PANEL DISCUSSION

The Case for Robust Screening Programs for Venous Leg Ulcers

A multidisciplinary panel discusses educating providers about early reflux elimination, VLU diagnosis mistakes, identifying appropriate candidates, the potential downsides of large-scale screening programs, and more.

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The EVRA trial showed the benefits of early reflux elimination.[1] What steps must be taken to educate wound care providers about offering these therapies to patients with venous leg ulcers (VLUs) sooner?

Dr. Ennis: We need more collaborative conferences where vascular surgeons, interventionalists, and wound care providers hear the same message. Wound care providers still struggle with the best approach for patients with VLUs, and they often default directly to compression therapy without even performing a standard reflux analysis. At the American College of Wound Healing and Tissue Repair meeting in Chicago this October, we plan to have several sessions presenting new findings (such as the results of the EVRA trial) and hold general didactic lectures on venous disease—including classification, anatomy, pathophysiology, and new techniques.

Dr. Khilnani: It is incumbent on us to develop a strategy to move relevant venous research to our colleagues in the wound care communities and vice versa. Leadership from the venous societies needs to develop relationships with our wound care colleagues to do this. Other tactics we could utilize include working with publishers who generate journals for the wound care community and explaining why it would be of value for them to give vascular specialists a forum to speak on this and other studies relevant to their readers' practices. Also, encouraging authors of the venous literature to publish their primary, follow-up, or corollary analysis research in peer-reviewed wound care literature could have a large impact on clinical practice.

Dr. Gohel: By demonstrating accelerated ulcer healing in patients who are treated with prompt endovenous ablation of superficial reflux, the EVRA trial confirmed what many venous specialists have suspected to be true for many years. The key to implementing the EVRA trial findings will be to reach out to the health care practitioners where the majority of these patients are treated, mainly community nursing clinics and wound care centers. Easier access to venous investigations, particularly duplex ultrasound scanning, is an essential first step.

A major challenge is that wound care has become dominated by an enormous and confusing range of dressings and topical therapies without adequate focus on assessment or treatment of the underlying etiology. Venous specialists who are able to provide endovenous interventions must support and reach out to frontline clinical staff to change current treatment paradigms. Although entrenched health care practices can be difficult to shift, the clinical, health, economic, and patient quality-of-life benefits of early endovenous interventions are powerful drivers for change.

Dr. Ozsvath: Education is vital. Ulcers can become recalcitrant and difficult to heal if they aren't fully treated, which includes addressing and treating swelling with compression, caring for the wound bed, and treating the underlying pathophysiology by eliminating the pathologic veins. Education can include supplying academic studies or lectures and introducing vein specialists to wound care certified (WCC) providers.

Dr. Kolluri: The "ESCHAR trial practice" seems to be highly ingrained in the United States wound care practitioners. In the assessment and plan section, it is not uncommon to see the phrase, "VLU—will start wound care and multilayer wraps, will refer to vascular once the wound heals to reduce recurrence." A multiprong approach is needed to change this culture and introduce early venous therapies in patients with VLUs. These efforts should primarily target education of wound care providers and the recipients (patients with VLUs). Provider education can span anywhere from venous therapy sessions at national wound care conferences to a "lunch and learn" type of lecture at the local wound center. Partnering with wound care management companies is another opportunity. Mandating a venous insufficiency duplex test for every VLU in the clinical pathway guidelines at these managed wound care centers, akin to an ankle-brachial index for every diabetic and ischemic wound, may help further the mission of providing appropriate care for patients with VLUs. Direct patient marketing requires significant financial resources, but this is likely achievable with industry and societal partnership.

Dr. Gohel, as a lead investigator in the EVRA trial, how would you phrase a global call to action regarding the application of its findings?

Dr. Gohel: The key message arising from the EVRA trial is that assessment and treatment of the underlying venous etiology are imperative when treating patients with chronic leg ulceration. By implementing this simple principle and utilizing endovenous superficial venous ablation procedures, we have the potential to improve the lives of millions of patients worldwide.

What is the most common mistake you see in the diagnosis of VLUs, and how can or should it be prevented?

Dr. Ozsvath: Delay in referring the patient with the VLU is a mistake. Early referral is important because the wounds can still be cared for by the WCC providers. I think WCC providers fear they will "lose" the patient if they refer them to a vein specialist.

