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Ultrasound Guided Foam Sclerotherapy for Varicose Veins

Summary

Foam sclerotherapy may be used alone, or in combination with catheter therapy (laser, radiofrequency or mechanochemical).

Advantages of Foam Sclerotherapy:

- Foam sclerotherapy is quick, safe and effective
- Easily repeatable
- Excellent for complex or recurrent veins
- Can be performed without stopping blood thinning medications.

Disadvantages include:

- Possible need for a second treatment (around 15%)
- Skin staining (around 5-10%) which may take 18-24 months to settle
- Lumpiness / tenderness after 3-4 weeks
- Longer to achieve final result compared with surgery
- Higher recurrence rate if used alone when compared to catheter or surgical treatment of veins.

What is sclerotherapy?

Sclerotherapy (or "injection treatment") involves injecting a chemical substance (sclerosant) into the veins which causes their walls to glue together so that they close off and shrivel up. Whilst it is useful for treating visible varicose veins, it does not necessarily treat the underlying incompetent trunks that fill the visible varicose veins. Therefore sclerotherapy is often combined with catheter therapy.

What is different about ultrasound guided foam sclerotherapy?

When first used, sclerosant was injected as a liquid. Foam sclerotherapy means injection of sclerosant mixed with a small quantity of air (or other special gas) to form foam.

This kind of treatment was developed in the late 1990s and has become increasingly popular. The foam (thousands of tiny air bubbles coated with sclerosant) spreads rapidly and widely through the veins, pushing blood out of the way and therefore achieving better contact with the vein wall. The foam causes veins to go into spasm and this is one reason it is more effective than ordinary sclerotherapy without the use of foam.

As long as the volume of foam is kept to a minimum, any "Spilling" into the deep veins is diluted and causes no significant problems.

Ultrasound guidance means that a scanner is used to show which veins need to be injected and to guide the placement of each needle accurately in the veins. The ultrasound is also used to check where the foam goes when it has been injected. Some surgeons have an assistant to help with the imaging; others perform the procedure alone.

Which varicose veins are suitable for foam sclerotherapy?

Foam sclerotherapy is effective for treating varicose veins, even if they are subject to a head of pressure from an underlying incompetent trunk. Varicose veins may gradually return, but they are often suitable for further treatment if required.

Foam sclerotherapy seems to be particularly useful for varicose veins which are complex or awkward to treat by surgery – for example varicose veins which have recurred following previous operations and veins for which there is no very obvious "feeding source" that might be effectively dealt with by an operation.

What does foam sclerotherapy involve?

Foam sclerotherapy involves one or more injections into the veins of the leg. These injections are carried out with the help of ultrasound imaging to be sure that the tip of the needle is correctly positioned in the vein.

The treatment is done with you lying on a couch or theatre table, which may be tilted during the treatment. You may have simultaneous catheter therapy.

Following injection, compression is applied to the treated leg which may involve an elasticated bandage and/or a firm stocking. We normally advise wearing these for five days. **During that time you cannot get the bandaged part of the leg wet in a bath or shower.**

Some people need more than one treatment session of foam sclerotherapy. If both legs need treatment then two sessions are usually necessary. This is because we limit the amount of foam we use to minimise the risk of side effects. In addition, some peoples' varicose veins do not respond as well to foam injections as others.

What happens after the injections?

You should go for a walk for five or ten minutes immediately after the injections to be sure that blood has been pumped through the veins of the leg by muscular activity. You should then return to normal activity, walking as usual and being as active as the bandages and stockings allow. Otherwise there are no special restrictions apart from keeping the bandaged part of the leg dry.

You can drive a car so long as you feel able to do so (most people have no problem with this and drive themselves home after treatment).

The bandages and stockings should worn be for five days. If the bandages slip or become very uncomfortable they can be removed and you can then wear the stocking only (or reapply the elasticated bandage) for the required number of days.

We normally check on the results of your foam treatment in the outpatient clinic, or in a further foam clinic, after about three months.

What problems or side effects may occur?

Hardness and lumpiness

It is common for the treated veins to become hard and lumpy before they gradually shrivel and settle down. Hardness and lumpiness of the treated veins usually occurs after 3-4 weeks and sometimes take several months to settle.

Inflammation and tenderness

The injected areas of veins often become inflamed and tender for a few days (occasionally for weeks). This is because foam sclerotherapy works by causing inflammation of the vein walls (similar to "thrombophlebitis") which causes the walls of the veins to stick to one another, so sealing the vein off. Sometimes inflammation of the veins can be severe and painful. If this occurs then an anti-inflammatory painkiller such as ibuprofen (Nurofen) will help to settle the symptoms, either as tablets or topical gel.

Bruising and discolouration

Bruising may occur after foam sclerotherapy. Sometimes brown discoloration occurs over treated veins: this usually fades, but occasionally some discolouration may persist. This is an important risk to consider if you have pale skin and if any cosmetic blemish would be distressing to you.

Thread veins

Any kind of sclerotherapy can occasionally be followed by the appearance of tiny red or blue veins in the area which was injected. This is uncommon.

Skin damage

If sclerosant escapes from a vein during injection it can damage the skin, causing a small area of painful inflammation or blistering. Very rarely a patch of skin can be so badly damaged that a small ulcer forms, which requires dressings until it has healed and which leaves a scar.

Deep vein thrombosis (DVT)

This is a risk because small amounts of foam can enter the deep veins. This seldom has harmful results because the bubbles disperse quickly, but there is a small risk of DVT and also of blood clot passing to the lungs (pulmonary embolism). The risk of DVT is about 1 in 100 (1%) and the risk of pulmonary embolism is much less than 1%.

Headaches, and disturbances of vision

These have been described as occurring occasionally after foam sclerotherapy but they are uncommon and settle quickly. They are more common in people who suffer from migraine.

Other concerns – these are rare

There has been concern that small amounts of foam can circulate in the bloodstream and could pass through small "holes in the heart" which are present in otherwise fit people. Theoretically this could allow foam to pass to the eye (causing visual disturbance) or the brain (with the risk of a temporary or permanent stroke). There have been reports in the medical literature of stroke, seizures and heart attacks but none of these have occurred in many thousands of patients treated in the UK, including those in Exeter.

There have also been reports of visual disturbances, temporary chest tightness and dry cough. We limit the amount of foam we use at any treatment session to avoid these problems.

Will the varicose veins come back?

Varicose veins may reappear gradually after any kind of treatment. Foam treatment appears to produce a good result after five years in about two thirds of people after a single treatment. Other kinds of treatment can give rather better long term success, but they are less simple to have done and to repeat than foam sclerotherapy.

If varicose veins do recur, then further treatment should be readily possible.

What should you do if there is a problem?

If the bandages or stockings become loose and displaced, or if they are very uncomfortable, they can be removed and re-fitted.

If you have been given a stocking then that can be worn for five days without the pads and bandages, if those have been very uncomfortable.

If you develop pain or inflammation, or if you are worried about your leg, consult your General Practitioner first. In the unlikely event of you developing any severe symptoms at night or at the weekend, then you should attend the Emergency Department, who will advise you and who may involve the duty surgical team.

If you have any other worry or query you can contact the secretary of the consultant who treated you, through the hospital switchboard on **01392 411611**.

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