Two steps forward, one step back

Recurrent varicose veins after thermal ablation

By Timothy J. Cawlfield, MD

While most patients whom I treat are satisfied with the initial results of vein ablations, there are some patients who return with recurrent leg symptoms — sometimes months, but usually years after the initial treatment. I also have patients with recurrent symptoms previously treated by other surgeons.

These patients are often frustrated because they had no prior knowledge (or forgot) about the risk of recurrent chronic venous insufficiency. They sometimes come to see me, believing that the other surgeon made a mistake.

Recurrent varicose veins after surgery (REVAS) is a documented problem, and has been for several decades. The first international consensus meeting on recurrent varicose veins after surgery was held in Paris in 1998. From this meeting, REVAS was defined as the existence of varicose veins in a lower limb previously operated on for varicosities, with or without adjuvant therapies, which includes true recurrences, residual veins, and new varices, as a result of disease progression.\(^1\) The study of the nature, sites and sources of recurrent vein disease then ensued.

In 2006, M.R. Perrin’s multi-center, observational study of about 170 patients with recurrent varicose veins after surgery\(^2\) was published. This study could not measure the incidence of disease recurrence, but it did help stratify the types and locations of REVAS after saphenous ligation and stripping. Etiology of same-site recurrences included:

- Technical failure (19.1 percent)
- Tactical error (9.6 percent)
- Neovascularization (20.1 percent)
- Disease progression (31.7 percent)

The sources of reflux were the saphenofemoral junction (47 percent), lower leg perforators (43 percent), thigh perforators (30 percent), saphenopopliteal junction (25 percent), and pelvic veins (17 percent). Most patients who had disease recurrence had more than one source of reflux. It’s not difficult to believe the nature of recurrent varicose veins might be different for modern endovenous techniques and more comprehensive preoperative diagnostic ultrasound.

The aim of the Recurrent Varicose Veins after Thermal Ablation (REVATA) study\(^3\) was to study the nature of disease recurrence with endothermal techniques in a similar observational capacity. The majority had recurrent disease associated with a pathological perforator. The prevalence of incompetent perforators associated with recurrent disease in the REVATA study (77 percent) was as prevalent as in the REVAS study (73 percent).

Recanalization rates in treated saphenous veins occurred in about 20 percent of recurrences and were due to either a perforator or branch inflow. About 24 percent of patients in the REVATA study had reflux detected in untreated anterior accessory saphenous veins. Sixteen percent of patients had recurrence in untreated small saphenous veins and 14 percent had recurrence in untreated great saphenous veins. The combined recurrence rates from the untreated great and small saphenous veins are, likewise, very similar to the disease progression rate of 31.7 percent in Perrin’s REVATA study.

While some comparisons can be made between the REVAS and REVATA studies, the REVATA study did not readily mention any causes of recurrence, such as technical error, neovascularization and pelvic venous insufficiency. Perrin’s REVATA study didn’t mention recanalization as a cause of recurrence. This could seem as though some of the mechanisms of recurrence are particular to only one form of treatment, but there have been other studies that report neovascularization after endovenous ablation, and recanalization after ligation and stripping.\(^4\)

Unfortunately, neither Perrin’s 2006 REVAS study nor the 2013 REVATA study could estimate the true prevalence of recurrent disease, as the patients were not enrolled in the study at the time of initial treatment. There have been several prospective, randomized controlled trials (RCTs) published since Perrin’s REVAS study that estimated the true clinical recurrence rates. But those studies had relatively low patient enrollment, did not include newer ClosureFast RF technology, and had fairly short follow-up periods.\(^5\)

In January of 2016, O’Donnell published a “must-read” meta-analysis of seven randomized, controlled trials comparing endovenous ablations to ligation and stripping with a two-year minimum follow-up period.\(^1\) The study included more than 1,500 limbs, with 686 of those limbs receiving RFA or EVLA. The rates of clinical recurrence in the endovenous arm of the meta-analysis varied from as low as 9 percent in two years, to as high as 46 percent in five years.
In all comparisons between endovenous ablation and surgical ligation, there was no statistically significant difference in the rates or locations of recurrence between the two treatment arms. (I had to re-read this section of the results and study Table II and Table V several times before I could believe it). More than half of the patients with recurrence – in both treatment arms of these studies – underwent re-treatment. This made me feel like I did when I found out Santa Claus wasn’t real. Surprised. Sad.

**REDUCING RISK**

If the risk for recurrent varicose veins after endovenous ablations is truly more than 50 percent at five years, let’s reduce that risk. Here’s where to start:

- **Weight reduction** is proven to reduce swelling and venous leg ulcers after bariatric surgery. While I do not recommend bariatric surgery as a first-line treatment, I do counsel patients on the importance of trying to lose weight and why.

- **Graduated compression stockings** worn long-term, after endovenous ablations, combats perpetual disease. A study published in 1994 compared daily use of graduated compression stockings to no stockings after open surgery. The author found a 6 percent recurrence rate in the stocking group and a 71 percent recurrence rate in the control (no stocking) group. Unfortunately, this study was hampered by dropout and crossover due to non-compliance, so take care in interpreting the results. Additional randomized controlled trials in this area would be valuable.

A Cochrane review involving 466 patients found venous ulcer recurrence was significantly higher among patients who did not wear compression stockings. Recurrent vein disease doesn’t always involve ulcerations, so it’s difficult to apply these results to patients with $C_0$ – $C_n$ disease. However, if wearing graduated compression helps reduce the relapse rate of venous ulcers, it’s plausible [that it would] help reduce the recurrence rate of less severe vein disease and also recurrent disease after endovenous ablation.

Subsequently, I recommend that my patients wear a minimum of 15-20 mm Hg, knee-high, graduated compression stockings at least five days a week. I also recommend 30-40 mm Hg compression for patients with risk factors for recurrence, such as:

- Morbid obesity
- Calf muscle pump failure
- Previous recurrence
- Deep venous insufficiency

I have occasionally needed patients to use 40-50 mm Hg graduated compression, with full compliance, for calcitrant venous ulcerations.

**CONCLUSION**

With such high recurrence rates, it is no wonder that patients seek further treatment. But, I can only speculate why some patients come to see me after having treatments from another provider. I’ve gathered that these patients were either never educated on the disease process, advised of likelihood of recurrence or simply forgot.

Informed consent, including a stated recurrence risk of at least 30 percent – but perhaps as high as 50 percent – should be employed. If patients find the risk of recurrence unacceptable, they may do better with conservative management only. Properly informed patients who experience recurrence usually understand it was not likely a technical or tactical failure. As a physician, my intent is to eliminate recurrent vein disease. However, proper education and counseling ensures that patients return to see me, rather than seek a competitor if need be.

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