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# Résumés d'articles publiés dans la revue « Phlebology »

## Volume 26 ; Number 7 : October 2011

*Original Article*

### Evaluation of lymph drainage using bioelectrical impedance of the body

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**Abstract:**

**Aim:** The aim of this study was to investigate the effects of manual and mechanical lymph drainage on the bioelectrical composition of body tissues of patients with lymphoedema of the lower limbs.
**Method:** Twenty-one patients with lymphoedema of one leg were evaluated using single frequency bioelectrical impedance with four electrodes (SF-BIA4) immediately before and after a combination of manual and mechanical lymph drainage. Statistical analysis used the two-tailed paired t-test with an alpha error of 5% being considered acceptable.
**Results:** On comparing the results before and after lymph drainage, statistically significant differences were identified for both lymphoedematous and apparently healthy legs, but there were no significant differences in the alterations caused by the treatment between the healthy and lymphoedematous limbs of the same patient.
**Conclusion:** It was concluded that the association of manual and mechanical lymph drainage both modified the body composition as identified by bioelectrical impedance, and reduced the oedema.

**Keywords:** lymph drainage, lymphoedema, bioelectrical impedance.

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*Original Article*

### Changes in popliteal vein diameter and flow velocity with knee flexion and hyperextension

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**Abstract:**

**Objective:** To compare popliteal vein (PV) diameter and peak flow velocity generated by a calf compressor, when the knee is either flexed or hyperextended.
**Method:** Subjects lay supine on a couch with a calf compressor on each leg. Peak flow velocities in the PV were measured by duplex ultrasound during activation of the compressor, when the knee was either flexed or hyperextended. Hyperextension of the knee is seen when the heel is elevated to prevent heel pressure ulcers.
**Results:** The results were analysed using the Wilcoxon signed rank test. This showed a significant increase in peak flow measurements related to narrowing of the PV when the knee was hyperextended.
**Conclusion:** There is a functional narrowing of the PV during hyperextension of the knee. We developed a model, which postulates an increase in the risk of deep vein thrombosis in patients whose knee is hyperextended. Based on this model, we suggest that the knee should be flexed slightly when patients are supine and anaesthetized.

**Keywords:** popliteal vein, compression; DVT, intermittent calf compressor.

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*Original Article*

## Tumescent anaesthesia in combination with femoral nerve block for surgery of varicose veins: prilocaine 0.1% *versus* 0.2%

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**Abstract:**

**Objective:** Results of a prospective, randomized, double-blinded study about tumescent anaesthesia (TA) in combination with femoral nerve block (FNB) for surgery of varicose veins are reported. The aim is to compare two different concentrations of prilocaine in TA.
**Method:** With approval of the ethical committee and informed consent, FNB (nerve stimulation, 20 mL prilocaine 0.75%) was performed followed by TA using prilocaine 0.1% *versus* 0.2% (groups Po.1 and Po.2). Further medication was standardized. Overall amount of prilocaine was recorded, plasma levels of 20 patients measured regularly. Side-effects, patient satisfaction and pain scores were compared (P , 0.05).
**Results:** Ninety patients were included. In one patient (Po.1), general anaesthesia was necessary. There was no difference in pain scores, need for rescue medication or patient satisfaction. More prilocaine was administered in Po.2 (P, 0.0001) with higher but far below toxic plasma levels. In three patients (Po.2) mild met-haemoglobinaemia was confirmed.
**Conclusion:** TA with prilocaine 0.1% in combination with FNB is sufficient to provide high patient satisfaction during varicosis surgery.

