

Management of Varicose Veins: A Review of Literature

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Abstract

Lower extremities venous insufficiency is a frequent disorder that can cause a variety of symptoms, such as ulceration, soreness, swelling, and bulging leg veins. Whereas there is many other treatment choices, the more recent endovascular treatments are simple, safe, rapid, and very effective at reducing symptoms. Foam sclerotherapy, thermal ablation, and mechanical chemical ablation are minimally invasive endovascular techniques commonly used in the treatment of varicose veins. This review article provides a comprehensive overview of these therapeutic options, emphasizing their effectiveness and suitability for various patient profiles. Furthermore, the article provides an in-depth exploration of the various grading systems employed to assess the severity of varicose veins, emphasizing their significance in tailoring individualized treatment plans. These grading systems serve as essential tools for clinicians, helping them evaluate disease progression and determine the most suitable therapeutic interventions. The discussion extends to the pivotal role of advanced imaging techniques in both the diagnosis and management of varicose veins, underscoring their ability to enhance precision in treatment planning. Additionally, the article examines a comprehensive array of management strategies, ranging from conservative approaches to surgical options, while presenting evidence-based insights to ensure optimal patient outcomes. By integrating these elements, the article aims to equip healthcare providers with the knowledge necessary to deliver high-quality, patient-centered care for individuals affected by this condition.

Keywords: Varicose veins, tortuous veins, swelling, heaviness, telangiectasia, compression stockings, vein stripping, sclerotherapy

INTRODUCTION

Varicose veins, sometimes called varices or varicosities, are bulging, twisted veins that typically occur in the legs and are a kind of chronic venous illness. Based on clinical definitions, a varicose vein is a dilated vein that measures 3 mm in diameter or more when measured standing up. Varicose veins predominantly affect the larger saphenous vein and the smaller saphenous vein, both of which are in the legs. These veins are particularly susceptible to the condition because they play a critical role in transporting blood from the lower extremities back to the heart, working against the force of gravity. This constant pressure makes them more vulnerable to becoming enlarged, twisted, or dysfunctional. While varicose veins are most associated with the legs, they can also develop in other

areas of the body, such as the pelvic region, although these cases are comparatively rare and often less severe.

The condition may involve a single vein or multiple veins, with the size, shape, and appearance of the varicosities varying significantly between individuals and even over time. Although varicose veins can occasionally lead to symptoms, such as discomfort, aching, or a feeling of heaviness in the legs, severe complications like ulcers or blood clots occur infrequently. For most patients, the condition is more of a cosmetic

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concern, though it can impact quality of life depending on its severity. Understanding the affected veins, potential symptoms, and progression of varicose veins is crucial for effective management and treatment. Without treatment, varicose veins are likely to persist, potentially worsening in appearance or symptoms over time. However, many individuals manage the condition without experiencing major health risks, although some may choose treatment for cosmetic reasons or to relieve discomfort [1, 2].

Definition

“Varicose veins are swollen veins that appear just under the skin in legs, feet or ankles [3].”

MEANING OF VARICOSE VEINS

The Latin word varicous, meaning dilated, is the origin of the English term varicose. In addition to being dilated, varicose veins are also elongated and tortuous. From a physiological perspective, a varicose vein is one that allows reverse flow through malfunctioning valves (Figure 1) [3, 4].

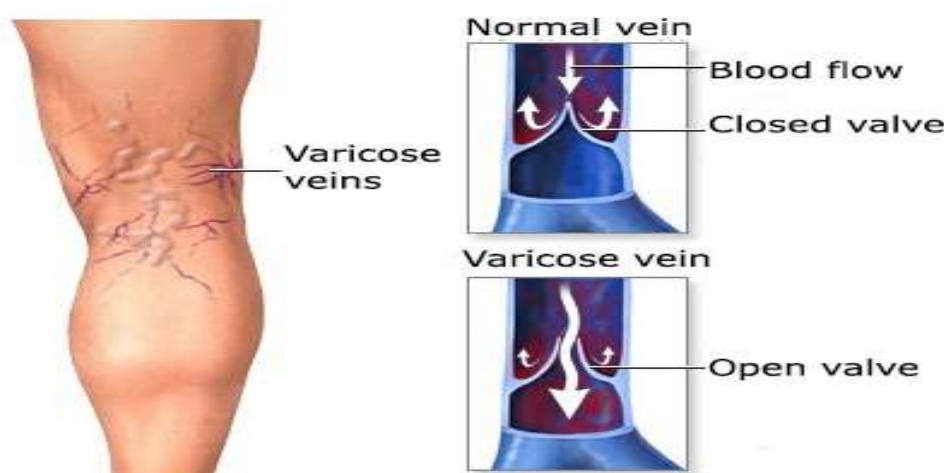


Figure 1. Varicose vein in lower extremities.

Causes of Varicose Veins

1. *Valve Malfunction:* Failure of the tiny valves inside veins that typically stop blood from flowing backward is the main cause of valve dysfunction. The veins may fill with blood if these valves deteriorate or break.
2. *Weak Vein Walls:* Varicose veins and valve problems can result from the suppleness of vein walls eroding with time.
3. *Genetic Factors:* Families where the condition runs in the family are more likely to have varicose veins.
4. *Hormonal Changes:* Varicose veins may become more likely because of hormonal changes that occur during pregnancy, menopause, or puberty.
5. *Prolonged Standing or Sitting:* In some occupations or activities, prolonged standing or sitting can raise vein pressure, which can result in the development of varicose veins.
6. *Age:* Varicose veins are a result of venous valve wear and tear brought on by aging.
7. *Obesity:* Being overweight increases the risk of varicose veins by putting extra strain on veins.

