the effect of eccentric compression applied by a new crossed-tape technique on procedure-related pain occurrence after endovenous laser ablation (ELA) of the great saphenous vein (GSV).

Methods: From April 2005 to June 2006, 200 consecutive ELA procedures were randomized to receive (group A: 100) or not (group B: 100) an eccentric compression applied in the medial aspect of the thigh. Patients were scheduled for a seven-day examination to assess the level of pain experienced. Pain intensity was measured using a visual analogue scale giving a numerical grade from 0 (no pain) to 10 (worst pain ever).

Results: The intensity of postoperative pain was significantly reduced ($P < 0.001$) in the eccentric compression group as compared with the non-compression one.

Conclusions: This technique of eccentric compression greatly reduces the intensity of postoperative pain after ELA of the GSV.

Keywords: compression stockings, endovenous laser treatment, saphenous vein, varicose veins, venous insufficiency.

Phlebology 2009; 24(4): 151-156

Original article

**Assessment of quality of life in Mexican patients suffering from chronic venous disorder.
Impact of oral *Ruscus aculeatus*-hesperidin-methyl-chalcone-ascorbic acid treatment
'QUALITY Study'.**

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Abstract: **Objectives:** The present study assessed the effect of *Ruscus aculeatus*-hesperidin-methyl-chalcone-ascorbic acid (HMC-AA) on the quality of life (QoL) of patients suffering from chronic venous disorders (CVDs).
Methods: An observational, multicentre and prospective study was performed with 917 Mexican patients suffering from CVD. Patients were treated with *R. aculeatus*-HMC-AA. After 12 weeks of treatment, the physicians then assessed the patients' symptoms and QoL using Short Form (SF-12) and Chronic Venous Insufficiency (CIVIQ) auto-questionnaires.
Results: Patients were mainly women (86.7%), overweight or obese (72.7%) or C2 (39.3%)-C3 (27.6%). All symptoms and ankle circumferences significantly improved over time, with increasing clinical, aetiological, anatomical and pathophysiological (CEAP) classes and body mass index (BMI) ($P < 0.001$). Concerning QoL, all dimensions of the SF-12 score significantly improved over time ($P < 0.001$). Moreover, the CIVIQ scores significantly improved ($P < 0.001$) with increasing BMI ($P < 0.002$) and CEAP classes ($P < 0.05$).
Conclusion: *R. aculeatus*-HMC-AA significantly improved the symptoms and QoL of CVD patients.

Keywords: chronic venous disorders, venotonic drugs, quality of life, *Ruscus aculeatus*, Cyclo 3 Fort[®], Fabroven.

Phlebology 2009; 24(4): 157-165

Original article

Endovenous laser treatment: a morphological study in an animal model.

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Abstract: **Objectives:** The destruction induced during endovenous laser treatment (ELT) of the saphenous vein and the perivenous tissue in an animal model (goats) was analysed. Differences in vein wall destruction produced by two laser types, the 980 and 1500 nm diode lasers, were evaluated histologically.
Methods: In 14 goats, 28 lateral saphenous veins were treated with ELT. In 14 veins we used the 980 nm diode laser and in the remnant a 1500 nm laser. Postoperatively the veins were removed at different stages and sent for histological examination.
Results: Immediately removed veins after ELT show an uneven destruction of the vein wall. Veins harvested one week postoperatively show inflammatory tissue at their periphery. Two and three weeks postoperatively, organization is very extensive. In some cases, recanalization begins in a semi-lunar manner at the contralateral side of the laser hit. Veins treated with a 980 nm laser show deeper ulceration with more perivenous tissue destruction compared with veins treated with a 1500 nm diode laser.
Conclusions: The ELT of veins produces an unevenly distributed damage. The cell necrosis is far more extensive than expected. Uneven vein wall destruction can lead to recanalization. Using a 1500 nm laser correlates with less penetrating ulcerations and more circumferential damage.

Keywords: endovenous laser ablation, histological study.

Phlebology 2009; 24(4): 166-175

Original article

**Sclerotherapy of varicose veins in patients with documented thrombophilia:
a prospective controlled randomized study of 105 cases.**

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Abstract: **Objectives:** The aim of this study was to assess thrombotic complications following sclerotherapy in thrombophilic patients in combination with thromboprophylaxis, in two randomized arms using low molecular weight heparin (LMWH) or warfarin.

Patients and methods: This study received approval from the Ethics Committee. A total of 105 patients (81 females, 24 males) ranging in age from 20 to 82 years (mean 50) were selected: 75 with Factor V Leiden mutation, 18 with prothrombin 20210A mutation, 7 with high level of Factor VIII, 5 combinations of these. After randomization, 51 and 54 patients received warfarin and LMWH, respectively. A total of 199 sclerotherapy sessions were performed. Foam was used in 160 treatments.

Results: No episodes of symptomatic deep vein thrombosis (DVT) or pulmonary embolism (PE) occurred; no instances of DVT were revealed by ultrasound-monitoring.

Conclusions: This study suggests that in the three most common forms of thrombophilia, sclerotherapy, in combination with thromboprophylaxis, can be performed safely. Prophylaxis with LMWH is easier to use than warfarin.

Keywords: factor V Leiden mutation, thrombosis, prophylaxis, varicose veins, foam sclerotherapy.

Phlebology 2009; 24(4): 176-182

Original article

**Prospective five-year study of ultrasound-guided foam sclerotherapy
in the treatment of great saphenous vein reflux.**

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Abstract: **Objectives:** The purpose of this study was to determine the long-term efficacy, safety and rate of recurrence for varicose veins associated with great saphenous vein (GSV) reflux treated with ultrasound-guided foam sclerotherapy (UGFS).

Methods: A five-year prospective study was performed, recording the effect on the GSV and saphenofemoral junction (SFJ) diameters, and reflux in the superficial venous system over time. UGFS was the sole treatment modality used in all cases, and repeat UGFS was performed where indicated following serial annual ultrasound.

Results: No serious adverse outcomes were observed - specifically no thromboembolism, arterial injection, anaphylaxis or nerve damage. There was a 4% clinical recurrence rate after five years, with 100% patient acceptance of success. Serial annual duplex ultrasound demonstrated a significant reduction in GSV and SFJ diameters, maintained over time. There was ultrasound recurrence in 27% at 12 months, and in 64% at five years, including any incompetent trunkal or tributary reflux even 1 mm in diameter being recorded. Thirty percent had pure ultrasound recurrence, 17% new vessel reflux and 17% combined new and recurrent vessels on ultrasound. Of all, 16.5% required repeat UGFS treatment between 12 and 24 months, but less than 10% in subsequent years. The safety and clinical efficacy of UGFS for all clinical, aetiological, anatomical and pathological elements classes of GSV reflux was excellent.

Conclusion: The popularity of this outpatient technique with patients reflects ease of treatment, lower cost, lack of downtime and elimination of venous signs and symptoms. Patients accept that UGFS can be repeated readily if required for recurrence in this common chronic condition. The subclinical ultrasound evidence of recanalization or new vein incompetence needs to be considered in this light.

Keywords: foam sclerotherapy, UGFS, great saphenous vein reflux, varicose veins, prospective study.

Phlebology 2009; 24(4): 183-188