

# VENOUS DISEASE



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*Venous disease is very common and can lead to a significant impact on patient quality of life. The management of venous disease, including varicose veins, is a major source of expense within the NHS.*

Varicose veins likely represent a primary valve problem, largely inherited, though the precise mechanism remains unknown. Present in up to 40% of the population of the western world, around 1 in 4 develop skin changes associated with chronic venous hypertension (eczema, haemosiderinosis and pigmentation (**FIGURE 1**), putting them at risk of ulceration in the long term (**FIGURE 2**). They also cause an array of symptoms, including leg swelling.



Figure 1



Figure 2

## THE MODERN ASSESSMENT OF VENOUS DISEASE

Our understanding of the mechanisms of valve dysfunction and venous disease (**FIGURE 3**), the rationale for investigation and management, and the treatment options available have advanced dramatically over the last 10 years or so. Thankfully, the days of vein stripping are largely behind us, and have been replaced by a number of innovative, less

invasive and much more successful therapies.

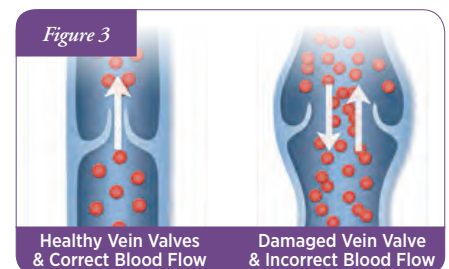


Figure 3

Healthy Vein Valves  
& Correct Blood Flow

Damaged Vein Valve  
& Incorrect Blood Flow

Recent years have seen significant rationing of interventions for varicose veins. This is partly due to the relatively poor outcomes from vein stripping surgery, along with low rates of patient satisfaction after traditional surgery.

However, one of the problems with rationing is that it is very difficult, despite many large-scale studies, to predict which patients will progress from minor varicose veins to skin problems and ulceration associated with chronic venous hypertension.

In the light of this NICE changed its guidelines for the management of patients with varicose veins in 2013, proposing the referral and active management of all patients with symptomatic varicose veins.

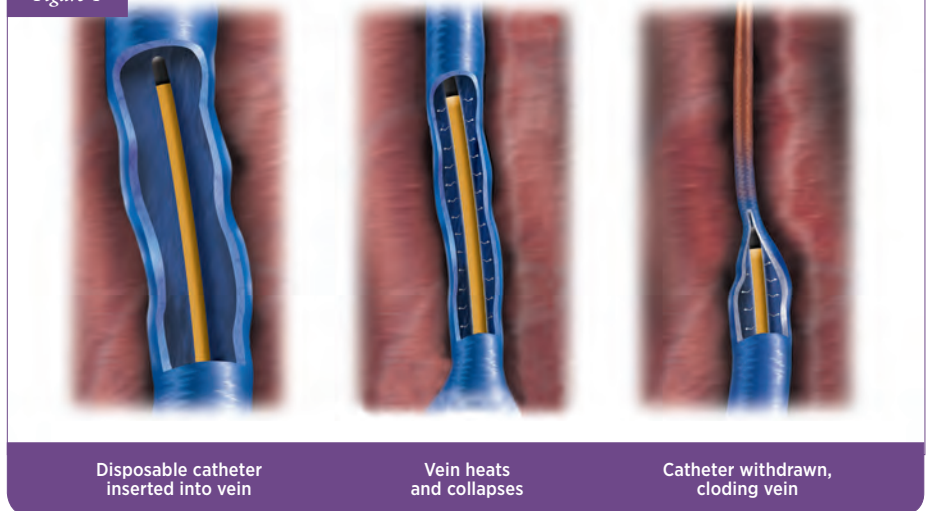
Clinical assessment for all patients with symptomatic varicose veins should include a 'duplex' ultrasound scan. This is performed using a small hand held device, on a 'one-stop' basis in clinic. Further investigation is rarely necessary, unless pelvic or

### LEARNING POINT 1:

#### **NICE guideline (CG168, July 2013) recommends:**

- 1) That all symptomatic varicose veins and venous disease be referred to a vascular surgeon
- 2) The use of duplex ultrasound to confirm the diagnosis of varicose veins, the extent of truncal reflux, and to plan treatment for people with suspected primary or recurrent varicose veins

Figure 4



proximal deep venous problems are identified on ultrasound.

## THE MODERN MANAGEMENT OF VENOUS DISEASE

Compression is no longer recommended for the management of varicose veins, due to poor tolerance/compliance and cost. They do, however, remain the mainstay of treatment for deep venous reflux, and may be useful to determine whether symptoms are attributable to varicosities. In general, symptomatic veins should be treated using one of the modern therapies available.

## ENDOTHERMAL ABLATION

The guidelines for intervention also changed in 2013, in the light of a

number of large clinical trials investigating the roles of modern vein therapies, largely using heat to 'ablate' the truncal veins, a technique called 'endothermal ablation'. These usually involve the catheterisation of the truncal vein with a fine laser or radiofrequency probe under ultrasound guidance, instillation of local anaesthetic around the vein, followed by a brief period of heating of the vein to effectively close it from the circulation (FIGURE 4).

They are very safe, with rapid recovery, excellent cosmetic and clinical outcomes, and have been shown to be cost effective therapies compared to stripping and conservative management (FIGURE 5).