Stages of Varicose Veins

The progression of varicose veins is categorized into distinct phases, providing both patients and healthcare professionals with a structured framework to evaluate the severity of the condition. This classification serves as a crucial guide for determining appropriate treatment plans and taking preventive measures to avoid potential complications. Each phase presents unique challenges, symptoms, and levels of discomfort, highlighting the importance of tailored care strategies. By addressing the specific needs of each stage, medical interventions aim to halt the progression of the

disease, alleviate pain, and improve the patient’s overall quality of life (Table 1 and Figure 2) [5].

Table 1. Stages of varicose veins.

Stage	Description
0	No visible signs
1	Visible blood vessels, spider veins
2	Enlarged Varicose Veins
3	Edema without skin changes
4	Skin color and/or texture changes
5	Healed ulcer
6	Acute (active) ulcer



Figure 2. Stages of varicose veins.

Clinical Manifestation

1. Legs that hurt and are heavy.
1. Spider veins (telangiectasia) visible on the afflicted leg.
2. Swelling in the ankles.
3. A glossy, brownish-yellow discoloration of the skin near the afflicted veins.
4. Skin that is red, dry, and itchy in certain places; also known as venous eczema or stasis dermatitis.
5. Spasms in the muscles during abrupt motions, like standing unusual bleeding or a delayed healing period for wounds in the afflicted area.
6. The skin around the ankles is shrinking due to lip dermatosclerosis.
7. People who suffer from varicose veins and other forms of chronic venous insufficiency seem to share restless legs syndrome as a common overlapping clinical symptom.
8. Atrophied blanche, or white structures that resemble scars a throbbing or burning feeling in the legs.

Diagnosis

1. *Physical Examination:* Based on the patient’s symptoms and the way the veins look, a doctor may typically diagnose varicose veins.

1. *Ultrasound*: By measuring blood flow and obtaining images of the veins, a duplex ultrasound can assist in determining the degree of vein damage [4].

Complications of Varicose Veins

The majority of varicose veins are very benign, but because they impair circulation in the affected leg, severe varicosities can cause serious consequences [6].

1. Weight, discomfort, ache, and trouble standing or walking for long periods of time.
1. Skin diseases, such as dermatitis that may cause skin loss.
2. Risk venous ulcers are the term for skin sores, particularly those that occur close to the ankle [7].
3. Formation of sarcoma or cancer in chronic venous ulcers. Malignant transformation has been documented in more than 100 cases, with a reported incidence of 0.4%–1%.
4. Severe bleeding from small injuries is especially concerning for elderly people.
5. Affected veins clotting blood; also known as superficial thrombophlebitis. These are usually limited to the superficial veins, but they have the potential to spread into the deep veins and cause more significant issues.
6. Acute fat necrosis can happen, particularly in obese individuals with varicose veins near the ankle.

Preventative Measures

To avoid varicose veins, take the following actions [8–10].

1. *Maintain a healthy weight*: Vein pressure is lessened when one maintains a healthy weight.
2. *Participate in regular exercise*: Exercise on a regular basis enhances blood flow to the legs.
3. *Keep your feet up while you sit*: To increase blood flow, raise your legs when you're at rest.

When sitting, refrain from crossing your legs.

Compression Stockings

These facilitate blood flow back to the heart by compressing the muscles and veins.

MANAGEMENT

Varicose veins can be treated with certain medications if at-home therapy is ineffective. These consist of:

Laser treatment

Laser energy can damage and scar varicose veins. This is what we call ablation.

Simple laser therapy can be used to treat spider veins and other small veins that are close to the skin. Your skin receives an external application of the laser.

Endo venous laser therapy uses an intravenous laser fiber. A vein that has undergone internal laser ablation shuts.

Vein Stripping and Ligation

The varicose vein is extracted (stripped) and tied up (ligated) after an incision is made over it.

Radiofrequency Ablation

The vein wall collapses and closes when radiofrequency energy is delivered to it through a catheter.

Sclerotherapy

To cause a varicose vein to close, a chemical is injected into the vein to harm and scar its inner lining.

Ambulatory Phlebectomy

The varicose vein is removed by making many small skin incisions. Another name for this is stab avulsion [8].

MEDICATIONS MANAGEMENT

While there are no medications specifically for treating varicose veins, certain drugs may help alleviate symptoms:

1. *Pain Relievers*: Ibuprofen and aspirin are examples of over-the-counter drugs that can lessen pain and inflammation.
2. *Flavonoids*: Supplements like diosmin can help reduce leg swelling and discomfort [8].

CONCLUSIONS

Veins that enlarge, bulge, and twist excessively are known as varicose veins. Usually, they appear when blood flow is impaired. Although they can arise in other bodies, they typically affect the legs and feet.

People can utilize home remedies to control varicose veins, which often only cause modest discomfort. These strategies include frequent exercise, keeping a healthy weight, and avoiding prolonged standing or sitting.

Even if symptoms are not severe, people with varicose veins should see a doctor to prevent dangerous consequences like deep vein thrombosis.

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