ENDOVASCULAR AND SURGICAL TECHNIQUES

The Varicid: A New Device for Saphenous Sclerotherapy

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Introduction

The varicid (Murat SA, 26340 Saillans, France) is a new instrument which allows effective sclerotherapy of the long saphenous vein during varicose vein surgery. This avoids the need for surgical stripping and provides a safe, effective and simple technique of varicose vein treatment.

Methods

Equipment

The following equipment is required for this procedure (Fig. 1).

(a) A 90cm long hollow plastic tube (T) of 2.5mm internal diameter.
(b) A long 1mm diameter solid plastic catheter of 1mm diameter (F) with a cylindrical bulge (P) in its centre and a further bulge (B) at one end (the head). The shape of the head is shown in Fig. 1. Its lower part is cylindrical and fits onto the end of F, the middle part is cone shaped and the lower part of the cone has a right angled edge (b). On top of the cone is a small sphere which allows the head to be held through the skin at the ankle.
(c) A filling chamber R.

Preparation

The following preparation technique for sclerotherapy is used:

(a) Insert end E of catheter F into tube T through opening A.
(b) Pass piston P through end A of the tubing T.
(c) Pass the reservoir R over piston P.
(d) Insert A into the lower opening of R.
(e) Pour the sclerosant into reservoir R.
(f) Pull E gently to lower the piston into the tube T and sclerosant will pass down with it.
(g) Pull lower part of B into end A of tube. Fix a clip onto end C of the tube to prevent sclerosant leaking out and then cut F 2-3cm outside the tube T.
(h) Remove the reservoir R.

Technique

The following technique is used to sclerose the vein once preparation is complete.

(a) Ligate the saphenofemoral junction under local anaesthetic.
(b) Introduce the varicid (end A and head B first) into the distal end of the divided long saphenous vein in the groin until the head is felt at the ankle.
(c) Bandage the leg with an elastic compression bandage above the head of the varicid from the ankle to the upper thigh.
(d) Remove the clip from tube T and F.
(e) Holding the head of the varicid through the skin at the ankle pull the tube T out of the long saphenous vein. This will cause sclerosing fluid to drip slowly into the long saphenous vein lumen.
(f) Remove the catheter F.
Discussion

This is a procedure which uses an established treatment but with a new technique which allows safe and effective sclerosis of the long saphenous vein. Sclerotherapy of the long saphenous vein has been used all over the world for several decades with a variety of different sclerosants, and has been shown to be an effective treatment of varicose veins associated with long saphenous vein incompetence. However it requires multiple injections which may have to be repeated on a number of occasions.

The varicid provides highly efficient sclerosis of the long saphenous vein using only a small volume of...
Sclerosant, (4ml of 3% Sodium Tetradecyl Sulphate). Sclerosis by external injection would be difficult to achieve using this volume of sclerosant.

Since September 1992 the varicid has been used by Dr Castalat at the Clinique Generale at Valence sur Rhone in France and also by Professor Maleti at the Institute of Surgical Pathology in Modena in Italy. More than 60 patients have been treated without complication except for occasional inflammation of the overlying skin.

This technique differs from surgery alone in the following:

(a) It can be performed under local anaesthetic.
(b) The technique does not require stripping of the long saphenous vein with its associated morbidity but nevertheless destroys the long saphenous vein.
(c) It avoids complications such as saphenous nerve damage, lymphatic injury, and haematoma formation.
(d) It avoids the need for avulsion incisions to remove the long saphenous vein below the knee.
(e) The technique can be performed as an “out-patient” procedure.

It differs from sclerotherapy alone in the following:

(a) It avoids the need for multiple external injection sites.
(b) It avoids thrombosis in the vein as the long saphenous vein is empty and the walls opposed prior to delivery of the sclerosant.
(c) The sclerosing liquid is dripped into the vein regularly, one drop every centimetre, no matter at what speed the catheter is removed and provides an even distribution of sclerosant.
(d) There is no risk of skin ulceration due to injection of sclerosant outside the vein.
(e) There is no risk of intra-arterial injection.
(f) There is total sclerosis and repeat treatments are not necessary because the saphenofemoral junction is also ligated.

In summary this technique allows delivery of sclerosant throughout the long saphenous vein and therefore destruction of the whole vein through a single groin incision with minimal morbidity. This is not achievable by other treatment methods.

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