

## VARICOSE VEINS

### What are varicose veins?

Varicose veins are enlarged tortuous veins in the leg and are extremely common. A study in Edinburgh in the 1990s found that 40% of men and 32% of women had significant varicose veins. Minor varicose veins and 'thread veins' were found in 80% of people. Clearly, not everyone will need treatment for their varicose veins.

Veins work by carrying blood back to the heart. There are two main systems of veins in the legs, the deep veins and the superficial veins. The muscles in the calf around the deep veins act as a pump, forcing blood up the leg towards the heart. This is helped by a series of one-way valves which prevent blood falling back down the leg with gravity, such as standing or sitting. The superficial veins lie under the skin and have a number of branches feeding them. Blood from these veins again passes through a series of one-way valves to join the deep veins, usually in the groin and behind the knee. If these valves fail then blood may flow the wrong way down the veins. With superficial veins, these become stretched and twisted over time becoming varicose veins.

### What are the causes of varicose veins?

There may be an in-built weakness in the valves, which explains why varicose veins can run in families. This is the most common cause. Pregnancy often makes the situation worse because the baby's head can press on veins inside the abdomen causing further leaking of the valves in the legs. The veins often improve after the baby is born but are unlikely to disappear completely. Occupations that involve long periods of standing as well as obesity may also make the situation worse. A previous deep vein thrombosis (clot) may have caused valve damage. Thrombosis may happen after a fractured leg, during pregnancy or after admission to hospital, particularly with any abdominal or lower limb surgery. Long-haul flights might also (rarely) cause this problem. Very rarely, clots form due to an inherited problem in the blood clotting mechanism.

### Symptoms

In many people, varicose veins cause no symptoms whatsoever, except for their appearance, which might be embarrassing. Cosmetic appearance alone is not usually a good reason for undergoing treatment and is not funded under the NHS. Common symptoms include aching over the veins, general discomfort in the leg, pins and needles and a feeling of heaviness that is usually worse at the end of a day. Leaking valves in deep veins may also cause lower limb swelling. Longstanding varicose veins may cause changes in the skin colour around the ankles, with thickened brown and white areas and venous eczema (red rash). If these changes persist, then the leg may be at risk of developing an ulcer, which is often caused by a seemingly minor injury. Varicose veins may at times become hard, red and tender i.e. thrombophlebitis. Phlebitis is treated by resting the leg, using an elastic stocking and anti-inflammatory painkillers, such as ibuprofen. Very rarely varicose veins bleed after knocking them. Elevating the leg and firm pressure over the bleeding area should stop this; you should however call your GP or attend the A&E Department if the bleeding is severe.

## [Outpatient clinic and investigations](#)

The doctor will use an ultrasound probe (hand-held Doppler) to 'listen' to blood flow through your veins. If your veins are very straightforward, this may be the only test necessary. If you have recurrent varicose veins, if your symptoms are not typical or there is any question of a problem with the deep veins, then you will be sent for a detailed ultrasound scan of your veins (Duplex scan). This will clearly show all the superficial and deep veins and will enable a decision to be made about the best treatment. Further tests may rarely be needed but these would be discussed with you.

## [Treatment](#)

### *Conservative treatment*

You might be advised that no treatment is needed for your varicose veins. If your symptoms are not typical, removing your veins may make no difference to the pain or discomfort you are getting. You may be asked to lose weight. Support stockings often relieve the aching and heaviness due to varicose veins. These can be bought from a high-street chemist. Either your GP or my team might recommend a stronger 'graduated compression stocking', which will be prescribed for you. These should be renewed every 4 to 6 months. If the stockings are worn regularly, many patients find that their symptoms improve. Stockings will not be suitable for every person, particularly if there is any problem with the blood supply (arteries) to the legs.

### *Sclerotherapy (injections)*

Your doctor may have mentioned injection treatment for varicose veins. The procedure is performed as an outpatient and involves injecting a strong detergent into the veins to cause the walls of the vein to stick together. This is only useful for small varicose veins, such as those left after surgery.

Ultrasound-guided foam sclerotherapy is a newer modification of this technique and can be used to treat larger veins, as an alternative to surgery. A further information leaflet which explains the risks and benefits of this treatment in more detail will be given to you if this treatment is being considered.

### *Surgery (stripping)*

This is a tried and tested method of treating varicose veins and is discussed in detail below.

### *Endovenous treatments*

There are some newer less invasive treatments for varicose veins which can be carried out under local anaesthetic i.e., radiofrequency ablation (VNUS Closure<sup>TM</sup>) and endovenous laser. These are not suitable for all patients with varicose veins. Radiofrequency ablation is described in detail below.

## [Surgery for varicose veins](#)

### *Before your operation*

If your operation is planned as a day case, you will have been seen and assessed by the Day Surgery staff before admission. You will be asked to come at 08:00 for a morning operating list or late morning for an afternoon operating list. Normally, you can return home the same day, although it may be necessary for you to stay overnight if there are problems, such as sickness after the anaesthetic. If your operation is scheduled as an inpatient, you should expect to come in on the morning of surgery

and will usually go home the following morning. You should stop the oral contraceptive pill at least 4 weeks before your operation. This will be discussed at your outpatient appointment.

