Restless legs syndrome (RLS)—also called Willis Ekborn Disease—was first described by Chinese physicians in 1529, and 1763 by French physicians. The condition was first suggested to be associated with venous insufficiency by Dr. Karl A. Ekborn in 1944. RLS is characterized by unpleasant or painful sensations (dysesthesias or paresthesias) in the legs and an urge to move the legs. Symptoms occur when the patient is relaxing, inactive or at rest, and can increase in severity during the night or latter part of the patient’s wake period. Moving the legs reduces and may relieve the discomfort. The discomfort and constant need to move the legs disturbs sleep and can lead to impairment of function in daily life.

Epidemiology

RLS affects approximately 10 percent of adults in the United States. RLS may begin at any age, including childhood, and affects approximately twice as many women as men. Eighty percent of those affected by RLS also experience Periodic Limb Movement Disorder during sleep, in which the patient has brief “jerks” of the legs or arms while sleeping.

Causes and Associations

RLS may have genetic causes, and has been associated with low iron storage in the brain as well as diminished dopamine in the basal ganglia (the brain area also associated with Parkinson’s disease). RLS is associated with Parkinson’s disease, diabetes, renal insufficiency, iron deficiency anemia, peripheral neuropathy, and multiple sclerosis. The focus of this article is the association between RLS and venous insufficiency. RLS occurring secondarily from a chronic disease can often be improved or cured by adequately treating the associated condition. For instance, restless legs syndrome caused by iron deficiency anemia can be treated by normalizing iron levels. This relationship has
Dangerous blood clots form in the leg veins of over 2.5 million Americans each year. According to the American Heart Association, about 600,000 people in the United States are hospitalized each year for a deep vein thrombosis (DVT), in which a blood clot forms in a leg vein. DVT, with its risk of pulmonary embolism (PE), may be the most preventable cause of death among these hospitalized patients.

We join health professionals across the US in commemorating DVT Awareness Month each March in an effort to educate the community, reduce suffering and potentially save lives from this common disorder. We invite you to share this vital information with your patients.

THE BASICS:
A DVT is a blood clot that forms in a vein deep inside the body, and mainly affects the large veins in the lower leg and thigh. DVTs are most common in adults over age 60, but can occur at any age.

According to the Centers for Disease Control, the precise number of people affected by DVT/PE is unknown, but estimates show 1 to 2 people per 1,000 in the U.S.; in those over 80 years of age, the prevalence rises to 1 in 100 each year in the United States.

Additionally:
• 10 to 30% of people will die within one month of diagnosis.
• Sudden death is the first symptom in about one-quarter (25%) of people who have a PE.
• Among people who have had a DVT, one-half will have long-term complications (post-thrombotic syndrome) such as swelling, pain, discoloration, and scaling in the affected limb.
• One-third (about 33%) of people with DVT/PE will have a recurrence within 10 years.
• Approximately 5 to 8% of the U.S. population has one of several genetic risk factors, also known as inherited thrombophilias in which a genetic defect can be identified that increases the risk for thrombosis.

The National Institutes of Health cite the following risk factors for DVT:
• A history of DVT,
• Conditions or factors that make your blood thicker or more likely to clot than normal. Some inherited blood disorders (such as factor V Leiden) will do this. Hormone therapy or birth control pills also increase the risk of clotting
• Injury to a deep vein from surgery, a broken bone, or other trauma
• Slow blood flow in a deep vein due to lack of movement. This may occur after surgery, if you’re ill and in bed for a long time, or if you’re traveling for a long time.
• Pregnancy and the first 6 weeks after giving birth
• Recent or ongoing treatment for cancer
• A central venous catheter, a tube placed in a vein to allow easy access to the bloodstream for medical treatment
• Older age. Being older than 60 is a risk factor for DVT, although DVT can occur at any age.
• Overweight or obesity
• Smoking

AIR TRAVEL AND DVTs
One large group identified as “at risk” are airline passengers, even if they are only on short flights lasting just a few hours, research reveals. DVT, the so-called “economy class syndrome,” occurs when travelers are immobile for many hours, often in cramped conditions.

