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The Continued Challenge of DVT Awareness and Education

A discussion about the barriers to patient referrals and interventionalists' need to own DVT treatment awareness and education.

WITH DEEPAK SUDHEENDRA, MD, FSIR, RPVI

From your perspective, what are the current barriers to patient referrals for evaluation of venous disease?

There are three main barriers to patients receiving quality venous care. The first is the perception within the medical community that venous disease is not important. Second, there is a lack of venous knowledge that exists on many different levels, from health care providers to patients, insurance companies, and the biomedical industry. The third barrier is a paucity of level I evidence for the management of venous disease.

Perception is everything. Most medical school students are not taught about venous disease. It is not uncommon to be told in anatomy class that the veins are not as important to learn as the arteries. Several years later, these same students are now the primary care providers caring for venous patients. Interestingly, when compared to the roughly 250 million cases of peripheral artery disease worldwide, venous disease is five to six times more prevalent and yet does not have a seat at the medical education dinner table. If a physician does not recognize the signs and symptoms of venous disease, then how can he/she refer a patient to a vascular specialist? Even if a patient is sent to a vascular specialist, it is not uncommon for that specialist to be an expert only in arterial disease and have very little knowledge of venous disease.

From the patients' perspective, many perceive venous disease as a cosmetic problem or a problem that cannot be treated (eg, post-thrombotic syndrome [PTS]) because they have not heard of such treatments from their primary care providers. On the other end of the spectrum, insurance companies play a large role as to whether patients receive proper venous care. It is not uncommon for insurance companies to minimize the morbidity and decreased quality of life associated with venous disease and deny coverage of venous treatment.

Finally, the dearth of level I evidence for the management of venous disease presents a significant problem in a health care climate that relies increasingly on data to determine coverage. Despite these barriers, I believe that the tide is turning and that venous education is permeating the medical community, albeit very slowly. In my experience, many patients are seeking out vein specialists on their own out of sheer desperation. After treatment, they are returning to their primary care providers and telling them about their experience. I can't tell you how many primary care providers have contacted me after our team treated their patient (who was not referred by their primary) to ask and learn about the treatments performed for deep venous or superficial venous disease. There is really a lot of after-the-fact education going on.

How can interventionalists overcome these barriers to widen referrals? What have been the most successful methods in your practice to establish awareness, education, and a well-developed patient care pathway?

Each specialty in the venous space brings a unique skill set to the table. The most important strategy to help overcome these barriers and widen referrals is to become an expert in venous disease, not just endovascular procedures.

When I look at how our deep vein thrombosis (DVT) practice at Penn Interventional Radiology (IR) has skyrocketed in the past several years, a lot of that growth has been through hitting the pavement and educating other physicians and hospitals. I started out by giving a lot of grand rounds at area hospitals for specialties such as critical care, internal medicine, orthopedics, neurosurgery, emergency medicine, and OB-GYN. I personally called the continuing medical education or medical staff office at various institutions and asked if they would be interested in a lecture on venous thromboembolism (VTE), and invariably I would get scheduled for a talk. Although the bulk of the talk would be on acute and chronic DVT, I also discussed pulmonary embolism (PE), inferior vena cava (IVC) filters, and superficial venous disease so they see Penn IR as a one-stop shop for anything venous related. Because nearly every physician has at least a few patients with PTS, our DVT practice has grown significantly from chronic DVT referrals.

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Why is it important for interventionalists to be responsible for driving this awareness and education?

Interventionalists gain extensive experience on the venous system during their careers from performing venous access to more complex chronic DVT recanalization procedures. They see first-hand the complications of deep venous obstruction, whether it be from VTE or venous access catheters. Because they are called upon to manage these complications, it is fitting that they be at the forefront of venous care and education. However, being able to technically perform complex venous procedures does not make one an expert in diseases of the veins. Just as it is paramount for the interventionalist practicing peripheral artery disease or interventional oncology to know everything about the disease process, the vein expert must be equally knowledgeable to provide care for all facets of the disease.

What do referring specialties need to know about DVT, PTS, and early intervention options and benefits? How does education differ by specialty?

First and foremost, the basics of VTE management (anticoagulation, compression therapy, and indications for IVC filters) need to be discussed, because there is still much confusion over these issues. One such example is length of anticoagulation for a provoked DVT. It is not uncommon to see a nonhypercoaguable patient with a history of provoked DVT over 10 years ago continue to be on anticoagulation because the referring physician is fearful of discontinuing the medication. Taking an anticoagulant in my opinion is not insignificant, and bleeding complications can occur in any patient.

Although educating referring physicians about endovascular treatment options and available level I evidence is important, even more paramount is that they have someone or someplace to turn to (eg, office number, cell phone, email) when they need help or feel that the patient's problem is outside their scope of practice. With the increasing demands of seeing higher volumes of patients, primary care providers and other specialists do not have the time or even the proclivity to keep up with all areas of medicine and often have to refer patients to specialists. Even more challenging is when patients present with complications from DVT, and the vascular specialist says, "There's nothing to do." Where does that leave the primary care physician? One of the things I emphasize to referrers is that their job is not to determine whether a patient is a candidate for endovascular intervention but rather to remember that Penn IR is a place that they can turn to for help.