On admission, the anaesthetist will explain the general anaesthetic to you. The groin area (for operations to deal with this valve) and any hair in the affected leg will need to be shaved. The operating surgeon (I or one of my trainees) will see you and mark your veins with an indelible pen. This helps us find your veins while you are asleep. You will need to sign a consent form. You will be given a single injection under the skin (heparin) to help prevent deep vein thrombosis.

### *The operation*

The operation is in two parts. Firstly, the cause of the varicose veins is dealt with by making an incision in the groin and/or behind the knee to tie off the vein containing the leaking valve as well as its branches. The vein is then stripped by inserting a fine metal rod into the vein at the groin which is brought out through a small skin incision (3 to 10 mm long) just above or below the inside of the knee. The vein is tied to the rod and removed by turning it inside out. In the case of a leaking valve behind the knee, we do not usually strip the vein out. The incision is closed with an absorbable stitch, which does not need removing. Local anaesthetic is injected into the wound to reduce post-operative pain. The aim of the procedure is to prevent varicose veins recurring by dealing with the underlying cause.

Secondly, the marked veins in the thigh and calf are then removed through tiny incisions about 2 to 8 mm in length, depending on the size of the veins. If your varicose veins are extensive, there may be quite a lot of incisions. These incisions will be closed with paper tape (Steristrips). It is quite normal for a little bleeding to occur through these incisions. The legs will then be bandaged tightly.

### *After your operation*

You will be prescribed painkillers, although often the pain is not bad enough to need these. For inpatients, the nursing staff will remove the bandages the following morning and fit an elastic stocking. This should be worn day and night (except for washing) for the first week, after which it should be used during the day only for a further 2 weeks. For day case patients, you will be given the stocking to take home and arrangements made for either the district nurse or your own practice nurse to remove the bandages and fit the stocking.

You can walk as soon as you are able and should aim for frequent walks. You should avoid driving until there is no discomfort in the leg i.e. until you are safe to do an emergency stop. Otherwise, you may return to normal activity when you are ready. This will depend on your occupation and lifestyle. If your job involves prolonged standing or driving, then it would be sensible to have 2 weeks off work.

There is often quite a large amount of bruising in the thigh after the operation (from stripping of the vein), which may take 3 to 4 weeks to resolve. Most people find the leg uncomfortable, rather than painful and this usually lasts for no more than 2 to 3 weeks. No matter how carefully the operation is performed, there is a small risk of skin nerve damage during the operation (about 5%). This can lead to tingling or numbness in part of the leg or foot and rarely can be persistent and distressing. Usually, the sensation gradually improves though it may not return completely to normal. If you have any

concerns about this issue, please do not hesitate to ask the team. With any operation on varicose veins there is a chance that some residual veins may still be visible. Further varicose veins can also develop months or sometimes many years later.

#### *Follow-up*

You do not need to be seen routinely in the outpatient clinic. At 3 months, the bruising and lumpiness will have gone and you will be left with small red lines at the site of the incisions. These may take a further 9 months to completely disappear. Any problems can usually be resolved with your GP. If he or she is at all concerned, then we will be contacted and arrange to see you.

### Radiofrequency ablation (VNUS Closure™)

#### *The procedure*

The surgeon will discuss the procedure with you and mark the veins that need to be treated. You will be asked to sign a consent form. The procedure is carried out in the operating theatre under sterile conditions. The procedure is normally performed under local anaesthetic although for some patients a general anaesthetic may be needed e.g. if further veins need to be removed. Ultrasound imaging is used to confirm the location of the vein to be treated. After injecting local anaesthetic a needle is then placed into the vein and the heating catheter passed through this. A dilute solution of local anaesthetic is then injected around the vein to absorb any heat. Radiofrequency energy is then applied to seal the vein.

#### *After your procedure*

You will need to wear a compression stocking on the affected leg for 1 week, day and night, and then 2 weeks during the day when you are up and about. You will be able to mobilise immediately (if under local anaesthetic) and all patients can go home on the day of the procedure. Simple painkillers such as paracetamol or ibuprofen can be taken although will seldom be needed for more than 24 hours. Some tenderness, bruising and skin discolouration may occur for up to 10 weeks after the procedure. This is normal and will resolve. As with conventional varicose vein surgery, there is a very small risk of a deep vein thrombosis. If the leg becomes excessively painful, then you should contact your GP immediately for advice.

#### *Follow-up*

You will be seen in the outpatient clinic around 6 weeks after the procedure and may also have a follow-up ultrasound scan.

Further information on VNUS Closure is available from NICE: [www.nice.org.uk/guidance/IPG8/](http://www.nice.org.uk/guidance/IPG8/)

**Mr Paul V Tisi MS FRCS(Gen.Surg)**  
**Consultant Vascular Surgeon**  
**Bedford Hospital**