

Venous Disease Care: Improving Training Paradigms

How to ensure that physicians receive comprehensive training in venous and lymphatic disorders.

BY STEVEN E. ZIMMET, MD, AND ANTHONY J. COMEROTA, MD

The major vein societies in the world share a common mission to improve the quality of patient care. With education at the core of quality patient care, an important question is how best to ensure that physicians receive the necessary education in venous and lymphatic disorders so that good-quality patient care is provided to patients with venous disease. Comprehensive training can be achieved by establishing educational standards for teaching programs in venous and lymphatic medicine.

CURRENT STATE OF VENOUS EDUCATION

Significant developments have occurred in the treatment of venous disease over the last 2 decades, with major innovations in the treatment of both superficial and deep venous disease. New minimally invasive treatments for superficial venous disease, which can be routinely performed in an office setting, have led to substantial growth in the number of physicians providing these services, as well as the number of procedures performed.¹

Many key developments have come into common use without the opportunity for the formal education of physicians already in practice. This is true even in primarily vascular disease-focused specialties. Therefore, these treatment methods have been learned primarily via postgraduate educational experiences. As a result, it is likely that physicians offering vein services have a wide range of expertise. In every field of medicine, comprehensive education should be delivered at the graduate level. Currently, no single specialty routinely provides a standardized comprehensive curriculum in venous and lymphatic disease.

A survey of United States vascular surgery residents attending the American Venous Forum fellows course in 2007–2008 found that, prior to the course, < 10% of the

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residents' time was devoted to venous disease, and fewer than one-half had access to a vein specialist or had vein clinic experience.² Survey results also showed that vascular residents had a 5-week average duration of training in the vascular laboratory, and only 35% had training in interpreting venous studies from the vascular laboratory. Only 10% correctly classified patients using the CEAP system and could define pathologic venous reflux. The October 2014 Accreditation Council for Graduate Medical Education (ACGME) vascular surgery case logs have outlined the average experience of vascular surgery trainees (Table 1),³ which suggest a significant educational gap in a number of areas.

Educational gaps are not unique to the United States. A 2009 survey of vascular trainees in the United Kingdom (UK) found that 78% had received no formal training on venous duplex ultrasound either for diagnosis or for use during endovenous treatment, < 40% had experience or training with foam sclerotherapy, < 25% had any experience with advanced techniques such as thrombolysis, and experience with endovenous techniques was limited.⁴ A majority (76%) of trainees indicated they would like formal, approved venous training. The authors concluded that UK vascular trainees will not become "the competent all-round vascular specialists of the future" based on the current level of venous disease training.⁴

TABLE 1. 2014 ACGME VASCULAR SURGERY CASE LOGS: NATIONAL AVERAGE TRAINING EXPERIENCE IN SELECTED VENOUS PROCEDURES

Procedure	Average No. of Cases
Operation for varicose veins	6.1
Sclerotherapy, peripheral vein	1.8
Embolectomy/thrombectomy, venous	0.5
Endoluminal ablation	13.9
Operation for venous ulceration	0.1
Venous reconstruction	1.7
Transluminal mechanical thrombectomy, venous	2.4

In a 2011 survey of UK trainees, half reported having no access to formal ultrasound training, and 33%, 49%, and 46% of trainees reported that they had no experience with endovenous laser, radiofrequency ablation, or foam sclerotherapy, respectively.⁵ The authors concluded that “[t]rainee experience is insufficient for a modern specialist practice. Separate specialty training in the United Kingdom must address these deficiencies.”⁵

It is reasonable to say that a comprehensive, disease-based approach to venous and lymphatic conditions that incorporates conservative, medical, endovascular, and surgical approaches is currently lacking in most if not all training programs. That said, it would be appropriate to expect that a venous and lymphatic specialist would ideally be knowledgeable about the treatment of all aspects of venous and lymphatic disease, even though the individual physician may not perform all procedures he or she is exposed to during training. In fact, there is no specialty in which physicians perform every procedure they may have been exposed to in their training. So, it is important to recognize that there is a difference between knowledge of therapeutic options and outcomes versus procedural and technical skills. A program requirements document, as discussed later, defines which areas require knowledge versus procedural/technical skills.

According to Spanos et al,⁶ venous training in Europe is lacking a formal curriculum among various specialties related to the management of venous diseases. Results of the 2014 survey of the European Venous Forum on venous education and training found that physicians involved in the diagnosis and management of venous disease are in need of more specialized venous training. A position paper from the European College of Phlebology stated that European training in venous disease is very diverse.⁷ The authors noted that because phlebology is a multidisciplinary specialty, involving general practice, internal medicine, surgery, dermatology, angiology, radi-

ology, and cardiology, standardized training in venous disease across European countries is essential to the delivery of high-quality, evidence-based care.