Dr. Ennis: I believe the biggest problem in most wound care centers is when the provider assumes the diagnosis is venous without ordering confirmatory duplex reflux studies. We frequently receive referral cases to our center with atypical-appearing wounds in atypical locations. The wounds have been treated for many months with only compression, but they have not been biopsied. The list of diagnoses that are possible for a lower extremity ulcer is expansive, and unless the provider has been educated in these etiologies, they revert to calling most below-the-knee wounds venous in nature. We need to emphasize the importance of using biopsies to diagnose leg ulcers—not only to rule out malignant transformation, such as a Marjolin ulcer, but also to use direct immunofluorescence studies, standard hematoxylin and eosin staining, and other histologic methods to differentiate between vasculopathy and vasculitis.

Dr. Gohel: The most common strategic error in the management of VLUs is the failure to investigate the venous system using duplex ultrasound. In most global health care settings, the default treatment pathway is dominated by topical therapies. A weed is unlikely to disappear without dealing with the root, and the same principle applies to chronic leg ulceration. We must spread the message that a patient with a VLU is highly likely to have a readily treatable underlying venous pathology, and the EVRA trial has demonstrated that there are clear clinical benefits for treating the superficial venous disease.

Dr. Kolluri: Although VLUs are the most common lower extremity ulcerations, there may be some errors in diagnosis. I most commonly see coding errors, with traumatic ulcers in elderly patients coded as VLUs. There are several other ankle and calf ulcers that can mimic VLUs, and some cancerous skin lesions can be mistaken for VLUs. When in doubt, a biopsy is best to differentiate ulcers that can masquerade as VLUs. A biopsy will also help diagnose malignant transformation of long-standing VLUs. The absence of other aspects of chronic venous insufficiency upon clinical examination and a normal venous insufficiency duplex test can help rule out VLU as a diagnosis.

Dr. Khilnani: The number one mistake made by those caring for VLUs, from primary care providers to specialists, is delaying the treatment of venous hypertension. Small ulcers are easier and cheaper to heal than large ulcers. We now have high-quality evidence that early diagnosis and treatment of venous reflux help VLUs heal more rapidly than with compression alone and that elimination of venous reflux increases the ulcer-free period thereafter.

Once a patient with a VLU is screened, how should that patient be worked up, understanding that venous reflux testing is not offered in all wound centers?

Dr. Kolluri: Unfortunately, the availability of venous insufficiency testing at every institution affiliated with a wound center remains an obvious pain point. Plus, interpretation of a venous insufficiency test is not as simple as an ankle-brachial index. Due to these limitations, it is debatable whether the wound specialist should order a venous insufficiency test or make a referral to a vascular specialist. Provider-to-provider communication can help overcome the wound specialist's perception of loss of patients. Collaborative care is key.

Dr. Ennis: Although it is true that not all wound care centers have the internal capacity to perform venous testing, it is uncommon that venous testing is not available somewhere in the community near the wound care center. We try to educate our wound care community about collaborating with local vein programs to obtain diagnostic testing. We also emphasize the importance of talking to the vascular lab in the hospital and making sure they understand the needs of the wound care program, compared with the standard "rule out deep vein thrombosis" study that is done in most hospitals.

Which specialties and individuals should ideally comprise a well-trained screening organization?

Dr. Gohel: The concept of screening a large population for a specific condition is well established, with the principles of an effective screening program described by the World Health Organization more than 50 years ago. VLUs are an important global condition with a well-understood natural history, acceptable noninvasive diagnostic tests, and effective evidence-based treatments. Therefore, a strong and cogent case may be made for a more widespread screening program to identify not only patients with active ulceration but also those at high risk of ulceration (CEAP [clinical, etiology, anatomic, and pathophysiology] C4 and C5 disease), with the aim of assessing and treating the underlying venous disease. There are several local models of care where such a service is provided by specialist wound care nurses and vascular technologists who are supported by interventionalists able to offer endovenous therapeutic options.

Dr. Khilnani: An effective program is not a specialty-specific endeavor but one in which all caregivers are made aware of the benefits of early VLU identification and efficient referral for venous evaluation. Those who see the ulcers first are the ones whose decision-making can have the biggest public health impact. This includes primary care

providers (especially those caring for the elderly), emergency department providers, wound care physicians from all disciplines, wound care nurses, visiting nurses, lymphedema therapists, and both venous and arterial vascular specialists. We need to develop a paradigm that when one sees a leg ulcer, they should consider at the first encounter if it could be venous, and if it is, they should make a referral. The establishment of a pathway that facilitates the referral of VLU patients to venous specialists is the most impactful thing we can do.

What are the cost considerations inherent in population screening?

