

Zapping Varicose Veins

Improving the Quality of Life for Sufferers



By Jeannette Soriano, MD

Venous diseases affect many people and represent a major cost to the health-care system. Hippocrates used compression therapy and performed the first recorded sclerotherapy by inserting splinters of willow trees into large varicosities (willow trees contain salicylates).¹

In industrialized countries, the incidence of venous disease in men over the age of 15 is 10% to 15%, and for women it is 20% to 25%.² Risk factors for varicose veins include pregnancy, complex genetic predisposition, female gender (it is two to three times more common in women) and occupation (prolonged standing or sitting).³ A leg ulcer can develop three to seven years later in 5% to 7% of patients with deep venous thrombosis (DVT).⁴

Studies show that patients with chronic venous insufficiency (CVI) and venous ulcers can improve their quality of life with treatment.⁵ CVI is one of the 10 most common reasons for medical referrals in the U.S., causing significant symptoms in 24 million people, skin changes in six million to seven million people, and leg ulcers in 500,000 people. The cost associated with these conditions is at least one billion dollars annually.⁶

What are varicose veins?

Varicose veins are the result of weakening of the venous valvular apparatus. When only valve incompetence and reverse blood flow are present in the superficial venous system, we speak of primary varicose vein disease. Varicosities arising after DVT and post-phlebitic syndrome are called secondary. Rare causes of varicose vein disease include: trauma to the perforator veins and congenital absence of venous valves.

Venous Diseases

Investigation and management of patients with venous disease

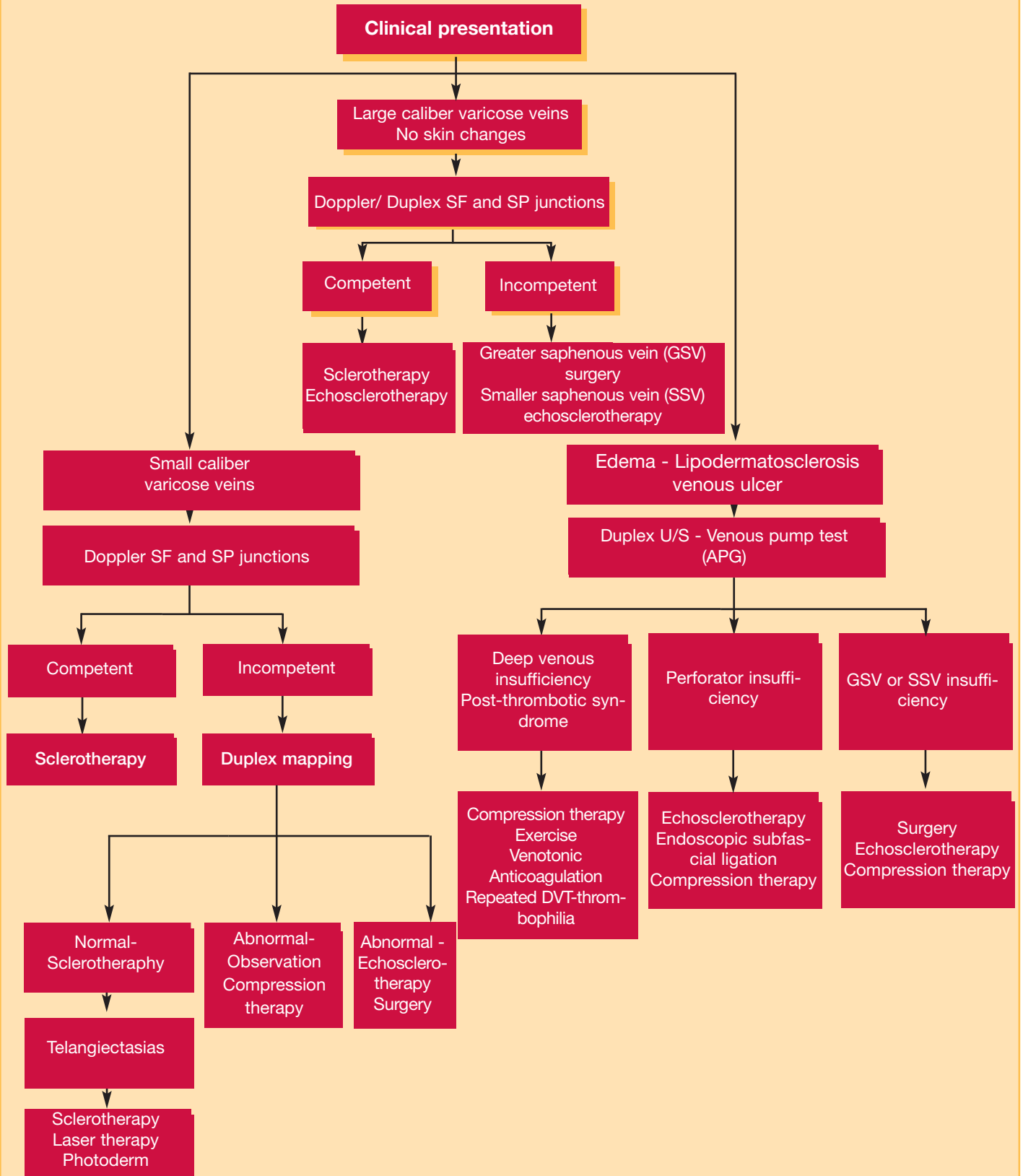


Figure 1. Investigation and management of patients with venous disease.