Easy to follow instructions can help your patients lower their risk of DVT during a flight:
• Exercising calf and foot muscles regularly
• Drinking plenty of water to avoid dehydration
• Limiting alcohol consumption
• Wearing elastic compression stockings or “flight socks”

DIAGNOSIS & TREATMENT
Physicians can diagnose DVTs by examining a patient’s health, medical history and symptoms, as well as performing a physical exam. However, because DVT symptoms are shared by many other conditions, a special test – duplex ultrasound – can rule out other problems or confirm a diagnosis. During this test, high-frequency sound waves produce images of blood vessels and sometimes the blood clots, as well. Painless and noninvasive, ultrasound tests require no radiation, and are performed by the vascular technicians at Center for Vein Restoration to obtain accurate results. Additional testing may include D-dimer testing, venography, MRI or CT scans. Specialized blood tests also can confirm if a patient has an inherited clotting disorder. A course of anticoagulants such as warfarin and heparin, or both, is the most common treatment for DVT. Additional treatments include insertion of vena cava filters or wearing graduated compression stockings.*

Center for Vein Restoration offers a special program to referring Physicians: the CVR/DVT Program. Our program provides an alternative to hospital emergency rooms – a high priority, noninvasive testing to rule out any possibility of a DVT. 877-SCAN-DVT is specially designed to provide access to our on-call medical teams, and to schedule a DVT to rule out at the closest CVR location:
• 1 call, urgent access
• 7 days a week
• Venous experts for consultation
• Exceptional patient care

*http://www.nhlbi.nih.gov/health/health-topics/topics/dvt/treatment
The Connection Between Restless Legs Syndrome and Venous Insufficiency

Continued from Page 1

been established so strongly that some medical insurers require that a ferritin level be drawn on any patient before initiating another treatment for RLS.

Treatments

Treatment for RLS depends upon the cause. If a primary condition is responsible, then optimizing treatment for the associated condition may help the symptoms. Frequently, however, no clearly associated condition is known and the RLS is “idiopathic,” or treatment of the underlying condition does not adequately resolve the symptoms. In these cases treatment is directed to the proximate known cause, which is a decrease in dopamine in areas of the basal ganglia. Anti-Parkinsonian medications such as carbidopa-levodopa, pergolide, bromocriptine, and ropinirole will often ease the symptoms.

The Association of RLS with Venous Insufficiency

Those who treat varicose veins have long heard from their patients’ descriptions of throbbing, buzzing, creepy-crawly pains in the lower extremities – symptoms that sound very similar to those of RLS. Restless legs syndrome has long been accepted as a symptom of venous insufficiency by phlebologists. It was McDonagh, et al., in 2007 who published the paper, “Restless legs syndrome in patients with chronic venous disorders: an untold story.” This case-control study found a significant difference (at p < 0.05) between the cases (36% prevalence of RLS) and controls (19% prevalence). The clinical difference found between the two groups was a higher prevalence of cramping symptoms in the group with both RLS and venous insufficiency when compared to the control group that had RLS without venous insufficiency. 7

The association begs the question as to whether treatment of venous insufficiency (VI) in those who have both RLS and VI, will improve both conditions. In 2008, Clint Hayes and John Kingsley, et al. published their ground-breaking paper “The effect of endovenous laser ablation on restless legs syndrome,” in the journal Phlebology. This cohort study took patients with ultrasound-proven venous insufficiency and RLS (by NIH criteria) and separated them into operative and non-operative cohorts. The operative cohort received endovenous laser ablation and sclerotherapy. The results: correcting the SVI decreased the mean IRLS score 80%. Also, 89% of patients had a decrease in their score of > or =15 points. Fifty-three percent indicated their symptoms “had been largely alleviated” and 31% reported complete relief of their RLS symptoms. Hayes et al. concluded that patients with diagnosed RLS should be sent for ultrasound evaluation for venous insufficiency prior to drug therapy being initiated or continued. 3

Summary

Restless legs syndrome is a common disorder with a known association with venous insufficiency. RLS is commonly treated with dopaminergic drugs, but these drugs have numerous short and long-term side effects. When RLS co-exists with venous insufficiency, treating the venous insufficiency can provide substantial improvement in the patient’s symptoms and subsequently the patient’s quality of life.