Dr. Ennis: At Healogics, we are currently working with a massive proprietary database that has healing information along with patient demographics. Using machine learning algorithms, we hope to better predict who is most likely to have a VLU using a series of variables on the initial visit, thereby reducing unnecessary and excessive amounts of population-level screening. We also hope to use this database to predict recidivism and, ultimately, even predict who is most likely to develop an initial VLU. Cost-effectiveness in screening protocols is highly dependent on the ability to identify risk factors to maximize the prevalence rate before initiating screening.

Dr. Kolluri: The EVRA trial investigators reported that early intervention is highly likely to be cost-effective in the United Kingdom's VLU treatment model. The costs and benefits of large-scale screening, with the goal of early intervention, are unclear in the United States at this time. One would hypothesize that the much higher utilization of expensive wound care products and skin substitutes in the United States would mean there would be cost savings with early intervention.

Dr. Ozsvath: The time of the ultrasonographer, the "wear and tear" on the ultrasound machines, and delivering the ultrasound machines to the sites where screening is performed are all cost considerations.

Dr. Gohel, as a provider in the single-payer United Kingdom system, what issues do you see regarding whether patients with VLUs are properly diagnosed and managed?

Dr. Gohel: In the United Kingdom, there are enormous intrinsic barriers to providing optimal VLU care. As in many countries, the health service exists in silos, each with individual targets and interests. Unfortunately, most patients with leg ulceration are managed in primary care, whereas diagnostics and therapeutic interventions are often only offered in hospital settings. The perceived unglamorous nature of chronic wound care combined with the relative lack of activism or lobbying from patient groups results in a general apathy and acceptance of the status quo. By conducting high-quality research such as the EVRA trial, we now have a better understanding of what optimal leg ulcer care should be. The challenge will be to convert this ideal care pathway into the default care pathway. Only by engaging all stakeholders—including clinicians, patients, and payers—can we move forward.

What do you view as the potential downsides, if any, of large-scale venous reflux screening programs in patients with VLUs?

Dr. Ozsvath: We need experienced technicians to do the studies. The review of the studies and the assessment of the patients in question are vital. Some of the treatment must be tailored to the particular patient's needs; treatment must be individualized.

Dr. Kolluri: As with any large-scale screening program, there will be a risk of inappropriate, excessive, unnecessary deep and superficial venous interventions and the related complications.

Dr. Khilnani: The important gap in communities that we need to focus on is that those who see patients with wounds are not appreciating the value of treating chronic venous disease efficiently. However, there is a risk that misuse of venous and wound care therapies will occur if less experienced providers begin caring for all aspects of VLUs. This is true when vascular physicians try to become full-service wound care providers and when wound care providers try to offer all elements of venous care. My philosophy is that patients are best served by physicians who utilize the expertise of their colleagues as consultants rather than those who try to become a "jack of all trades, master of none."

Dr. Ennis: The first thing that comes to mind is the cost-effectiveness of the screening. It would be ideal to find a more rapid, cost-effective method of identifying these patients. Despite these current limitations, it is likely more costly to not screen all patients and allow for the continued high level of recidivism, which can be as high as 70% according to the published literature.[2] I believe screening protocols will become significantly more prevalent as we move forward in a more value-based health care economic environment.

Dr. Gohel: With the strength of the available evidence base, I see few negatives to more aggressive assessment and treatment of superficial venous reflux in patients with VLUs. However, we must appreciate that good case selec-

tion is imperative. Published trials, such as the EVRA trial, have included relatively smaller ulcers with ulcer chronicity < 6 months. Real-world patients (and ulcers) may be very different, so the benefits from intervention may not match the trials. The potential resource implications associated with "case finding" in a screening program could be highly significant. In many countries, there are insufficient financial or manpower resources (diagnostic and therapeutic) to meet the potential demand.

What are the keys to ensuring the identification of appropriate candidates and matching them with providers, while preventing overdiagnosis and overapplication?

Dr. Khilnani: Any ulcer that might be venous should be efficiently referred to a venous specialist. We now have evidence to demonstrate that examination along with the liberal use of duplex ultrasound interpreted by physicians is likely to have a substantial favorable impact both on the patient burden and the cost of VLU care.

Dr. Kolluri: I am not sure I can answer that question effectively. Endovenous (both superficial and deep) procedures will be less effective in patients with other comorbidities, such as elevated central venous pressures, and will be ineffective when VLUs are misdiagnosed. When endovenous therapy is the only hammer in one's toolbox, every ankle ulcer is likely to look like a proverbial nail. Lympho-venous-cardiac physiology is quite complex, and we are barely scratching the surface. Also, vascular programs have a training deficiency in wound care etiology. Vascular specialists must care for the patient as a whole and understand these concepts in depth before considering any intervention. But, the first step in this entire process is to get the patient with a VLU to a vascular specialist.

