

What Services Should Stand-Alone Vein Clinics Provide?

Considerations on the services safely provided at an outpatient center, as well as those best left in the traditional hospital setting.

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In the United Kingdom in the late 1980s and early 1990s, varicose veins were treated like other surgical conditions as part of the general hospital system. The requirements for general anesthesia and a sterile operating theater meant that with few exceptions, varicose veins were treated the same as any other surgical operation. The advent of endovenous surgery in 1999 changed all of this. Not only has endovenous therapy revolutionized the way we treat veins and raised our expectations in terms of results, but it has also allowed the provision of some vein services to be moved out of hospitals and into the community in stand-alone vein clinics.

THE PATH TO STAND-ALONE VENOUS CARE

In the early days of endovenous therapy in the United Kingdom, general anesthesia was commonly used. The reasons for this were not just that this is what patients and doctors were accustomed to, it was also because early radiofrequency ablation required binding the leg with a very tight rubber Esmarch bandage to ensure that the target vein was exsanguinated and there was good contact between the vein wall and the electrodes. Using these techniques, our results were excellent, and over the next 5 years of treatment, we did not have a single failure in terms of closure or total reopening of the vein.

In the United States, the provision of varicose vein services developed differently. American physicians were early adopters of tumescent anesthesia, allowing venous procedures to become ambulatory and able to be performed in an outpatient setting. The requirement for anesthetists disappeared, as did the requirement for fully staffed, sterile operating theaters. This led to the first dedicated vein clinics opening in the United States

very early in the new millennium. Following this lead, I opened my first “stand-alone” ambulatory and dedicated vein clinic in May 2003. It was situated in an office building and was not part of a hospital complex. Initially, this clinic was used for consultation, duplex diagnosis, and sclerotherapy only, with endovenous ablation and phlebectomy still performed at a local hospital. We had previously recognized the importance of treating pelvic venous reflux with pelvic vein embolization, and this was also performed in a radiological unit in a local hospital by an interventional radiologist working as part of our team.

The early results of radiofrequency ablation under tumescence were not very good, but with the introduction of endovenous laser, increased understanding of tumescence, and improvements in the techniques used, it was clear by the mid-2000s that we could obtain excellent results from vein procedures performed in ambulatory clinics within the community. In view of these improved results, I built my first dedicated endovenous operating theater within my stand-alone clinic in the summer of 2005. By the end of 2005, all of our endovenous thermoablations, foam sclerotherapy cases, phlebectomies, and microsclerotherapy treatments were performed in our outpatient vein clinic, remote from any hospital.

CURRENT CAPABILITIES AND LIMITATIONS OF STAND-ALONE CENTERS

In the last decade, most stand-alone vein units that are not situated within hospitals are built on a model quite similar to this, providing consultation, duplex ultrasonography, and the full range of endovenous ablations, phlebectomies, and sclerotherapy. This has become the standard model of what a stand-alone vein clinic usually

offers. However, science moves on and, with it, so has our understanding of the venous system and the conditions arising within it.

Over the last few years, the link between pelvic venous reflux and varicose veins of the legs, vulva, and vagina have become clear.¹⁻³ In light of this, physicians treating leg varicose veins have now begun to address the investigation and treatment of venous reflux that is not limited to the leg but may affect the leg veins nevertheless.

Although some physicians who recognize pelvic venous reflux send patients to local hospitals or imaging centers for MRI/MRV and CT venography, transvaginal duplex ultrasound scanning using the Holdstock protocol is now probably the gold standard for investigating pelvic venous reflux and for directing treatment.⁴ With the right training, transvaginal duplex scanning can be performed in a stand-alone vein clinic. More importantly, the only additional equipment needed is a compatible transvaginal duplex ultrasound probe.