STANDARDIZED TRAINING

A curriculum is the backbone of standardized training and education and is built around an understanding of the content of the field. There is a distinction between core content and a curriculum. The core content defines the boundaries of the discipline, outlines the areas of essential knowledge, and provides a framework for development of a curriculum. A curriculum is an operational process by which the core content is integrated into the academic elements of an educational program. In most cases, a model curriculum is developed by a particular discipline's program directors based on the core content, but it is expanded to include goals and objectives, instructional methods, assessment, and training environment. Not all postgraduate programs have the same curriculum, as their circumstances and resources differ, but they nevertheless all reference a core content. With this in mind, the American Board of Venous and Lymphatic Medicine (ABVLM) embarked upon a three-step, collaborative, multispecialty consensus process to establish educational standards for education in venous and lymphatic disease. These steps are outlined in the following sections.

Step One: Core Content

More than 70 experts from dermatology, interventional radiology, phlebology, vascular medicine, vascular surgery, and other fields worked collaboratively to develop a consensus statement on the core content in venous and lymphatic medicine. Their work led to the publication of the *Core Content for Training in Venous and Lymphatic Medicine*,⁸ which has been endorsed by the American College of Phlebology and the American Venous Forum.

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Step Two: Program Requirements

Program requirements identify the knowledge and skills that must be mastered during training and serve as a guide for a 1-year fellowship training program. Program requirements delineate the specifics regarding the program director, faculty, institution, facilities, resources, educational program, and training environments. Although program requirements provide guidance about the types of experience that fellows should have, they allow flexibility in how programs structure those experiences. There is a difference between knowledge of therapeutics versus procedural and technical skills; a program requirements document defines which areas require these specific sets of skills.

The development of the program requirements for education in venous and lymphatic medicine (currently near completion) reflects the work of experts from various specialties, including cardiology/interventional cardiology, dermatology, family medicine, interventional radiology, vascular medicine, and vascular surgery. The format for this document is the same as that used by the ACGME for all approved programs.

Step Three: Curriculum Implementation

Step three involves discussion and planning as to how the core content and program requirements will be implemented into venous and lymphatic medicine educational programs. In January 2015, the ABVLM Curriculum Advisory Council, which is composed of two interventional cardiologists, two dermatologists, three interventional radiologists, three vascular medicine specialists, and five vascular surgeons, in addition to members of the multidisciplinary ABVLM board, met in Ft. Lauderdale, Florida. The council members were asked to review and provide recommendations for any modifications to the program requirements document and to identify and discuss challenges and strategies for implementing the core content and program requirements into 1-year training programs in venous and lymphatic medicine. The meeting was exceptionally productive. We

anticipate that the program requirements document will be finalized in the near future and that steps to facilitate development of 1-year fellowship programs will follow.

CONCLUSION

The pace of change in knowledge and techniques in venous medicine has grown in recent years, making it important to ensure that clinicians are able to obtain comprehensive training in venous disorders, so that patients can receive care from those who are well trained in the field. If one were to be recognized as a venous and lymphatic specialist, it would be reasonable to expect that the physician is knowledgeable about the treatment of all aspects of venous and lymphatic disease, even though the individual physician may not perform all procedures he or she is exposed to during training.

The pathway to a vein practice is diverse, and there is no standardized format available for physician education and training. Program requirements for those who wish to specialize in venous and lymphatic disorders are conspicuously absent. Most would agree that the venous curriculum, even in vascular specialties, would benefit from being standardized and strengthened. To advance knowledge, skills, and outcomes in a meaningful way, we must think long-term, with the objective to improve the venous curriculum at the medical school level, as well as in residency and fellowship training programs. Our commitment to medical professionalism demands nothing less. ■

Steven E. Zimmet, MD, is President, American Board of Venous & Lymphatic Medicine, Zimmet Vein & Dermatology in Austin, Texas. He has stated that he has no financial interests related to this article. Dr. Zimmet may be reached at (512) 485-7700; zimmet@drzimmet.com.

Anthony J. Comerota, MD, is with the Jobst Vascular Institute in Toledo, Ohio, and is Secretary of the American Board of Venous & Lymphatic Medicine. He has stated that he has no financial interests related to this article. Dr. Comerota may be reached at (419) 291-2088; anthony.comerotaMD@promedica.org.

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