Dr. Ennis: This is an incredibly important question to pose. Simply arming providers with diagnostic capabilities for the venous system and not marrying that to intensive, didactic education targeted to understanding the implications of the test results would be a major mistake. We are currently rolling out pilot programs at Healogics to combine venous diagnostics and therapy into existing wound care centers and will be following our outcomes using the database to ensure compliance, enhanced outcomes, and appropriate cost-effective utilization.

Dr. Ennis, as both Chief Medical Officer to a company managing nearly 700 wound care centers and Section Chief of Wound Healing and Tissue Repair for an academic health system, how is messaging disseminated to the providers in both networks to ensure appropriate diagnosis and care?

Dr. Ennis: I use my dual role in a way that maximizes the message at both locations. At the University of Illinois at Chicago, we have already combined wound care with vascular surgery and offer venous procedures, diagnostics, and coordination with the wound care team. Using this unique scenario, we will provide online and in-person education for wound care providers in more community-based locations. We are also looking to create hub-and-spoke connections between our vast footprint of wound care centers to ensure that patients with more complex venous pathology can be seen at higher-level centers. This is a long-term goal, whereas the immediate goal is to simply increase awareness of the importance of screening for venous reflux.

Dr. Kolluri, as President of the Society of Vascular Medicine, and Dr. Khilnani, as Immediate Past President of the American Venous and Lymphatic Society, what can be done at the society levels to ensure appropriate guidance to providers? What guidelines currently exist regarding VLU diagnosis?

Dr. Kolluri: The 2014 Society for Vascular Surgery/American Venous Forum guidelines list the differential diagnosis of VLUs and give a "2C" recommendation for superficial endovenous therapies in the setting of a VLU.[3] These are pre-EVRA trial recommendations and, hopefully, will be updated in the near future. I would like to see more collaboration between societies to improve patient care.

Dr. Khilnani: There are multiple guidelines covering the care of chronic wounds and some specifically for VLUs. Unfortunately, the authors and readers of these guidelines are generally siloed and are only aware of those created within their primary disciplines. The emphases of the guidelines vary by the primary discipline, and there is very little collaboration toward keeping guidelines up to date. As an example, advances in one area (such as the EVRA trial) in venous disease take several years before being incorporated into guidelines in the wound care community. Even UpToDate.com lags woefully behind the current venous literature. For example, the section on "Medical Management of Lower Extremity Chronic Venous Disease," which I accessed in July 2019, showed that none of the contributing authors are vascular experts, and that the authors do not recommend venous evaluation and treatment until ulcers are present for > 6 months or are recurrent.[4]

Given how long it takes for new medical literature to be incorporated in clinical practice guidelines, the vascular and wound care societies should partner to develop strategies

(Continued on page 96)

(Continued from page 88)

to share recent data with our respective memberships. Also, with the availability of posting updated standards of practice documents online, we should strive to improve the efficiency with which we update recommendations in our guidelines based on advances in each discipline. Harmonizing the recommendations as much as possible will lead to less VLU care heterogeneity, improve clinical care outcomes, and reduce costs. I certainly would look forward to working with Dr. Kolluri to achieve this.

In terms of the larger goals of patient awareness, what kinds of initiatives do you think might be most effective?

Dr. Gohel: Efforts to engage patients and the public will need to be multimodal for maximum impact. Patients with VLUs usually access health care services, and every contact should be considered an opportunity to educate and empower patients. Although information and technology literacy are increasing significantly, the largely elderly VLU population may not benefit from online education programs as much as other demographic groups. However, caregivers and relatives are also important targets for education. Press and media campaigns have been highly successful at raising awareness of other medical conditions. There needs to be a societal shift away from the embarrassment and stigma associated with leg ulceration. Only when patients feel able to demand better leg ulcer care will we start to see meaningful improvements in outcomes.

Dr. Ozsvath: Educational materials via print, social media, and television.

Dr. Ennis: One example of how we have done this is to designate a period of time each year that is focused on wound care. We recently had wound care awareness week, and all our centers significantly increased their engagement with providers, referral physicians, and patients with targeted educational newsletters and messages. I could see a similar situation occurring for venous disease in wound care centers. A great example was the Charing Cross Symposium earlier this year in London where the designated iWound sessions in the conference room were accompanied by an exhibit space dedicated to wound care, which helped cross-pollinate information between the wound care and venous disease specialties. ■

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