References

Opportunities for Physicians Presented at AVF Forum Annual Meeting 2015

Center for Vein Restoration had a robust flow of visitors as an exhibitor at the American Venous Forum Annual Meeting 2015. Held in late February at the Westin Mission Hills in Palm Springs, California, the annual meeting brought together world leaders in the field of venous and lymphatic health to discuss cutting-edge scientific research. It allowed each participant to gain new insights into how venous and lymphatic health is evolving, and to take advantage of rapidly developing technologies. The event drew a wide range of healthcare professionals including vascular surgeons, radiologists, interventional cardiologists, and technicians.

Over the last 27 years the American Venous Forum (AVF) has led the field of venous and lymphatic disease by providing the highest quality evidence-based knowledge, raising awareness of the spectrum of venous and lymphatic disorders, improving the treatment options and care of patients with venous and lymphatic disease and preparing a new generation of venous health care providers. The AVF continually influences the field in these ways through educational programs, the premier of which is the AVF Annual Meeting.

The event proved to be the perfect opportunity for CVR to connect with some of the best in the field, and launch our new “Stronger Together” campaign. Our Executive Team was on hand at the booth to talk with physicians eager to learn about CVR’s business model.

“Our message to these physicians is simple,” explains Sanjiv Lakhanpal, MD, FACS, President and CEO. “Center for Vein Restoration is not only growing at a tremendous rate, but we also represent the model of medical practice that appeals to so many physicians nowadays: physician-led, physician-focused, and collaborative. And we offer world-class support services that manage billing, staffing and all the tasks that often take a physician’s focus away from treating patients. So, for a practice looking to partner with a larger organization, or a physician looking to join one of the most dynamic practices in the country, now is the time to talk about how we can be stronger together.”

To learn more about the “Stronger Together” campaign, see the “Physician’s Corner” on our website (www.centerforvein.com). Feel free to contact us at (240) 965-3900 or e-mail us at: strongertogether@centerforvein.com.
QUESTIONS & Answers

In each issue of Venous Review, members of our medical team answer questions we’ve received from referring physicians.

Q: I’m an orthopedist. What can you tell me about vein conditions and joint pain? We seem to have some crossover when it comes to my patients’ symptoms.

A: Joint problems are usually secondary to musculoskeletal causes, or secondary to various types of arthritis or trauma. The symptoms are often localized to the affected joint that may have pain, swelling, redness, and effusion but can also be somewhat diffuse. Venous diseases cause symptoms from increased ambulatory venous pressure in case of chronic venous insufficiency or from obstruction in case of deep venous thrombosis. The two problems may occur simultaneously but they are often guilt by association and not transformation. However, both of these conditions occur more frequently in overweight or obese patients who have limited exercise capability. Joint pains limit walking, which results in decreased calf pump, which in turn reduces venous emptying and hence contributes to venous insufficiency.

Untreated venous insufficiency in some cases can cause chronic soft tissue changes and may lead to stiffness of the ankle joint, fixed plantar flexion and periostitis (reported by Krishnan et al in Seminars in Intervention Radiology, 2005 Sep;22(3);162-168), in addition to the classic findings of pain, swelling, skin color changes with hyperpigmentation and ulceration. Similarly, tendonitis around the distal leg and ankle can cause leg or foot swelling in patients with severe signs of venous insufficiency such as skin hyperpigmentation.

Successful management of patients with these conditions requires proper evaluation with imaging techniques such as CT or MRI by the orthopedic surgeon and complete Duplex ultrasound examination by the vein specialist.

Q: I’m a new family practice physician and eager to learn about conditions like varicose veins, which seem to be more common than I’d realized. What should I know and watch for?

A: Varicose veins are an extremely prevalent entity. In the U.S., it is estimated that up to 30% of men and 50% of women will develop varicosities by age 50. They can be caused by increased pressure in the venous system and inefficient bloodflow from the legs back to the heart. In fact, the presence of varicosities indicates a CEAP (Clinical Etiology Anatomy Pathology) class 2 in terms of venous disease severity. Not all varicosities are caused by severe underlying venous disease, however, and it is in the patient’s best interest to have an evaluation by a vein specialist to ensure there is no significant underlying venous disease including venous insufficiency. The diagnostic Doppler ultrasound used to evaluate for venous disease and insufficiency is non-invasive, fast, and painless. Think of a varicose vein as a clinical sign that there may be further underlying disease. It is in the patient’s best medical interest for us to recognize these early-warning clinical clues and rule out more significant diseases for our patients. After an evaluation, venous insufficiency as well as varicosities can be easily treated in an outpatient setting—improving vascular health, daily comfort, and even aesthetics for the patient.

