

The Case for Treating Venous Disease

Balancing the “red” and “blue” in practice.

BY ERNESTO RIVERA, MD

As an interventional cardiologist who has been practicing for 23 years, I have a good deal of experience across a wide variety of procedures and techniques, from percutaneous transluminal coronary angioplasty and stent placement to pacemaker implantation to peripheral vascular studies and treatment. Most of my training and experience, however, was on the “red” or arterial side of vascular medicine.

Approximately 4 years ago, I noticed that a significant and increasing number of my patients reported leg symptoms, such as heaviness, swelling, and pain, even though their leg arteries were normal, suggesting chronic venous insufficiency (CVI). In the more distant past, I had often referred severe CVI patients to vascular surgeons, who usually performed vein stripping. However, in subsequent years, as far less invasive yet very effective approaches became available and I saw more of my own patients present with venous disease, I decided to learn more about how I could help them. I visited venous practices, observed procedures, and attended courses and symposia on the topic, including one with the surgeons at Methodist Hospital in Houston, Texas, and also the annual International Vein Congress in Miami, Florida. For me, the learning curve was truly an eye-opening experience. I soon realized that venous disease is not only a common and serious medical condition, but I and my practice colleagues and staff already had many of the skills and equipment needed to assess and treat it. Like an ignited match, the cause of including venous disease in our practice quickly caught fire in me.

MAKING THE CASE

As is the process with many group practices, I had to make the case for adding venous disease to ours (a group of 11 cardiologists). At first, there was some resistance from our board of directors (e.g., “We are a cardiology practice”). I pointed out that venous disease is not merely a cosmetic inconvenience, but it can be a serious medical condition—



Figure 1. A look at the waiting room setup at Amarillo Heart Group's vein clinic. A video displays venous disease information to help educate patients and increase their awareness of possible symptoms.

nearly 25% of Americans have varicose veins, and 6% have CVI,^{1,2} which can severely affect quality of life^{1,3,4} and can, in some cases, even result in limb amputation.⁴ I did my homework to specifically describe how we could incorporate it in our practice. For instance, I provided an overview of additional equipment and staffing needs, educational needs, and pro forma costs; how, initially at least, we would have many patients from our existing patient base (and their family members, because venous disease is familial) and current general cardiovascular disease referrals; and therefore, we would not have to solicit or rely on venous disease referrals.

A number of my practice colleagues became interested. As I had done, they made time to visit venous clinics in other practices and observed the procedures, took courses and workshops, and consulted texts and the medical literature. We decided to pursue venous disease treatment. We dedicated a room for venous procedures and acquired

EQUIPMENT LIST

- Venefit targeted endovenous therapy system
- Convertible US
- Klein pump for administration of tumescence anesthesia
- Special vascular table, which offers tilt, height, and back lift
- Vein closure kit tailored to meet supply needs of the procedure
- Temperature control
- Soft music
- TV

and set up all the necessary additional equipment within 2 weeks (see *Equipment List*, above).

GROWING WITHOUT PAINS

Once we started performing venous procedures, it was amazing how rapidly our practice changed and grew. After starting with one room for venous procedures during the first year, we then added a second room. One year later, we created a vein clinic—four treatment rooms and three scanning rooms—by converting to electronic medical records and reallocating space that was previously used for paper records and cardiac rehab. But the demand has continued to grow. We have a patient waiting list time of 6 to 7 months, and that is just from our existing patient base and general cardiovascular referrals (e.g., patients with high blood lipids, hypertension, obesity, type 2 diabetes, etc.). We find that many of these referral patients also have venous disease when they complete our incoming patient questionnaire (see page 11), which captures cardiac, arterial, and venous symptoms. We also have a video about venous disease running in the patient waiting room to increase their awareness and prompt discussions about possible symptoms with their physician (Figure 1).

Of our 11 cardiologists, seven—including four invasive and three interventional cardiologists—now dedicate time each week to venous patients and procedures. I currently allocate about half my time to seeing patients in the office, about 30 to 35 in the morning or afternoon of a day. The other half of my time is fairly evenly divided between “blue” and “red” procedures (i.e., an average of 2 or 3 half days a week for each). That works out to approximately 20 to 30 venous procedures and 15 heart catheterizations and peripheral arterial interventions per week.

