Patients with chronic lower extremity venous insufficiency classically present with complaints of leg fatigue, aching, itching, and some element of edema. In more advanced cases, large varicosities, venous stasis changes of the skin, and ulcerations may develop.

Duplex ultrasound evaluation of these patients usually reveals significant reflux in the greater and lesser saphenous veins, and may involve several accessory veins, tributaries and perforator veins. It is generally accepted that endovenous laser (EVL) and radiofrequency (RF) ablation have become the gold standard in the treatment of superficial lower extremity venous insufficiency.

Several prospective randomized trials on the results of these treatment modalities compared with vein stripping and high ligation show significant clinical superiority of these less invasive procedures. The overwhelming majority of these patients show significant improvement in their symptoms following EVL or RF ablation of their incompetent veins. These results are usually immediate and good five-year data has been obtained with over 85% reflux-free and vein occlusion rates.

Leg Cramps: A Common Manifestation of Venous Insufficiency
by Jaime F. Marquez, MD, FACS

Early symptoms of venous insufficiency include leg cramping, aching discomfort, leg pain or heaviness during prolonged standing, nocturnal leg cramps, bursting pain upon standing, tingling, and episodic ankle edema. The pain may be severe enough to make ambulation difficult or even impossible secondary to pain. For women, the pain may be worse during the menstrual cycle or pregnancy due to increased fluid volume and/or higher circulating levels of estrogen.
Leg Cramps: A Common Manifestation of Venous Insufficiency

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Without direct questioning, these patients may not report their habitual leg pain-relieving practices. These measures may include elevation of the leg, analgesic use, support stockings, walking, and sleeping with the legs elevated.

A common misconception is that the leg cramping is caused by abnormal potassium, sodium or calcium, when in fact, all are normal and treatment to replenish these electrolytes yields no results.

Venous hypertension is the predominant underlying contributing factor. The venous system of the lower limbs consists of an interconnected network of superficial veins, perforator veins, and deep veins. The severity of symptoms tends to increase according to the number of systems affected.

The clinical presentation of CVI spans a spectrum from asymptomatic but cosmetically troublesome small blue ectatic veins and varicosities, to severe fibrosing panniculitis, dermatitis, edema, and ulceration. Spider angiomias and varices, when symptomatic, are locally painful. A report of pain beyond the area of the varices (often the calf or the shin) suggests reflux in the saphenous vein, deep venous disease, or both.

If the condition is not properly treated, the severity of symptoms can escalate into the development of chronic venous insufficiency (CVI), a long-term condition that occurs because of partial vein blockage or blood leakage around the valves of the veins. Leg pain is absent in an estimated 20% of patients with other clinical features of chronic venous insufficiency, whereas it is the only clinical feature of chronic venous insufficiency in about 10% of patients\(^1\).

The incidence of this condition increases with age and is higher among women than among men.

**Making a Diagnosis**

Correctly diagnosing venous insufficiency involves a review of the patient's history of symptoms, physical examination, and diagnostic studies. A variety of imaging modalities can help identify the presence of reflux and its location, as well as determine the patency of the deep and superficial venous systems. Determining which modalities to use is based on the patient’s history and symptoms as well as the need for future clinical treatment planning, periodic monitoring, and follow-up.

Once venous insufficiency has been correctly identified, conservative treatment methods may be utilized as an initial treatment approach. These may include elevating the legs when possible, avoiding long periods of sitting or standing, wearing compression stockings, and being active. If these methods are not successful, surgical or procedural options may be recommended. The universal CEAP scoring system (see insert) is used to standardize the classification of disease and recommend the best possible treatment approach for each patient.

**Sources**


Continuing from Page 1

Identifying Potential Causes
A subset of patients will have residual symptoms post ablation despite adequate treatment of superficial venous insufficiency. Therefore, it is critical to obtain an initial extensive medical history from all patients to exclude other potential causes. Further, control of hypertension, diabetes, and congestive heart failure is paramount prior to performance of any ablation therapy.

Edema in particular has multiple etiologies. If this is the only complaint, caution must be exercised in recommending ablation procedures unless the reflux times are significant. Even if venous reflux is the only cause for the edema, resolution may take some time, and use of compression stockings is mandatory until complete resolution is achieved. Patients with persistent pain despite successful ablation procedures may have to be ruled out for scleroderma or other connective tissue disorders, as well as neurological disorders.

Another cause for residual symptoms is the presence of deep venous insufficiency, present in about 20-25% of patients with superficial venous insufficiency. This is not a contraindication to performing ablation of the superficial venous system. In the absence of superficial femoral or popliteal vein reflux, common femoral vein reflux is generally benign, and in most cases resolves after ablation of the refluxing great saphenous vein. In fact, most patients suffering from deep reflux experience significant relief of their symptoms post ablation and reduction in their venous clinical severity score (VCSS).

Diagnostic Testing is Critical
Further diagnostic testing is indicated in patients with residual symptoms, with or without deep venous insufficiency. Proximal iliofemoral obstruction (stenosis or occlusion) is common in these patients, and imaging modalities are necessary to make this determination. A computerized tomography (CT) angiogram with delayed venous phase, magnetic resonance venography (MRV), and more recently, intravascular ultrasound (IVUS) are the imaging modalities of choice. Venography, once the gold standard, is diagnostic in only 65% of cases, and is now used only as a roadmap once the diagnosis has been made.

“Up to 65% of the population has some degree of extrinsic compression of the iliac veins." Shown in this image: Stenosis of the left common iliac vein from compression by the right iliac artery.

