



**A REVIEW ON JALOKAVACHARAN IN  
VARICOSE VEIN- A CASE STUDY**

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**Abstract**

Varicose veins are tortuous, enlarged veins that are typically found in the lower extremities. They damage blood vessels, causing painful swelling and blood clots, affecting people as they age and affecting a person's proficiency, productivity, and life quality. The main causes of varicose vein disease are prolonged standing and obesity. This review discusses the mechanisms, prevention, risk factors, complications, and treatment of varicose veins. Endovascular, surgical, and herbal treatments all improve quality of life and reduce the secondary complications of varicose veins. Aside from these treatments, varicose vein disease can be avoided by practising regular yoga/exercise and eating a variety of fruits and vegetables such as grapes, blackberries, avocados, ginger, and rosemary. Varicose veins are typically a benign process with several issues that can impact an individual's life quality and potentially lead to life-threatening complications. However, there are a variety of surgical, endovascular, and chemical treatments available to improve quality of life and reduce secondary complications associated with varicose veins. Patients with varicose veins should take an antioxidant medication from the flavonoid group to lower their arterial blood pressure, reduce their risk of developing atherosclerosis, and avoid thrombotic incidents. Important teaching

points Chronic venous disease is a pathological condition affecting the vein circulatory systems of the lower extremities. The main causes of varicose vein disease are prolonged standing and obesity. Endovascular, surgical, and herbal treatments improve quality of life and reduce secondary varicose vein complications. Flavonoids, saponins, and other venoactive drugs have a therapeutic effect on chronic venous disorders. Phlebotropic drugs are semi-synthetic substances that are widely used to treat various forms of chronic venous insufficiency. Foods high in phytoconstituents are more effective in the treatment of varicose veins.

**Keyword** Varicose vein; foam sclerotherapy; herbs; Jalokavacharan; Treatments; Therapy.

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## Introduction

Varicose veins are saccular dilatations of veins that are frequently tortuous. Certain jobs, such as bus drivers and police officers, necessitate prolonged standing, and those who work in these positions are prone to varicose veins. It can also happen to people who do a lot of muscle work, like rickshaw pullers and athletes. Varicose veins are often compared to Sirajagranthi in Ayurveda. According to Acharya Susruta, vayu enters the siras as a result of vataprakopakanidanas such as physical exertion and straining, causing Sampeedana, Sankocha, and Vishoshana and producing Granthi formation in Sir as manifesting Sirajagranthi.

Varicose veins are a result of verticality versus gravity. The most common symptom of varicose veins is aching or heaviness, which typically worsens throughout the day or with prolonged standing and is relieved by elevation or compression stockings. Ankle swelling and itching are two less common symptoms. Typically, the presence of tortuous dilated subcutaneous veins is clinically obvious. In approximately 60% and 20% of cases, these are limited to the long and short saphenous systems, respectively. Varicose veins are caused by the incompetence of the valves and the weakness of the vein walls. Venous insufficiency develops when varicose veins become chronic. Secondary causes include pregnancy-related venous outflow obstruction, fibroid, ovarian cyst, pelvic cancer, ascites, and deep vein thrombosis. Prolonged standing, advanced age, obesity, hormonal replacement therapy, and other risk factors for varicose veins are all common. The prevalence of visible varicose veins in adults is 25-30% in women and 15% in men. Individuals who work in long-term positions.

e.g. Varicose veins are common in police officers, conductors, and others. Varicose vein treatment in modern science includes surgical procedures such as

stripping and sclerotherapy. However, these procedures have drawbacks and do not provide complete relief.

Older age, obesity, ma-surgeries, hormonal replacement therapy, and other risk factors for vari-veins are all common. Women are more affected than men (10:1). Varicose veins are common in people who work for long periods of time, such as police officers and bus drivers. 2 Heaviness in the legs, muscle cramps, itching around the swollen vein, and pain in the entire leg or the lower part of the leg are common symptoms. Leg bandaging, surgical treatment (Saphenous vein stitching), Scelerotherapy, and other procedures are used to treat varicose veins in modern science, but no medicinal treatment is available.



Varicose veins are associated with Siraaj Granthi, which is mentioned in the Su-shruta Samhita and Ashtang Sangrah.