Compression Therapy Table		
08 - 20 mm Hg	Superficial effect	<ul style="list-style-type: none"> • Prevention of varicose veins • Prevention during pregnancy • Minor symptoms - fatigue, cramps
20 - 30 mm Hg	Moderate superficial effect	<ul style="list-style-type: none"> • Minimal edema • Truncular varicose veins • Pregnancy varicose veins • Post-sclerotherapy
30 - 40 mm Hg	Superficial, mild deep effect	<ul style="list-style-type: none"> • Post- DVT • Post-stripping • Post-phlebectomy • Venous ulcer therapy • Superficial phlebitis • Edema after trauma • Chronic venous insufficiency
40 - 50 mm Hg	Superficial deep effect	<ul style="list-style-type: none"> • Lymphedema • Severe post-thrombotic syndrome

Figure 2. Compression therapy table.

What are some of the symptoms?

The size of varicosities does not always correlate with symptom severity. Very small varicosities may cause discomfort, burning sensation, nocturnal cramps and restlessness of the legs, while some patients with large varicosities have no symptoms at all.

The most common symptom associated with large varicosities is a heavy feeling and fatigue in the legs at the end of the day. However, one study reports that symptoms, such as heaviness, tension, aching, swollen sensation, restless legs, cramps, itching, and tingling are extremely common in the general population, but not always associated with varicosities.⁵ These symptoms increase with age and are more common in women than in men when varicosities are indeed present.



Dr. Soriano presented at the University of Calgary, Evening Course Program and is a practicing family physician, Market Mall Professional Centre, Calgary, Alberta.

How do I investigate and manage venous diseases?

An algorithm for this is given in Figure 1. As technology improves, the use of Doppler and Duplex scanning examination is becoming a routine part of the evaluation. Standard physical examination, however, is essential and is performed with the patient standing, on a raised surface, in a well lit room.⁷ Examination of the abdominal wall can reveal evidence of venous bypass formation when there is chronic obstruction of the femoral and iliac vessels. The long and short saphenous veins, their branches and the perforating veins are sequentially assessed. The gaiter area can reveal evidence of pigmentation, lipodermatosclerosis and other skin changes associated with varying degrees of venous insufficiency. Difference in circumference of the leg is an important finding.

Duplex ultrasonography allows the practitioner to evaluate the superficial veins, deep veins and perforator veins. In the presence of an ulcer, it allows mapping of the ulcer bed. This can also help in planning sclerotherapy when there is a recurrence after surgery in the presence of truncal varicosities, and suspected perforator and short saphenous vein insufficiency.

Practice Tips

What type of patient benefits from laser therapy?

Lasers are most beneficial in patients with belonephobia (needle phobia), tendency to post-sclerotherapy matting or allergy to sclerosing medications. It is best used in telangiectasias.

What is compression therapy?

The treatment of CVI and varicose veins should always include the use of compression therapy. It augments the body's natural calf muscle pump to improve venous return.

Compression therapy helps distended veins return to normal size and often valvular insufficiency is corrected. Other benefits include relief of pain in patients with post-thrombotic syndrome and enhancement of fibrinolysis (which can reduce fibrosis and promote healing in patients with severe CVI and venous ulcers). There are specific guidelines for the prescribing of compression stockings (Figure 2).

Compression stockings provide 100% of pressure at ankle level, 70% at knee level and 40% at upper thigh level. In general knee length stockings are adequate. Longer stockings can compromise venous return at the popliteal fossa.

Ankle/brachial index measurements (ABI) are essential when prescribing compression therapy for patients with even mild peripheral arterial insufficiency, and accordingly, prescription for compression therapy needs to be adjusted. Patients with an ABI of less than 0.6 should be evaluated by a vascular surgeon. Compression therapy plus walking as exercise can combine to improve both venous return and arterial circulation.

When is surgery preferred?

Surgery is the preferred treatment when the greater saphenous vein trunk is dilated and there is valvular insufficiency at the sapheno-femoral junction, in the presence of CVI and trophic skin changes. A short segment stripping prevents trauma to the saphenous nerve and leaves the distal portion for possible use as graft in coronary artery bypass surgery.

Less traumatic and less invasive techniques allowing more rapid return to normal function are under investigation.⁶ This includes Endovenous Obliteration with Radio frequency resistive Heating (EORH). Endovenous laser offers a similar promise for the treatment of the greater and lesser saphenous vein. Incompetent perforators can now be treated by subfascial endoscopic ligation, thus avoiding a large scar and poor healing.

