NICE National Institute for Health and Care Excellence

NICE guidance

Radiofrequency ablation of varicose veins

HealthTech guidance
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www.nice.org.uk/guidance/htg2

Your responsibility

This guidance represents the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take this guidance fully into account, and specifically any special arrangements relating to the introduction of new interventional procedures. The guidance does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

All problems (adverse events) related to a medicine or medical device used for treatment or in a procedure should be reported to the Medicines and Healthcare products Regulatory Agency using the Yellow Card Scheme.

Commissioners and/or providers have a responsibility to implement the guidance, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this guidance should be interpreted in a way that would be inconsistent with compliance with those duties. Providers should ensure that governance structures are in place to review, authorise and monitor the introduction of new devices and procedures.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Contents

This guidance replaces IPG8.

This guidance should be read in conjunction with CG168.

1 Recommendations

1.1 Current evidence on the safety and efficacy of radiofrequency ablation of varicose veins appears adequate to support the use of this procedure as an alternative to saphenofemoral ligation and stripping, provided that the normal arrangements are in place for consent, audit and clinical governance.

2 The procedure

2.1 Indications

2.1.1 Symptomatic venous insufficiency is common. Saphenous vein insufficiency is the most common form of venous insufficiency in those presenting with symptoms, which include pain, leg fatigue, oedema, skin changes and venous ulcers.

2.2 Outline of the procedure

2.2.1 Radiofrequency ablation of varicose veins involves heating the wall of the vein using a bipolar generator and catheters with sheathable electrodes.

2.2.2 The long saphenous vein is accessed above or below the knee, either percutaneously via an intravenous cannula/venepuncture sheath or via a small incision. The catheter is manually withdrawn at 2.5 to 3 cm/minute, and the vein wall temperature is maintained at 85°C.

2.3 Efficacy

2.3.1 Evidence indicated that radiofrequency treatment resulted in immediate occlusion of 90% to 100% of long saphenous veins. In one study, patients who received radiofrequency ablation had less pain and required less analgesia compared with those who had standard surgery (stripping).

2.3.2 In general, the evidence showed that fewer than 5% of patients continued to have symptoms, such as leg pain, leg fatigue, oedema and noticeable varicose veins, after the procedure. There were high patient satisfaction rates. For more details, see the overview.

2.3.3 The Specialist Advisors reported that the long-term results of this procedure

were unknown, though in the short-term it seemed efficacious.

2.4 Safety

2.4.1 One study showed similar postoperative complication rates of approximately 50% in the radiofrequency ablation and stripping arms, including minor complications. Other studies showed that skin burns occurred in 2% to 7% of patients who had radiofrequency ablation. Paraesthesiae occurred in 0% to 15% of patients, and were more common in patients whose treatment was below the knee. Clinical phlebitis occurred in 2% to 3% of patients, deep vein thrombosis occurred in 1% and pulmonary embolism was uncommon, occurring in fewer than 1%. For more details, see the overview.

2.4.2 The Specialist Advisors reported similar complications to those above.

2.5 Other comments

2.5.1 The Committee noted that there were no long-term follow-up data; treated veins may undergo late re-canalisation.

3 Further information

Sources of evidence

The evidence considered by the committee is in the overview.

Information for patients

NICE has produced information for the public on this procedure. It explains the nature of the procedure and the guidance issued by NICE, and has been written with patient consent in mind.

Update information

Minor changes after publication

January 2026: Interventional procedures guidance 8 has been migrated to HealthTech guidance 2. The recommendations and accompanying content remain unchanged.

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Endorsing organisation

This guidance has been endorsed by Healthcare Improvement Scotland.