### Causes

Varicose veins develop when the valves within the veins fail to function properly, allowing blood to backflow. Blood pools beneath the affected valve, causing the vein to enlarge and stretch. Varicose veins appear as bluish-green lines beneath the skin that may bulge out or appear twisted and contorted.

The superficial veins of the legs are the most commonly affected by varicose veins, owing to issues with vein junctions (where different veins join together) in the upper thigh, behind the knee, and in the calf muscle. They can, however, occur in other parts of the body (such as haemorrhoids, which are varicose veins in the anus or rectal area).

### Symptoms of varicose veins include:

- A bluish vein or veins that bulge
- Leg swollenness

- Leg aches and pains
- Leg and foot heaviness
- Itching around the vein or veins
- Skin colour changes around the vein or veins
- Nighttime leg cramps

### **Diagnosis of Varicose Vein**

- Recording history
- Thorough physical examination in adequate lighting
- A positive tap test followed by a negative Perthes test.
- Angiogram
- Doppler test-an ultrasound scan that determines the direction of blood flow in the veins and looks for blood clots.
- Ultrasound colour duplex scan
- Venography
- Ambulatory venous pressure measurements
- Tourniquet tests (such as the Trendelenberg test)

Varicose veins are usually visible, so a diagnosis can be made based solely on their appearance. A physical examination will be performed by a doctor to determine the extent of the varicose veins.

They may also order a doppler ultrasound test, which allows them to see the blood flow and vein structure on a monitor. It can also detect the presence of blood clots. A duplex ultrasound may be performed as well. This is a more sophisticated scan that displays the image in colour.

Another test, known as air plethysmography (APG), may be used to determine how well affected veins are functioning by measuring blood flow through veins and arteries in the leg.

### **Treatment**

Unless symptoms are causing problems, treatment may not be medically necessary. Some people, however, may seek treatment for cosmetic reasons because they are dissatisfied with the appearance of varicose veins.

Elastic compression stockings may be recommended if the varicose veins are small and not too painful. These are worn during daily activities to help compress the veins, preventing them from stretching and reducing discomfort or pain.

A variety of surgical and non-surgical procedures are available to seal or remove varicose veins in more difficult cases. Sometimes a combination of treatment methods is used. Treatment options for varicose veins have evolved

significantly over the last 25 years and continue to evolve, particularly with the development of less invasive procedures that do not require hospitalisation.

### **NON-SURGICAL TREATMENT:**

- Sclerotherapy

Sclerotherapy involves injecting a special solution into the affected vein with a fine needle. The solution irritates the vein lining, causing it to harden (sclerose) and close off. As a result, blood is unable to enter that section of the vein and is forced to flow through other, healthier veins.

- Ultrasound guided sclerotherapy can be used to treat deeper varicose veins (UGS). A duplex ultrasound allows the doctor to see the vein on a screen and guide the needle within the vein.

The vast majority of people who have undergone sclerotherapy treatment have positive outcomes with few side effects. Sclerotherapy, on the other hand, is not for everyone. Pregnancy, pre-existing clotting disorders, and sensitivity to the sclerotherapy solution are all contraindications to this treatment.

- Endovenous thermal ablation

A small incision is made at one end of the affected vein, and an ultrasound scanner guides the insertion of a catheter (tube). Heat generated by a laser or radiofrequency emitter is used to seal or destroy the vein once it is in place.

### **SURGICAL TREATMENT:**

If an ultrasound scan reveals that the vein junction where the varicose vein originates is not functioning properly, the most common surgical treatment is to tie off the varicose vein at this junction (most commonly the upper thigh, behind the knee, or in the calf muscle). A small incision in the leg is made, the vein junction is located, and the varicosed vein is tied off. The vein is left in place, but blood cannot flow into it.

Another surgical technique for treating superficial varicose veins is "vein stripping," which involves completely removing the affected vein. At either end of the affected vein, a small incision is made in the skin, and the junction where the affected varicose vein joins a larger vein is tied off. A flexible wire is then inserted into the varicose vein and withdrawn, thereby removing the vein.

Both types of surgery can be performed under general or spinal anaesthesia, and a hospital stay may be necessary. The surgeon performing the surgery will determine this.

## **Varicose Vein Treatment Options in India**

If the condition is not severe, the patient is initially advised to use conservative methods to control the disease's progression. These include wearing compression stockings, exercising, and elevating the legs. If these methods do not work, the patient should consider one of the surgical treatment options.

