INTRODUCTION

Fegan was the first to describe paraesthesia as a complication of sclerotherapy in 1966. Since then, there have been few reports on this particular complication. Patients undergoing surgical treatment of varicose veins are routinely warned of the possibility of associated sensory nerve damage. This is not the case with sclerotherapy of varicose veins. Two cases of post-sclerotherapy paraesthesia are presented.

Case 1

Patient 1, a 38 year old woman presented with a 10 year history of right lower limb heaviness and tiredness, worse at the end of the day. Her symptoms were consistent with venous congestion and duplex investigation showed incompetence of the right long saphenous vein [LSV] from the knee level to the ankle. Refluxing Cockett’s perforators were also detected at 8cm, 10cm and 21cm above the medial malleolus. The patient underwent ultrasound guided sclerotherapy, using the extended long line echosclero-therapy [ELLE] method with insertion of the catheter below the knee, requiring 4ml of 3% sodium tetradecyl sulphate [STS]. The treated leg was fitted with a grade two compression stockings for seven days.

One week post treatment, the patient noted numbness along the inner side of the lower leg. The altered sensation however did not bother the patient. Examination revealed a 5 x 15 cm patch paraesthesia, with decreased sensation to light touch and pinprick, along the medial aspect of the lower leg. Neurological examination revealed no other abnormality in tone, power, reflexes and coordination. Under duplex examination, the right LSV was non-compressible and in particular, there was no detectable abnormality in the soft tissue underlying the area of paraesthesia. Examination by a neurologist confirmed no abnormal neurological findings.

The patient was reassured of the benign nature of the ‘numbness’ and that the condition was likely to resolve. Six months from its onset, the paraesthesia had spontaneously resolved. The treated LSV remained well sclerosed at six months post-treatment.

Case 2

Patient 2, a 42 year old woman, presented with bilateral heaviness and aching of the legs. Clinically, there was a varicose left superficial anterior tibial vein visible across the anterior shin. Duplex examination of the left lower limb showed an 8 cm segmental incompetence of the LSV just below the knee, with an incompetent superficial anterior tibial vein. The patient underwent UGS of the long saphenous vein with the ELLE method, inserted below the knee, requiring 5ml of 3% STS. The treated leg was fitted with grade two compression stockings for 10 days.

ABSTRACT

Two cases of localised paraesthesia post-ultrasound-guided sclerotherapy (UGS) are presented.

The condition was not distressing for the patients and there was complete resolution of symptoms within six months. The aetiology is likely to be low-level inflammation of the treated vein with resultant damage to adjacent sensory nerves. Reassurance with emphasis on the transient nature of the condition remains central to effective patient management.
Two weeks post treatment, it was noted by the patient that the outer lower leg felt ‘different’. Examination revealed a 12 x 5cm patch-paraesthesia in decreased sensation to light touch and pin-prick, on the anterolateral aspect of the lower leg. Neurological examination of the lower limb showed no abnormality in tone, power, reflexes and coordination. Duplex examination showed both the LSV and the superficial anterior tibial veins were non-compressible indicative of ongoing sclerosis.

The paraesthesia completely resolved within four months from its onset. At the six-month review, the treated LSV including the superficial anterior tibial leg vein remains well sclerosed.

**DISCUSSION**

Commonly occurring post-sclerotherapy complications such as telangiectatic matting and haemosiderin pigmentation are well recognized. Even relatively rare complications such as hypertrichosis post-sclerotherapy have been described. However, the incidence of post-sclerotherapy paraesthesia is difficult to ascertain given the absence of recent published reports (Medline search 1965 - 2000). By contrast, injury to cutaneous sensory nerves such as the saphenous nerve is a well-known complication of surgical stripping of the saphenous veins. The incidence of paraesthesia along the distribution of the saphenous nerve after full length stripping of the long saphenous vein is in the region of 60% and following partial stripping (from groin to the knee) up to 10%. 

