



Spire

Manchester Hospital

VNUS™ Closure Procedure for Varicose Veins

Initial Consultation

This takes place at Spire Manchester's out-patient clinic **with same day Duplex Ultrasound** – the consultant will review the test and discuss the treatment needed at the same visit.

Pre-Operative Instructions

Compression stockings (Class II – 20 to 30 mmHg pressure), are required for the day of your procedure. You will be measured for these after your first consultation. We will also take swabs to make sure that you are not a carrier of the MRSA superbug. This is a routine screen performed in all patients that are to undergo an intervention or planned hospital admission.

If you take medication routinely, take it on the day of the procedure unless directed otherwise.

You may eat and drink normally before your procedure unless you specifically requested a general anaesthetic in which case you will need to fast for 6 hours before the procedure.

Wear loose clothing to the office the day of your procedure. You are not allowed to drive after the procedure so you will need to make arrangements for a relative or friend to pick you up. Alternatively our staff at reception can book a cab for you.

VNUS™ Procedure

This procedure takes place in our **out-patient department** unless you request (and your consultant agrees it is appropriate for your operation to be carried out under) a general anaesthetic.

We treat the cause of the varicose veins, as well as the veins themselves. If your first scan shows that there is major valvular incompetence (ie the blood is not flowing in the right direction along one of the main superficial leg veins), then the best result is likely to be achieved with a multi-step procedure. First we would use VNUS™ Closure to seal the major vein since this would be the source of your varicose veins and also likely to be the cause of any leg aches and pains.

At the next visit, we will discuss how to take care of the visible varicose veins. These procedures will vary, depending on the size and extent of your varicose veins. The best procedure for you will be identified and discussed at your follow-up visit. The most commonly performed procedure required after VNUS™ Closure is ambulatory phlebectomies.

Recent studies indicate that the VNUS™ Closure procedure exhibits long-term enduring efficacy and persistent patient symptom relief. An international study* showed 98% of treated veins were successfully closed.

As with any medical intervention, risks and potential complications exist with the above procedures. Although these are extremely rare, one must be aware of them.

Potential complications include, but are not limited to:

- Vessel perforation
- Pulmonary embolism
- Hematoma
- Paraesthesia (numbness)
- Recurrent veins
- Reactions to the local anaesthetic
- Skin Dimpling
- Thrombosis
- Phlebitis
- Infection
- Skin burn
- Residual veins
- Hypertrophic scarring

VNUS™ Closure Procedure

Map the Saphenous Vein. A typical procedure begins with non-invasive ultrasound imaging of the varicose vein to trace its location. This allows the Consultant to determine the site where the closure catheter will be inserted and to mark the desired position of the catheter tip to begin treatment. The area of skin superficial to the vein to be treated is covered with a local anaesthetic cream (Emla). This will numb the pain making the procedure very easy to tolerate.

Insert the Closure Catheter. After the Consultant accesses the saphenous vein, the closure catheter is inserted into the vein and advanced to the uppermost segment of the vein. The physician then typically injects a volume of dilute anaesthetic fluid into the area surrounding the vein. This numbs the leg, helps squeeze blood out of the vein and provides a fluid layer outside the vein to protect surrounding tissue from heat once the catheter starts delivering radiofrequency (RF) energy.

Deliver RF Energy and Withdraw Catheter. Non-invasive ultrasound is used to confirm the catheter tip position. The physician then activates the RF generator, causing the electrodes at the tip of the catheter to heat the vein wall to a target temperature of 120°C. As the vein wall is heated, the vein shrinks and the catheter is gradually withdrawn. During catheter pullback, the RF generator regularly adjusts the power level to maintain target temperature to effectively shrink collagen in the vein wall and close the vein over an extended length.

Ambulatory phlebectomies (Multiple Avulsions under Local anesthetic)

This procedure allows the removal of large surface varicosities through very small incisions that need no stitches. It may be performed following the VNUS™ Closure procedure or separately if there is no major superficial valvular incompetence on ultrasound scanning.

The visible veins are delineated with ink with the patient standing and the area of skin over them is covered with a local anesthetic cream (Emla). Skin incisions are used to extract veins with a phlebectomy/vein hook. A hook is inserted into a micro-incision in the leg. A section of the vein is hooked and then removed through the incision. With this procedure, a compression stocking is worn for two weeks. This minimizes swelling and discomfort and allows for proper healing.