Although we have not actively sought venous disease referrals yet, we know that when we do, educating referring physicians about the condition will be important. Indeed, many physicians may not be aware of the signs and symptoms of venous disease and do not realize that patients can



Figure 2. Dr. Rivera performing the Venefit procedure.

have normal healthy arteries and also have venous disease. Educating them about these aspects can help referrals; as in one example, when physicians at a local wound clinic referred patients to us who present with skin problems and ulcers on their legs and requested we open up the patients' arteries. However, after we studied the patients, we often found that their arteries were already open, but ultrasound revealed significant CVI, which we then treated. We have often had to explain to the referrer why we treated the patient for venous rather than arterial disease, as the wound care specialist originally requested.

Equipment manufacturers can help cardiology practices add venous disease treatment to their services. For example, ultrasound companies can provide technical support to teach technicians how to perform and read venous ultrasound studies. The American College of Phlebology provides excellent courses for ultrasound technicians on this topic. Today, we have ultrasound technicians who eat, sleep, and breathe vein studies alone. Generating high-quality ultrasound studies of venous problems is not only a critical diagnostic tool but can be invaluable for patient communications. For example, some patients only want their distal spider veins treated, mainly to address cosmetic issues. I tell them that would only treat the “leaves of the tree” and not the underlying problems of the “trunk” or “larger branches.” A good-quality venous ultrasound image helps me clearly show them what I am talking about, so they understand that they have a medical problem that requires treatment.

For venous procedures, we previously used laser therapy but have changed to radiofrequency ablation (RFA) (Venefit targeted endovenous therapy using the Covidien ClosureFast catheter, Covidien, Mansfield, MA) (Figure 2), because we found it to produce good results, and patients tolerate it well. Less often, we perform phlebectomy or sclerotherapy (each comprising approximately 10% of patients).

PATIENT QUESTIONNAIRE

Ernesto Rivera, MD**Assessment of Venous Insufficiency**

Name _____ DOB _____

Date _____

Assessment: Varicose Veins Spider Veins

CEAP Classification: 1 2 3 4 5 6

Does the pt have any symptoms due to venous insufficiency?

YES NO

If yes, what symptoms does the pt have?

Pain Swelling Cramping Aching Heaviness
Burning Itching Color change

Do symptoms interfere with activities of daily living?

YES NO

If yes, what activities?

Does the pt take OTC or prescription medication to relieve symptoms?

YES NO

If yes, what medication and dose?

How many days did the pt have to use medications within 2 weeks?

Do the pt's daily activities require prolonged periods of standing?

YES NO

If yes, how many times during the day does the pt take a break or sit due to sx?

Has the pt experienced intractable ulceration due to venous stasis?

YES NOHas the pt had more than 1 episode of minor hemorrhage from
a ruptured superficial varicosity?**YES NO**

Has the pt had a hemorrhage requiring a blood transfusion?

YES NO

A PATIENT CASE

One of our more interesting cases involved a woman in her late 20s. She had a history of venous insufficiency on both sides of her family (her two grandmothers) and began noticing spider veins on her ankles when she was 14 years old. Around 2007, she began experiencing common symptoms of CVI: leg and ankle swelling, a feeling of heaviness in the legs, and general fatigue at the end of the day. Although she was a nurse by training, she did not consider CVI and thought her symptoms were merely a normal response to the long periods of standing at her job. She began wearing over-the-counter compression stockings, which initially helped, but over time, her symptoms worsened. In 2009, both of her legs became acutely swollen for more than a week, so she consulted her primary care physician. After ultrasound yielded negative findings for deep vein thrombosis, he prescribed anti-inflammatory medication and recommended she continue wearing the over-the-counter compression stockings; he never raised the possibility of CVI. Her symptoms improved somewhat but then worsened again a year later, at which point, her (new) primary care provider referred her to our practice.