Q: I’ve recently encountered more older patients with leg ulcers. Some of them already have limited mobility – will ulcers make this worse?

A: Leg ulcers can be the result of many disease processes but chronic venous insufficiency is a significant contributor to chronic wounds. The venous system is a low-pressure system in contrast to the high-pressure arterial system. Venous return depends on a number of factors to overcome the gravitational and hydrostatic challenge of returning blood to the heart from the lower extremities when in the upright position:

1) Patent veins with healthy walls,
2) Numerous bicuspid valves with normal coaptation of valve leaflets,
3) Calf, thigh and foot muscle pumps.

Any failure of these components results in venous insufficiencies of which one long-term sequela are venous stasis ulcers.

The lower extremity muscle pumps require muscle contraction within a fascial compartment to empty the deep veins and subsequently be refilled by the superficial veins via perforating veins. Ninety percent of lower extremity venous return occurs via the deep venous system. The calf muscle pump has an ejection fraction of 65% and the thigh muscle pump an ejection fraction of 15%.1 Abnormal calf muscle pump function is associated with a high incidence of lower extremity ulceration.2 Dysfunction of muscle pump function such as seen in elderly patients who are not ambulatory and wheelchair bound is thus associated with increased incidence and poor healing of lower extremity stasis ulcers.

Center for Vein Restoration was proud to take part in the 22nd Annual 2015 NBC4 Health & Fitness Expo in Washington, D.C. Billed as the largest, free two-day public health event in the area, tens of thousands of local residents turned out to the Washington Convention Center to get important, even life-saving health information and screenings including kidney screenings, vision exams, cholesterol screenings and more.

As part of our ongoing effort to educate consumers in all the local communities we serve, our community outreach staff was out in force to provide free screenings and to provide information on venous insufficiency.

The event had a genuine festival atmosphere with several stages packed with information, fun and discussions, from zumba and dance to cooking, workouts, kids’ health and more. Even TV celebrities took part, including NBC journalist Meredith Vieira and one of the “Real Housewives of Atlanta.”

Thanks go out to our intrepid team of community outreach coordinators, vascular technicians, regional operations directors, practice administrators and center coordinators who gave their all to spread the word about vein health. The health education team performed more than 160 lower leg ultrasound demonstrations over the two day event, while Drs. Michelle Nguyen, Arun Chowla and Khan Nguyen were on hand to answer questions from community members as well.

If you’d like Center for Vein Restoration to provide demonstrations or free limited lower-leg ultrasound checks at your community event, contact Robert Howell at (240) 965-3878 or bob.howell@centerforvein.com.
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Did you know that 2.5 million Americans each year suffer from DVT? According to the American Heart Association, about 600,000 people in the United States are hospitalized each year for a deep vein thrombosis, in which a blood clot forms in a leg vein. DVT, with its risk of pulmonary embolism (PE), may be the most preventable cause of death among these hospitalized patients.

In this edition of Venous Review, we highlight DVT Awareness Month, a public health initiative aimed at raising awareness of this commonly occurring medical condition and its potentially fatal complication, PE. Patients and medical professionals alike need to know to know about DVT, from risk factors to diagnosis and treatment, and we’re happy to participate in this important education effort. Additionally, Center for Vein Restoration’s on-call physicians are venous experts who are happy to discuss your patients with you and schedule a preventative scan; just phone 877-SCAN-DVT.

Also in this edition, we reprise our look at restless leg syndrome and its connection to venous insufficiency. And, we update you on our efforts with community outreach at the NBC 4 Health Expo in Washington, D.C. and professional outreach at the American Venous Forum Annual Forum 2015 in Palm Springs, California.

Finally, we are excited to announce that by the end of April, Center for Vein Restoration will have opened nine new clinics in 2015. In addition we are extremely proud to welcome our new medical talent to each of these locations – please see Page 7 for our updated listing of Physicians and Locations.

Thank you for reading Venous Review. We hope you find this information is useful to you and your practice.

Yours in good health,
Sanjiv Lakhanpal, MD, FACS
Editor-in-Chief