The results of the procedure have been excellent both from a cosmetic and patient satisfaction point of view. There is however a very rare risk of **hypertrophic scarring** or **skin dimpling**. **Skin pigmentation** at the site of the varicose vein can occur and is usually temporary.

How successful is ambulatory phlebectomy?

Long-term results after phlebectomy are excellent as long as if the patient has sapheno-femoral or sapheno-popliteal incompetence the appropriate saphenous vein is ablated using VNUS™ prior to the phlebectomies/avulsions.

Post-op instructions

Diet: Return to normal the day of your surgery.

Pain control: You may take Paracetamol (Panadol) or Ibuprofen (Nurofen) as directed. Usually 1g of paracetamol every 6hrs and 400mg of ibuprofen every 6 hours

Activity Begin walking the day of surgery. Avoid prolonged standing in one place. Any time you are sitting, elevate your leg at least 90 degrees.

You may slowly return to your normal level of physical activity right after the procedure. The more you walk the better. Avoid heavy lifting for 72 hours (nothing heavier than 20 lbs). You may return to work the following day.

If you go to a gym, you may return the day after the procedure but only do upper body exercises. Leave one week before starting lower body exercises. You may however do fast walking on a treadmill after the second day and build up depending on how you feel.

You may resume long distance travel after one week.

Stockings: The Class 2 Graduated Compression Stockings should remain on for a minimum of 2 weeks. You must not remove them at all for the first 5 days. After that you may remove them only to have a quick shower. When removing the stockings have legs elevated and rest for 5 minutes before walking to shower.

Driving: You may drive when you are able to painlessly perform an emergency brake. Try this in a stationary vehicle before driving again. Most patients are able to drive the day after the procedure.

Normal Post-Operative Changes:

Swelling: It is common to have swelling and some bruising on the leg. This is more common around the sites of the phlebectomies/avulsions than the site where the main superficial vein was ablated. This is normal and is caused from a combination of oozing from the avulsed veins and pressure from the stocking. You should continue to walk.

Occasionally, you may actually be able to feel the treated vein that has been occluded. This will feel like a cord under your skin. Massaging the area vigorously will help and this will improve slowly after your surgery.

Bruising: You may notice some bruising after removal of your bandage. This can occur along the track of treated veins, areas of skin incisions, and at the ankles. This will improve gradually after surgery.

Numbness: If numbness occurs, it is caused by irritation to the nerve that runs alongside of the treated vein. This will resolve slowly. You should note improvement each week. Massaging along the track of the treated veins 3-4 times a day can help with the numbness.

You may also get very small patches of numbness around the avulsion sites. This is rare and could be due to damage of small nerves supplying the skin in that area when pulling out the veins. This is known as **Avulsion Site Paresthesia**.

Pain: Rarely, patients experience discomfort and redness along the path of treated veins approximately one week after your procedure. This is an inflammatory reaction your body is having to the occluded vein. Stretching about 3-4 times a day can help with the discomfort.

NOTE Elevation of the legs for 10 to 15 minutes during the first month after your surgery will decrease any swelling and/or aching.

If you have had a General Anaesthetic:

1. Do not drive a car or operate complicated machinery for 24 hours.
2. Avoid making important decisions or signing important papers for 24 hours.
3. No alcoholic beverage for 24 hours.
4. Diet of liquids or light nourishment for your first meal. If you tolerate this, you may resume your normal diet.

Follow-up at 6 weeks

In Out-patient Department you will see your consultant or a member of his team

Benefits of VNUS™ Closure and/or Ambulatory Phlebectomies:

Relief of symptoms

Outpatient procedure

Resume activities typically within a day

Good cosmetic outcome with minimal or no scarring, bruising, or swelling

* Rautio T, Ohinmaa A, Perala J, Ohtonen P, Heikkinen T, Wiik H, Karjalainen P, Haukipuro K, Juvonen T. Endovenous obliteration versus conventional stripping operation in the treatment of primary varicose veins: A randomized controlled trial with comparison of the costs. *Journal of Vascular Surgery* 2002;35(5):958-965.

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