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**First Large Study Shows Endovenous Laser Ablation Is Highly Effective at Treating Under-Recognized but Common Cause of Varicose Veins**

*Now All Causes of Varicose Veins Can Be Treated Nonsurgically*

NEW ORLEANS, Louisiana (April 4, 2005) – Endovenous laser ablation is a safe and highly effective treatment for a common but under-recognized cause of varicose veins — reflux in a variety of veins collectively referred to as non-great saphenous veins — according to results of a study presented today at the 30th Annual Scientific Meeting of the Society of Interventional Radiology. Varicose veins occur when valves in the vein become weak and don't close properly, which allows blood to flow backward, or reflux. To treat the vein reflux, laser energy is applied inside the faulty vein to seal it closed. The treatment requires only a nick in the skin and local anesthesia.

Two-year data in over 200 patients show a 96 percent success rate for treating the non-great saphenous veins, which include the anterior accessory great saphenous vein, the small saphenous vein, and the posterior thigh circumflex vein. This is the first large study to investigate treating faulty non-great saphenous veins, and these results are superior to those reported for other treatments of vein reflux in these veins, including surgery, ultrasound-guided sclerotherapy, and radiofrequency ablation.

The laser treatment is already proven to be a highly effective treatment for reflux in the great saphenous vein, which is the most common underlying cause of varicose veins. However, in at least 20 percent of patients, which equals millions of people in the United States alone, varicose veins are caused by non-great saphenous veins or a combination of both types.

“This new study means that millions of patients will now have an effective nonsurgical treatment for their varicose veins. Until now, there haven't been effective treatments for these types of veins,” says Robert J. Min, MD, MBA, interventional radiologist, Cornell Vascular, New York. “Surgical removal of varicose veins, even in the best series, has about a 25 percent or higher recurrence rate. In equivalent time periods, laser ablation has had a recurrence rate of less than 5 percent.”

In this study, lead author Min adapted the laser procedure, which he first pioneered to treat great saphenous vein reflux, to treat the non-great saphenous veins. The study also showed that this new application of the treatment is very safe. No skin burns, deep vein

thromboses, or other heat-related complications were reported. “The laser treatment is more effective than surgical ligation stripping and has many benefits. It can be done as an outpatient procedure, typically in less than an hour, and patients can return to normal activities immediately. There is little to no pain, no general anesthesia, and no scar,” says Min.

### **About the Study (Abstract 142)**

Over a 56-month period, the study included 204 limbs in 192 patients with varicose veins not caused by great saphenous vein reflux. Of the 204 limbs treated, 104 were treated for anterior accessory great saphenous vein (AGSV) reflux, 86 for small saphenous vein (SSV) reflux, and 14 for posterior thigh circumflex vein (PTC) reflux. The subjects were treated with 810 nm laser energy delivered endovenously via a 600 micron fiber.

Successful occlusion of the vein, defined as absence of flow on color Doppler, was achieved in 101 of 104 (97%) AGSVs, 83 of 86 (93%) of SSVs, and 13 of 14 (93%) of PTCs at follow-up after a mean of 24 months (up to as much as 53 months). The study’s authors noted that of the seven failures, which all occurred early in the study, six occurred before the six month follow-up, indicating that the failure may have been due to inadequate treatment rather than recurrence. All of these cases were successfully retreated.

### **About Varicose Veins**

Varicose veins affect one out of two people age 50 and older, and 15 to 25 percent of all adults. They are caused by venous insufficiency, an abnormal circulatory condition characterized by decreased return of blood from the leg veins up to the heart and pooling of blood in the veins. Normally, stop valves in the vein close to keep blood from flowing downward with gravity. But when the valves in the vein become weak and don’t close properly, they allow blood to flow backward, or reflux. Varicose veins are prominent veins that have lost their valve effectiveness and, as a result of dilation under pressure, become elongated, rope-like, bulged and thickened. Risk factors for varicose veins include age, family history, female gender and pregnancy.

### **Symptoms**

Symptoms caused by varicose veins include aching leg pain, easy leg fatigue, and leg heaviness, all of which worsen as the day progresses. Many people find they need to sit down in the afternoon and elevate their legs to relieve these symptoms. In more severe cases, this can cause skin discoloration and leg ulcers. People without visible varicose veins can still have symptoms. The symptoms can arise from spider veins, as well as from varicose veins, because, in both cases, the symptoms are caused by pressure on nerves by dilated veins.

### **About the Laser Treatment**

This minimally invasive treatment is an outpatient procedure performed using duplex ultrasound imaging for guidance. As vascular experts, interventional radiologists use their training in diagnostic imaging to determine which faulty veins are the underlying cause of the problem and precisely locate the reflux. After applying local anesthetic to

numb the vein, a thin catheter, about the size of a strand of spaghetti, is inserted into the vein and, using ultrasound, is guided inside the vein. Then laser energy is applied to the inside of the vein to heat and seal it closed. Sealing the faulty vein improves the circulation in the leg by redirecting the blood to normal veins. Abnormal veins are not useful, and they actually create more work for the normal veins in returning blood back to the heart.

There may be minor soreness or bruising, which can be treated with over-the-counter pain relievers. There is no scar, because the procedure does not require a surgical incision, just a nick in the skin, about the size of a pencil tip.

### **About Interventional Radiology**

An estimated 5,000 people are attending the Society of Interventional Radiology's 30<sup>th</sup> Annual Scientific Meeting in New Orleans. Interventional radiologists are board-certified physicians who specialize in minimally invasive, targeted treatments performed using imaging for guidance to treat diseases nonsurgically through the blood vessels or through the skin. By combining diagnostic imaging expertise with advanced procedural skills, interventional radiologists perform minimally invasive treatments that have less risk, less pain, and less recovery time than open surgery. Interventional radiologists pioneered minimally invasive modern medicine with the invention of angioplasty and the catheter-delivered stent, which were first used to treat peripheral arterial disease. More information can be found at [www.SIRweb.org](http://www.SIRweb.org).

***Interviews, medical illustrations and broadcast quality video footage are available. Abstracts can be found at [www.SIRmeeting.org](http://www.SIRmeeting.org) in the program section and click on scientific sessions.***

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