

# Endothermal ablation on anticoagulated patients is durable and effective



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## COMMENT & ANALYSIS

Endothermal ablation has been established as a standard of care for the treatment of symptomatic venous reflux in the great and small saphenous veins. The most common modalities are radiofrequency and endovenous laser ablation. The treatments were initially described in the late 1990s and gained more widespread use with FDA approval of radiofrequency ablation in 1999 and endovenous laser ablation in 2002.

Both the laser and radiofrequency catheters have been refined with a collaboration between vascular specialists and industry. With the administration of tumescent anaesthesia, and duplex ultrasound, the procedures have become extremely low risk, outpatient office-based procedures with outstanding results.

Established immediate closure rates for great saphenous vein and small saphenous vein approach 100%, and long-term (five-year) closure rates for radiofrequency and endovenous laser ablation in the great saphenous vein are approximately 87–98%. Complications are minimal, including saphenous nerve thermal injury (less common with above-the-knee ablation and tumescent anaesthetic technique) and endothermal heat induced thrombosis (EHIT). The most common type of relevant EHIT is class 2—in which thrombus

extends into the deep system for less than 50% of the deep vein diameter. This has been described in 1–15% of cases, the vast majority of which resolve, retracting within weeks, often without anticoagulation.

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The safety and efficacy of these procedures have been strongly supported by the peer-reviewed literature, and endothermal ablation has largely replaced traditional surgical treatments such as ligation and stripping. However, a significant number of patients

who would benefit from endovenous closure are being treated with long-term warfarin therapy for associated medical comorbidities such as atrial fibrillation, previous arterial embolus or pulmonary embolism, prosthetic cardiac valves, or history of remote (in contralateral limb or elsewhere in venous system) deep vein thrombosis. There is less evidence regarding the outcomes and complications of endothermal ablation in this subset of patients. Indeed, these are the very patients that could often most benefit from minimally invasive endothermal ablation of symptomatic truncal superficial incompetent veins—because the risks of even temporary discontinuation of anticoagulation for open surgery may outweigh the benefits to be gained from stripping and ligation. Endothermal ablation can be performed without cessation of warfarin anticoagulation, thus eliminating this risk. The question has remained—is

this treatment effective and durable?

Several studies over the past five years have looked at this issue. However, the sample sizes have been relatively small. These have reviewed a maximum of one-year follow-up with excellent results demonstrating durable ablation rates of

83–100% for both radiofrequency and endovenous laser ablation. Minor bleeding occurred in 4–9%, with no major bleeding. In a recent review at our institution of 97 veins, the durable ablation rates at six months have been 93% and 98% for endovenous laser and radiofrequency ablation, respectively. There were no significant bleeding complications. Both great saphenous veins and small saphenous veins were included in the study. In addition, in this study and others, antiplatelet agents had no significant impact on the short term incidence of recanalisation, even in patients being systemically anticoagulated with warfarin.

Endothermal ablation in anticoagulated patients has clearly been shown effective. It is also durable in the mid-term (six to 12 months). It is incumbent on vascular specialists to maintain longer follow-up on this subgroup of patients to demonstrate long-term durability. Additional follow-up is continuing for this subgroup—and additional reports of longer-term durability are anticipated shortly.

In an age of value-based medicine, clinical outcomes (both short- and long-term) and patient reported outcomes will become increasingly important as healthcare funding is considered for various therapies.

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