The etiology of iliofemoral obstruction is most commonly post-thrombotic in patients with prior DVT, or primary (20%). The typical post-thrombotic iliofemoral lesion involves the common and external iliac veins. Only about 20% of patients with iliofemoral DVT will recanalize completely after anticoagulation therapy; while the remainder recanalize only partially and develop varying degrees of obstruction and collateral vein formation.

It has been estimated that up to 65% of the population has some degree of extrinsic compression of the iliac veins. Primary obstruction is due to intraluminal webs or more commonly, external compression. These lesions do not become clinically apparent until other components of the venous circulation fail. Once a clinically apparent obstructive lesion has been found, it can be treated with endovascular stenting which has replaced open surgical repair, and in skilled hands, has had excellent results. IVUS is mandatory to guide the placement of the stent.

Conclusion
It is important for physicians involved in the care of venous disorders to be aware of the possibility of proximal obstruction in patients with residual symptoms post ablation of incompetent superficial veins. Limiting work-up to duplex ultrasound alone is insufficient, and physicians should be prepared to take the steps noted to achieve the best clinical results.

The Center for Vein Restoration offers comprehensive care for venous disease, from diagnosis to treatment. Call 1-800-FIX-LEGs or 301-860-0930.

Shown: Sanjiv Lakhanpal, MD, FACS and Shekeeb Sufian, MD, FACS
Join Us for a Free CME “Open House” Event

Description
This program provides physicians and clinical health care providers with a practical knowledge base of the most current data available regarding patients who are suffering from chronic venous disease. Research and clinical case studies are presented so participants gain a comprehensive overview of chronic venous disease including venous anatomy, pathophysiology, and diagnostic and treatment options for venous disease.

Topics & Presentations:
- Chronic Venous Disease – History
- Chronic Venous Disease – Anatomy & Pathophysiology
- Clinical Diagnosis/CEAP Classification
- CVI – Ultrasound Diagnosis
- Treatment of Chronic Venous Disease
- Thought Provoking Aspects of Venous Insufficiency
- Treating Combined Arterial and Venous Disease
- Cosmetic Phlebology
- Questions & Answers

CME Credit
Physicians and clinical health care providers will earn up to 3.0 prescribed CME credits for this special event at no charge.

Calendar
Date/Time: December 2, 2010
Open House Event
“Drop in” between 7:30am - 7:30pm

Location: Center for Vein Restoration
7300 Hanover Drive, Suite 104
Greenbelt, Maryland

Watch for a 2011 Calendar of Events coming soon!

Registration
Registrations are accepted for this complimentary, CME-accredited program. To register, call Angela Speck at 301-860-0930, x318 or email angelaspeck@centerforvein.com.
Clinical Evaluation of Venous Insufficiency

*Early Treatment Minimizes Progression and Complications*

**CEAP: Clinical severity, Etiology, Anatomy and Pathophysiology**

**Classification of Chronic Venous Disease and Course-of-Action:** Use of this classification system improves the accuracy of the diagnosis as well as communication between specialists and their patients.

- **CEAP 1:** Spider or reticular veins
  - **ACTION:** Venous duplex ultrasound assessment and cosmetic sclerotherapy assessment

- **CEAP 2:** Varicose veins
  - **ACTION:** Venous duplex ultrasound and consult for conservative management

- **CEAP 3:** Edema of venous origin
  - **ACTION:** Venous duplex ultrasound assessment and consult for possible endovenous ablation

- **CEAP 4:** Skin changes ascribed to venous disease—pigmentation, venous eczema, lipodermatosclerosis
  - **ACTION:** Venous duplex ultrasound assessment and consult for possible endovenous ablation

- **CEAP 5:** Skin changes as in CEAP 4) in conjunction with healed ulceration
  - **ACTION:** Venous duplex ultrasound assessment and consult for possible endovenous ablation

- **CEAP 6:** Skin changes (as in CEAP 4) in conjunction with active venous ulceration
  - **ACTION:** Urgent full leg ulcer assessment and consult for endovenous ablation

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**Venous insufficiency** is treatable through a simple in-office, minimally invasive and pain-free procedure covered by most insurance companies.

**Do you experience any of the following in your legs?**

- Aching/Pain
- Heaviness
- Tiredness/Fatigue
- Itching/Burning
- Swollen Ankles
- Leg Cramps
- Restless Legs
- Throbbing

Early treatment is crucial to prevent further complications from venous stasis. Venous duplex ultrasound and consultation with our Vascular Specialist will determine the best course-of-action.

1-800-FIX-LEGS
**Our Physicians:** Arvind Narasimhan, MD, Jaime F. Marquez, MD, FACS, PA, Sanjiv Lakhanpal, MD, FACS, Thomas C. Militano, MD, FACS, Luis A. Dibos, MD, FACS, Shekeeb Sufian, MD, FACS, Frank Sbrocco, MD, Jerlyn M. Jutton, MD, FACS, Daniel Teklay, MD, Ken Nguyen, DO. *(Not shown: Rajiv Jhaveri, MD, MBA, Michelle Thomas, MD, Eddie Fernandez, MD, J. Andrew Skiendzielewski, DO, Barry Levin, MD, Stephan Corriveau, MD, Paul Johnson, MD, Roy C. Byrne, MD, Robert Kiser, DO, MSPH)*

**Locations throughout Maryland, the Washington, DC area and Northern Virginia:**

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<td>12200 Annapolis Road, Suite 225, Glenn Dale, MD 20769</td>
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<td>Chevy Chase, Maryland</td>
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**Coming Soon to:** Columbia, Maryland and Kalamazoo/Portage, Michigan

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