**Keywords:** tumescent anaesthesia, femoral nerve block, surgery of varicose veins, prilocaine.

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*Original Article*

## Development of a device to determine the stiffness of elastic garments and bandages

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3. Department of Development and Research, AMI Techno Inc., Tokyo, Japan

**Abstract:**

**Objective:** To evaluate the reliability of a newly developed stiffness-determining device, composed of a leg mannequin and air-pack type analyser, for measuring the interface pressure.
**Method:** The correlation of stiffness values obtained employing the Hohenstein method and this new method was investigated using 17 different brands of medical elastic compression stocking.
**Results:** A significant correlation in stiffness values using the two methods was obtained (P , 0.01). When this new method was applied to the bandages, the stiffness was significantly correlated with the initial pressure when assessing both short-stretch and long-stretch bandages. On the comparison of stiffness values between elastic stockings and bandages with the same initial pressure, the short-stretch bandages showed a predominantly higher value than long-stretch bandages and stockings (P, 0.01).
**Conclusion:** The reliability of this new method, which can be easily applied to not only elastic stockings but also elastic bandages, was verified. In clinical practice, the compression pressure should be selected in consideration of the prospective stiffness.

**Keywords:** stiffness, new device, compression pressure, elastic stockings, elastic bandages.

Phlebology 2011;26:285–291. DOI: 10.1258/phleb.2010.010041

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*Original Article*

## Three cases of stroke following peripheral venous interventions

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**Abstract:** We report three cases of stroke in association with peripheral venous interventions that each included foam ultrasound-guided sclerotherapy (UGS). All three female patients experienced a right middle cerebral artery (MCA) stroke causing dysphasia and left hemiparesis. A patent foramen ovale was found in each patient. The first incident occurred two days after foam UGS to treat small tributaries of a great saphenous vein (GSV). Paradoxical clot embolism was presumed in this case where concurrent deep vein thrombosis with non-occlusive thrombus in a medial gastrocnemius vein extending to the popliteal vein was detected on ultrasound. The second case occurred immediately at the completion of foam UGS and ambulatory phlebectomy to treat GSV tributaries. Paradoxical gas embolism was demonstrated in this patient confirmed by visualization of bubbles in the right MCA on CT angiography. The third case occurred one day after endovenous laser ablation (1470 nm) and foam UGS to treat both great and small saphenous veins. No specific cause could be confirmed in this patient. Sodium tetradecyl sulphate foam was used in all three cases (3%, 16 mL; 1.5%, 4 mL and 3%, 25 mL, respectively). All three patients recovered completely within a few days.

**Keywords:** foam, sclerotherapy, stroke, varicose veins.

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*Original Article*

## Handlebar injury to femoral vein: case report and review

**Hassouna A., Dennis M.**

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**Abstract:** Handlebar injury varies from minor trauma to life-threatening visceral and vascular damage resulting in a significant morbidity among children. Femoral vein injuries secondary to handlebar trauma are rare but potentially serious. Venous continuity should be restored and several techniques for repair of femoral injuries have been described. We reported a case of femoral vein injury secondary to handlebar trauma in a child and we described techniques used for its repair.

**Keywords:** femoral vein, handlebar injury, vein repair.

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*Original Article*

## Superficial vein ablation for the treatment of primary chronic venous ulcers

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**Abstract:** **Objective:** This retrospective study was undertaken to review our experience with ablation of superficial veinswith significant reflux, using VNUS ClosureFAST RF (radiofrequency) or laser 980 nm, in patients with primary chronic venous ulcers, and also determine its effects in ulcer healing and ulcer recurrence.
**Method:** Included were 25 limbs (18 patients with chronic primary venous ulcers (clinical, aetiological, anatomical and pathological elements [CEAP] classification C6), who underwent endovenous ablation with RF for the axial veins or laser for the perforating veins during a two-year period.
**Results:** Of the 18 patients, there were eight men and 10 women. The median age of the group was 68 (range 37–89) years. The number of ablations done in each leg with an ulcer varied from one to eight, with a median of three. During a follow-up period of 6–12 months, one patient failed ulcer healing despite sequential ablations of refluxing veins. There was one case that developed recurrence of a small ulcer after six months and was successfully treated with a perforator ablation.
**Conclusion:** Endovenous ablation of incompetent superficial veins improves the healing of chronic primary venous ulcers and decreases the recurrence rates.

**Keywords:** venous ulcers, RF ablation, laser ablation.

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