What is sclerotherapy?

The injection of a solution into a vein to cause intimal damage and fibrosis has been practiced since the '40s. Tournay in France, Sigg in Switzerland and Fegan in Ireland are considered the fathers of modern sclerotherapy, though their techniques are quite different from each other.

Sclerotherapy is generally used to prevent complications related to varicose veins, to relieve symptoms and to improve the appearance of the leg. It is the preferred modality for small varicose veins, large non-saphenous varicose veins and telangiectasias.

What is echosclerotherapy?

In 1989, the first ultrasound guided injection in the popliteal fossa was performed by Dr. R. Knight in Florida. This event changed the way phlebology is practised. Echosclerotherapy increases accuracy, safety and effectiveness of the injection technique in areas where there is high risk of intra-arterial injection. It also enhances the ability to inject large varicose veins not clinically detectable. Echosclerotherapy is recommended for injections of the short saphenous vein, anterior saphenous vein, post-surgical recurrence, perforator veins and in the obese patient. A foam preparation of the sclerosing solution (Trombovar and Polidocanol) can be used which further enhances accuracy, safety and effectiveness of the procedure.⁸

Practice Tips

Patients with an ABI of less than 0.6 should be evaluated by a vascular surgeon.



ALTANA


Solvay
Pharma



Registered trademark used under license from ALTANA Pharma AG, Germany.

When do you use phlebotonic agents?

These agents are commonly used within conventional western medical practice. They are available in Canada. Bioflavonoids (*i.e.* diosmin, oligomeric proanthocyanidin complexes and hesperidins) improve venous tone, vein elasticity when assessed by phlethysmography, and also decrease plasma markers of endothelial activation.

Horse Chestnut Seed Extract (HCSE) has venotonic, vascular protective, anti-inflammatory and free radical scavenging effects. It corrects capillary hyperpermeability and associated edema.¹⁰ More studies are needed on the long-term use of these products. In Canada, HCSE micronized formula for oral use is available without a prescription. 

References

1. Olivencia JA: History of the surgical treatment of varicose veins of the lower extremities. *Journal of Phlebology* 2001;1(1): 11-6.
2. Adhikari A, Criqui MH, Wooll V, et al: The epidemiology of chronic venous diseases. *Phlebology* 2000; 15: 2-18.
3. Cornu-Thenard A, Boivin P, et al: Importance of the familial factor in varicose disease: Clinical study of 134 families. *J.Dermatol Surg Oncol* 1994; 20(5): 318-26.
4. Strandness DE, Langlois Y, Cramer M, et al: Long-term sequelae of acute venous thrombosis. *JAMA* 1983; 250(10):1289-92.
5. Bradbury A, Evans C, Allan P et al: What are the symptoms of varicose veins? Edinburgh vein study cross sectional population survey. *BMJ* 1999; 318(7180): 353-6.
6. Rautio T, Ohinmaa A, Perala J, et al: Endovenous obliteration versus conventional stripping operation in the treatment of primary varicose veins: A randomized controlled trial with comparison of the costs. *J Vasc Surg* 2002; 35(5): 958-65.
7. Lessard A: Venous disease and phlebology. *The Canadian Journal of Diagnosis* 2001; August: 65-73.
8. Frullini A, Cavezzi A: Sclerosing foam in the treatment of varicose veins and telangiectases: History and analysis of safety and complications. *Dermatol Surg* 2002; Jan 28(1): 11-5.
9. Lupton JR, Alster TS, Romero P: Clinical comparison of sclerotherapy versus long-pulsed Nd:YAG Laser treatment for lower extremity telangiectases. *Dermatol Surg* 2002; Aug. 28 (8): 694-7.
10. Pittler MH, Ernst E.: Horse chestnut seed extract for chronic venous insufficiency: A criteria based systematic review. *Arch of Dermatol* 1998; 134(11): 1356-60.

Suggested Readings

1. Labropoulos N, Landon P, Jay T: Duplex Scanning in Phlebology. *Dermatol Surg* 2002; 28(1): 1-5.
2. Consensus Conference on Sclerotherapy of varicose veins of the lower limbs: Edited by Baccaglini U, Spreafico G, Castoro C and Sorrentino P: Istituto di Chirurgia Generale II, University of Padua, Padua, Italy.
3. Mackay DJ, Candidate ND. Hemorrhoids and varicose veins: A review of treatment options. *Alternative Medicine Review*. 2001 Vol 6, 2: 126-40.
4. Frullini A, Cavezzi A: Sclerosing foam in the treatment of varicose veins and telangiectases: History and analysis of safety and complications. *Dermatol. Surg* 2002 Jan 28(1); 11-5.
5. Abenheim L (Canada), Clement D (Belgium), Norgren L (Sweden): The International Task Force on Chronic Venous Disorders of the Leg (CVDL).