However, when it comes to the treatment of pelvic vein reflux, things become a bit more difficult. Although some believe that ultrasound-guided foam sclerotherapy injected externally can be used to treat such pelvic venous reflux,⁵ this may be contrary to the experience of injecting leg varicosities with ultrasound-guided foam sclerotherapy without first ablating the underlying truncal reflux. As such, many physicians favor coil embolization under x-ray control,⁶ which has now been shown to be effective in the long term.⁷

Such pelvic vein embolization is usually undertaken by an interventional radiologist within an interventional radiology suite of a hospital. Seeing the need for such a service, we built an interventional radiology room using a mobile C-arm and have successfully been performing transjugular embolization of incompetent ovarian veins and internal iliac veins and their tributaries since June 2014.

Considering the expense and the usage of such a room, it is unlikely that each stand-alone vein clinic would want or need such a facility. However, our experience to date has been that it is possible to bring this service into a stand-alone vein clinic and successfully treat ambulatory patients without sedation. This facility also allows us to perform investigation of iliac vein compression with intravascular ultrasound, if required.

Our 18-month experience has been that restricting the practice to pelvic vein embolization and intravascular ultrasound is safe. In the unlikely event that an emergency should happen, we have resuscitation equipment in the clinic and would ambulance the patient to a nearby emergency department.

The successful introduction of our ambulatory pelvic vein embolization suite has shown where we currently believe a

stand-alone vein clinic reaches the limits of what it is able to provide. Although we are able to investigate and treat venous reflux disease in the legs and pelvis in such a unit, it is highly unlikely that we will introduce the treatment of obstructed veins into our stand-alone service. Some simple stenting might be able to be safely performed, but stenting is often very difficult, can be painful, and should generally be performed within a hospital with the appropriate backup in terms of anesthesia, as well as other services, should a complication arise. Similarly, acute interventions for deep vein thrombosis will most likely remain within the formal hospital setting for the foreseeable future.

CONCLUSION

Stand-alone vein clinics that are remote from hospitals come in many shapes and sizes, ranging from those that provide rooms for simple consultations, duplex ultrasound investigations, and minor treatments such as sclerotherapy to those that provide complete venous reflux services including leg vein ablation and coil embolization of pelvic veins under x-ray control. In view of the success of such clinics, it may be unlikely that these stand-alone vein clinics will be reabsorbed into hospitals. However, even the most well-appointed stand-alone vein clinic needs to maintain links with hospitals that are able to perform the investigations and treatments that venous patients might require that cannot be serviced in such a clinic. ■

1. Marsh P, Holdstock J, Harrison C, et al. Pelvic vein reflux in female patients with varicose veins: comparison of incidence between a specialist private vein clinic and the vascular department of a National Health Service District General Hospital. *Phlebology*. 2009;24:108-113.
2. Whiteley AM, Taylor DC, Whiteley MS. Pelvic venous reflux is a major contributory cause of recurrent varicose veins in more than a quarter of women. *J Vasc Surg Venous Lymphat Disord*. 2013;1:100-101.
3. van der Vleuten CJ, van Kempen JA, Schuitze-Kool LJ. Embolization to treat pelvic congestion syndrome and vulval varicose veins. *Int J Gynaecol Obstet*. 2012;118:227-230.
4. Whiteley MS, Dos Santos SJ, Harrison CC, et al. Transvaginal duplex ultrasonography appears to be the gold standard investigation for the haemodynamic evaluation of pelvic venous reflux in the ovarian and internal iliac veins in women. *Phlebology*. 2015;30:706-713.
5. Rabe E, Pannier F. Embolization is not essential in the treatment of leg varices due to pelvic venous insufficiency. *Phlebology*. 2015;30(1 suppl):86-88.
6. Ratnam LA, Marsh P, Holdstock JM, et al. Pelvic vein embolisation in the management of varicose veins. *Cardiovasc Intervent Radiol*. 2008;31:1159-1164.
7. Dos Santos SJ, Holdstock JM, Harrison CC, Whiteley MS. Long-term results of transjugular coil embolisation for pelvic vein reflux—results of the abolition of venous reflux at 6-8 years [published online ahead of print June 17, 2015]. *Phlebology*.

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Disclosures: None.