VTE is encountered in every specialty. We assume that some specialists, hematologists for example, would be familiar with endovascular procedures for chronic DVT, but surprisingly, it is not often discussed in their training. We work very closely with the Penn Thrombosis Center, and it has been a very symbiotic relationship, especially for patients with chronic DVT and/or IVC filters requiring complex retrieval methods. After discussions with the Penn Thrombosis Center regarding our interventions for chronic DVT, which they were not familiar with, we now have a steady referral base and are able to not only improve the lives of those with PTS but also ensure that they are receiving the very best care from a medical management standpoint at the Penn Thrombosis Center.

Finally, it is becoming more evident that there needs to be a standard curriculum in venous disease in our interventional radiology, interventional cardiology, and vascular surgery training programs. Many of us (and the public) assume that because a physician has experience with one disease process, such as arterial disease, that they have experience with venous disease. While the skill set required for both conditions is similar, venous disease is different, and the knowledge we have from arterial disease cannot be entirely extrapolated to venous disease.

What do patients need to know about venous disease?

VTE is the third major cause of cardiovascular death behind heart attacks and strokes, but very few people have heard of DVT or PE. Increased public awareness about the signs, symptoms, risks, and long-term complications of DVT is needed. For those with chronic complications from VTE such as PTS or chronic thromboembolic pulmonary hypertension, patients should know about potential options that may be available to them that can significantly improve their quality of life.

Likewise, superficial venous disease affects 25% of the population, and the incidence is much higher in those with a history of extensive DVT. The vast majority of patients are unaware that chronic venous insufficiency (CVI) is more than just varicose or spider veins. CVI is a disease spectrum that, if left untreated, can lead to long-term disability, decreased quality of life, and significant health care expenses.

Is a multidisciplinary approach to DVT treatment necessary or valuable? What is the impact on both the patient and hospital system?

Absolutely. We all bring different strengths to the table, and each specialty has their own valuable expertise to offer DVT patients. Our team works closely with hos-

pitalists, hematologists, oncologists, intensivists, cardiologists, podiatrists, physical therapists, and the lymphedema team. Just as a tumor board helps to bring together experts in oncology care, a multidisciplinary approach to VTE is essential to treating all aspects of the disease, minimizing complications, establishing a patient care pathway, and educating providers as well as patients.

VTE is the most common cause of preventable hospital death, and hospitals are now being graded on their incidence of DVT, which can ultimately affect reimbursement. Currently, CMS does not reimburse hospitals for DVT or PE that occurs in association with hip or knee replacement. Instituting a multidisciplinary team approach to DVT enables a hospital to reliably collect data and performance measures, form a quality improvement program, develop standardized protocols for VTE risk assessment and prophylaxis, and improve patient outcomes and thereby indirectly improve the bottom line. Furthermore, by having a patient plugged into a multidisciplinary system for DVT management, patients are potentially less likely to use the emergency room for complications such as PTS. With a modest amount of resources and, most importantly, if DVT is treated like a disease state, a hospital has the ability to become a venous referral center that can translate into providing the full spectrum of services for venous disease, from superficial venous disease to iliocaval reconstruction and complex IVC filter removal

How do you develop a multidisciplinary team and create a good patient care pathway?

Networking with colleagues in your institution is key. You have to find a friend in each specialty and reach out to him or her and say, "This is what I would like to do, and I would love if you would partner with me to improve patient care in our institution." If you can find other specialists who have an interest in DVT or are passionate about improving patient care in the hospital, then you have the nuts and bolts of a multidisciplinary team. A great place to start is to get involved with the anticoagulation committee in your hospital.

Because the ER is traditionally on the front lines of seeing acute DVT cases and is constantly under scrutiny for triage efficiency, establishing a patient care pathway that aims to improve triage efficiency is valuable. Penn IR established a pathway with the ER and it has not only expedited care for DVT patients but also ensured that they receive proper follow-up care upon discharge.

Who should own patient education on DVT?

I don't think one specialty owns DVT education, but I think the three main specialties are primary care/hospitalists, vascular specialists, and hematology/oncology. The primary care physician should be aware of the warning signs of DVT, how DVT is diagnosed, and where to refer the patient as soon as the diagnosis is made. If a patient is admitted with DVT, then the hospitalist should be familiar with the risks and benefits of anticoagulation, IVC filters, and endovascular therapy. It's important to remember that not every patient is a candidate or will benefit from an endovascular treatment. Therefore, hematologists play an extremely important role in the management of DVT because anticoagulation remains the foundation of therapy. The responsibility of educating the patient and their family about DVT lies, in my opinion, with the physician who will be following the patient long term for their DVT.

If an intervention is to be performed, then there is no question that the interventionalist will play a key role in long-term care and DVT education. I also believe that patients should be encouraged and provided resources to educate themselves about their medical condition.

What is important for patients to know both before and after the intervention?

An intervention is just the beginning of what may be a long journey. Although many patients will notice significant improvement after undergoing an endovascular procedure, there are some who may not. The most challenging patients are those who have a genetic predisposition to clotting because many times, no matter what you do, their genetics make them prone to recurrent DVT. That can be very difficult for patients to comprehend, especially for young patients who will have to deal with thrombosis issues for the rest of their lives.

Patients must also understand that anticoagulation has to be followed to a "T." That is their lifeline. Missing just one dose can have disastrous consequences.

If a patient is told that nothing can be done, I advise him or her to get a second or third opinion, preferably from a physician or center with a lot of experience in venous disease. The majority of patients who come to Penn IR have been told that nothing can be done by other vascular specialists, and for many of these patients, we are able to recanalize their deep veins and have a positive impact on their lives. ■

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