## LEARNING POINT 2:

A large number of clinical trials and studies have demonstrated that the early and late outcomes after endothermal ablation (radiofrequency and laser) are significantly better than for traditional vein surgery, including satisfaction, pain levels, return to normal activity, complications and recurrence rates. Some have demonstrated less pain after radiofrequency ablation compared to laser.

## LEARNING POINT 3:

### **NICE guideline (CG168, July 2013) recommends:**

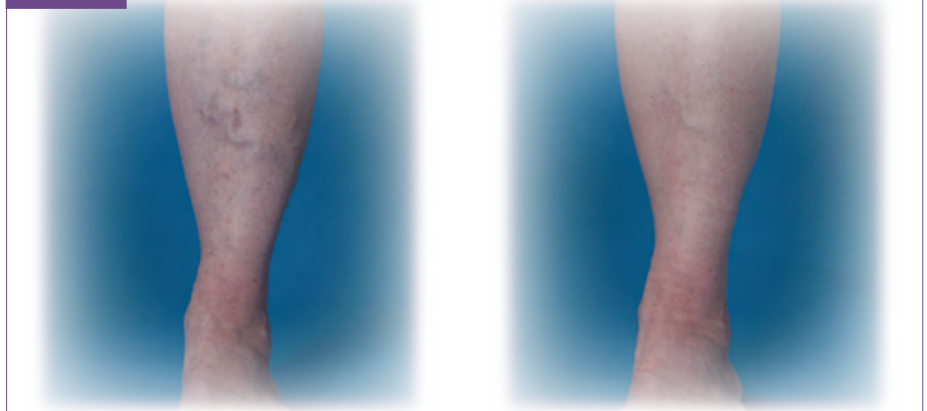
For people with confirmed symptomatic varicose veins and truncal reflux:

- Offer endothermal ablation
- If endothermal ablation is unsuitable, offer ultrasound guided foam sclerotherapy
- If ultrasound guided foam sclerotherapy is unsuitable, offer surgery.
- Do not offer compression hosiery to treat varicose veins unless interventional treatment is unsuitable.

## FOAM SCLEROTHERAPY

Ultrasound guided foam sclerotherapy involved a truly ambulatory, outpatient based

Figure 5



Pre-treatment

3 months post-treatment

treatment option, whereby a chemical sclerosant is mixed with air and injected into the varicose veins. It is very safe, very well tolerated and inexpensive. While it is seldom used as a primary therapy due to a slightly higher failure and recurrence rate than endothermal techniques, it is a very useful adjunctive therapy to endothermal ablation.

## CLARIVEIN®

ClariVein® is an innovative procedure which treats the cause of varicose veins, more quickly and simply than other procedures. The ClariVein® treatment only requires a single injection site, without the need for any anaesthetic, allowing for a virtually pain free experience with minimal bruising and lasting results (FIGURE 6).

The ClariVein® catheter is inserted into the vein under ultrasound guidance. The tip of the catheter then rotates, causing the vein to go into spasm. At the same time a chemical is sprayed into the vein which effectively seals it, preventing the varicose vein from returning. A number of studies have demonstrated excellent outcomes and high levels of satisfaction.

Figure 6



## VENASEAL™

The VenaSeal™ closure system also requires no anaesthetic. It represents a non-thermal, non-sclerosant procedure that uses a proprietary medical adhesive delivered into the vein, to close the vein (FIGURE 7). Clinical studies have demonstrated that the procedure is safe and effective though long term outcome data are awaited.

## COST EFFECTIVENESS OF MODERN THERAPIES FOR VARICOSE VEINS

While state funding for venous interventions diminishes, with many areas now seeing rationing of referral and intervention for patients, so more evidence is accrued to demonstrate that modern therapies, especially when performed in an office setting, is

highly cost effective compared to conservative approaches.

This is particularly the case for patients with established skin changes and active or previous ulceration. Various clinical studies have demonstrated that intervention will prevent ulceration and, in particular, reduce dramatically the rate of ulcer recurrence.

### LEARNING POINT 4:

Modern treatments for varicose veins, which should be individualised to each patient, are more effective than stripping, result in significant clinical benefit and improvements in quality of life, and are cost effective compared to conservative therapy, especially for patients with skin changes and ulceration.

## THROMBOPHLEBITIS

Thrombophlebitis has long been misunderstood as a clinical entity and is now recognised to be less benign than previously thought. Inflammation can migrate rapidly through truncal varicosities, causing acute superficial thrombosis. This can spread to the deep veins, leading to deep vein thrombosis. Management should include an urgent referral for a 'one-stop' clinical assessment and duplex ultrasound scan.

Management options, depending on the extent and rapid spread of the condition, include anticoagulation and ablation of the proximal venous trunk to prevent further spread.

## CONCLUSIONS

*The management of venous disease has improved dramatically over the last 10 years or so. Endothermal ablation and other minimally invasive techniques have largely replaced traditional surgery as the gold standard for intervention.*

*Due to the large number of patients that ultimately develop problems associated with chronic venous hypertension, all patients with symptomatic varicose veins should be assessed, and offered if suitable, one of the modern treatment modalities available.*



Figure 7