While post-sclerotherapy paraesthesia is less commonly encountered, it can occur as these cases demonstrate. Anecdotally, most experienced sclerotherapists have encountered this complication. The presumed aetiology is associated sensory nerve damage during the injection or during the acute phase of controlled vein destruction. Rarely, nerve injury can result from direct injection of sclerosant into a nerve. Intra- or peri-neural injection with a sclerosant has been reported to be extremely painful, followed by anaesthesia. With sclerotherapy of LSV and short saphenous vein [SSV], the saphenous nerve and the sural nerve, both adjacent and even adherent to the respective axial veins, may be at risk.

Both these two cases had unremarkable intra- and post operative proceedings. The absence of intra-operative pain suggests that extra-vascular injection would have been unlikely. Further, the ELLE technique virtually eliminates any risk of inadvertent extra-vascular injection. It is likely that the resultant nerve injury occurred in association with the subsequent process of vein inflammation and sclerosis. In these two cases, the total dose of STS did not exceed 5ml and cannot be considered excessive. Post-treatment, there was no evidence of excessive inflammation such as pain and swelling, nor was there any evidence of clinical thrombophlebitis. In both cases, the localized paraesthesia occurred only in areas overlying varicose veins, suggesting a localized inflammatory effect rather than more proximal truncal nerve involvement.

In both cases, the hypoaesthesia was noted only after the removal of the class two compression stocking and was not distressing for the patient. In both cases, there was complete resolution within six months. Presumably, there is either recovery in the sensory nerve function, or arborisation of adjacent neural network, in the event of permanent nerve damage, resulting in complete restoration of normal sensation over the affected area.

The antero-lateral location of paraesthesia in case two demonstrates the principal of neurovascular correlation. The superficial venous system and its network of tributaries are closely paralleled by a network of cutaneous nerves (Fig 1). In patient 2, although the superficial anterior tibial vein was not specifically injected, there was adequate run-off of sclerosant from the LSV into the refluxing tributary to sufficiently affect the corresponding anterolateral cutaneous nerve of the leg.

**CONCLUSION**

In both cases, the likely cause is low-level vein inflammation affecting adjacent sensory nerves. Reassurance with an expectant approach remains the key to effective patient management. Mention of this complication in patient information materials prior to treatment may alleviate patient anxiety should this complication arise.

**REFERENCES**

7. Negus D. Should the incompetent saphenous veins be stripped down to the ankle? Phlebologie 1987;40:753-7
THE LONG SAPHENOUS VEIN and its tributaries are the PREAXIAL vessels, satellites of the femoral nerve, the preaxial nerve of the embryo.

Femoral tributaries and branches (and knee or genicular)
- 1 et 2: intermediate cutaneous nerve of thigh
  - 2: anterolateral superficial vein of thigh
  - A: presaphenous arch (accessory saphenous vein)
- 3: medial cutaneous branch
  - 3: trunk of long saphenous vein
- P: perforating rami of saphenous nerve
  - P: perforating veins of Dodd and of Hunter’s canal

Leg tributaries (and knee or genicular)
- 4: infrapatellar branch of saphenous nerve: upper leg tributary of the long saphenous vein
- 5: anterior branches of saphenous nerve anterior superficial tibial vein
- 6: saphenous nerve and P a perforating branch: long saphenous vein and P a Cockett perforator
- 7: posterior branch of saphenous nerve: posterior arch vein (sometimes vein of Leonardo)

THE SHORT SAPHENOUS VEIN is AXIAL (sciatic nerve) in the lower calf and POSTAXIAL (posterior femoral cutaneous nerve) from mid-calf to the thigh.
- 8: sural nerve: short saphenous vein in lower calf
- 9: vein accompanying sural nerve (satellite of the nerve in the calf)
- 10: posterior femoral cutaneous nerve: short saphenous vein in the calf and its postaxial extension above its termination (crosse)
- 11: popliteal and femoral branches of the posterior femoral cutaneous nerve: corresponding tributaries of the postaxial extension

SOME VEINS HAVE NO SATELLITE NERVE:
- the termination (crosse) of the short saphenous vein
- intersaphenous communicating veins: C
- vein of Giacomini: G

Figure 1. Neuro-venous correspondence
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