Ultrasound revealed significant reflux in the greater saphenous veins of both legs (10 and 12 seconds in the right and left legs, respectively), although she reported worse symptoms in the right leg. I prescribed compression stockings and asked her to return in 3 months. On her return, it was clear that her symptoms remained, so we decided to proceed with laser ablation of the greater saphenous vein in her right leg in August 2011. By 2 weeks after the procedure, her CVI symptoms resolved, and she was able to stop wearing compression stockings, although she experienced a “rope-like” feeling of discomfort in her leg for about a week. A few weeks later, we treated her left leg, this time with RFA (Venefit targeted endovenous therapy using the Covidien ClosureFast catheter). We achieved the same results in resolving the CVI symptoms but with almost no discomfort after the procedure, which has generally been our experience with RFA versus laser.

Soon after the RFA procedure, the patient came to work as a nurse in our practice and has become an “ambassador” for CVI treatment, educating patients about the condition and treatment options, discussing their ultrasound findings with them, and assisting in the procedures. As she told me, “The treatment changed my life—I have more energy and no longer feel fatigued at the end of the day. I feel passionate about educating patients on CVI; so many have it but don’t know it and don’t realize there are very effective treatments for it. I wish more primary care practitioners knew about CVI. In my case, and likely for many other people, it would have meant being treated earlier and avoiding years of needless suffering.”

SUMMARY

Why should a cardiology practice consider adding “blue” to its current “red” services? Based on our experience, I think it boils down to the following:

Medically, it’s the right thing to do. Venous disease can have serious, even life-threatening consequences, and we owe our patients the best care possible.

It usually requires only a minimal investment in education and equipment. Both invasive and interventional cardiologists know “wire techniques,” so they can easily learn RFA. Also, most practices already have a good deal of the necessary equipment; the additional equipment needed for venous disease procedures can be obtained and set up quickly.

It can be added to the practice in a very controlled way. Many cardiologists say to me, “I’m already busy enough—how can I incorporate veins?” We all know time allocation is a key consideration in any interventional cardiology practice. If an interventional cardiologist wants to spend all day, every day in the cath lab, he or she can do so. Venous disease does not generally require urgent treatment, and procedures can be scheduled on days and times that the interventional cardiologist and the practice determines.

It is scalable. Practices can decide how much time they want to devote to venous disease, because there are many patients with the condition. Most practices will find many patients in their existing patient and referral base. More patients can be identified by pursuing venous disease referrals from other providers (e.g., primary care, podiatrists, and obstetricians/gynecologists) and from community outreach.

It is exciting and fast-paced, yet less worrisome. The physician can perform most procedures fairly rapidly in the practice setting (as opposed to in a hospital cath lab), without the need to wear lead shielding. And unlike many cardiac and peripheral arterial procedures, the risk of complications with venous procedures is very low. ■

Ernesto Rivera, MD, is a practicing interventional cardiologist and the Medical Director of Clinical Research at the Amarillo Heart Group in Texas. He is also the founder and codirector of the Amarillo Heart Group Vein Center. He has disclosed that he is a consultant to Covidien. Dr. Rivera may be reached at riverastent@yahoo.com.

1. Gliviczki P, Comerota AJ, Dalsing MC, et al; Society for Vascular Surgery; American Venous Forum. The care of patients with varicose veins and associated chronic venous diseases: clinical practice guidelines of the Society for Vascular Surgery and the American Venous Forum. *J Vasc Surg.* 2011;53(5 suppl):2S-48S.
2. Kaplan RM, Criqui MH, Denenberg JO, et al. Quality of life in patients with chronic venous disease: San Diego population study. *J Vasc Surg.* 2003;37:1047-1053.
3. Smith JJ, Guest MG, Greenhalgh RM, Davies AH. Measuring the quality of life in patients with venous ulcers. *J Vasc Surg.* 2000;31:642-649.
4. Korn P, Patel ST, Heller JA, et al. Why insurers should reimburse for compression stockings in patients with chronic venous stasis. *J Vasc Surg.* 2002;35:950-957.