### **1. Conservative Treatment Methods**

These conservative methods are used to treat varicose vein symptoms:

- Maintaining an elevated leg position.
- Wear compression stockings that fit snugly around your legs.
- Using pneumatic compression devices on an intermittent basis.
- Anti-inflammatory drugs and flavonoids, for example.
- Using topical gels to alleviate symptoms.

### **2. Active Treatment Methods**

#### **a. Open Surgery**

Prior to the surgical procedure, the patient is given spinal or general anaesthesia. The surgeon makes several cuts from the groin to the ankle. After dissecting the leg, the underlying diseased veins are discovered. Strippers are passed through these veins and then extracted along with the diseased veins.

#### **b. Endovenous Laser Ablation (EVLA)**

Before the surgery, the patient is given local anaesthesia to numb the area. This procedure does not necessitate any incisions. A small skin entry point is used to insert a thin fibre into the damaged vein. When the fibre is pulled back through the vein, it emits energy via the laser light. The targeted tissues respond to light energy with extreme precision, without affecting neighbouring tissues. It causes the damaged vein to close off. Because these veins are superficial and only carry a small amount of blood, the restricted blood flow to these veins is redirected to other healthier veins.

#### **c. Radio Frequency Ablation:**

It is also a minimally invasive treatment for varicose veins. Using an ultrasound, the surgeon inserts a radiofrequency catheter into the damaged vein. Radio energy is used to treat the veins, causing the affected veins to close. Blood flowing towards these veins will naturally divert to other healthy and normal veins. Varicose vein recurrence rates are lower than with open surgery but higher than with EVL ablation.

d. Sclerotherapy:

It is a non-surgical treatment for varicose and spider veins in the legs. To shrink the diseased veins, a sclerosant is injected into them. This sclerosant solution eventually disappears from the body. However, some patients may require sclerosant injections more than once. This technique is only effective if used correctly. When compared to other procedures, the recurrence rate after this method is quite high.

**Side effects of the treatment**

Within five years, half of people who have surgical stripping develop varicose veins again, and varicose veins can develop again after endovenous ablation as well.

Potential side effects of these treatments include:

- Scarring.
- Burns on the skin.
- Infection.
- A nerve injury.
- DVT (deep vein thrombosis) (a blood clot in a vein deep inside your body).

Sclerotherapy can cause side effects that include:

- For a few days, you may experience redness or bruising where a needle was inserted into your skin.
- Brown spots on the skin where the needle made contact (for several months).
- For a few months, lumps or hardness.

**Review of Literature**

According to Franz A, Wann Hansson (2016), who conducted an exploratory qualitative study, patients with varicose veins classified C4 had significant symptoms of the disease that affected daily living, necessitating the use of different coping strategies to manage symptoms and significant adjustments related to activities and social life [3].

Cardia G et al. (2012) concluded in their article that leg varices is a progressive disease, so treatment is not limited to a single procedure, and adequate monitoring during follow-up is essential. [4]

Self-reported evidence suggested a familial susceptibility in a study conducted by Lee AJ et al. (2003) [11].

CornuThenard et al. (1994) conducted a case control study on 134 families and found that heredity plays a significant role in the development of varicose veins [12].

Kohno K et al (2016) examined the data and concluded that genetic factors play a significant role in the familial transmission of varicose veins from parents to children [13].

Kohno K et al. (2014) concluded that both prolonged standing at work and being overweight aggravate varicose vein development [14].

Tuchsen F et al. (2000) interviewed 5940 participants and concluded that standing work is associated with subsequent hospitalisation for varicose veins in both men and women.

Lesiak M et al (2012) examined the data critically and concluded that Caesarean section, pregnancy, and family factors are associated with the inheritance of varicose changes and venous insufficiency.

M. Dindelli et al. (1993) conducted a survey on 611 women and found that being secondary or higher was associated with an increased risk of developing venous disease during pregnancy. Women who developed venous disease during pregnancy were more likely than those who did not to have a family history of varicose disease.

According to Naoum JJ and Hunter GC (2007), the clinical and histologic features of varicose veins are the result of disruption of the normal structure of the venous wall caused by remodelling of the extracellular matrix in response to increased venous distention and changed hemodynamic shear stress. Despite the fact that a number of genes, growth factors, and their inhibitors have been implicated in the pathogenesis of varicose veins,

In a retrospective cohort study conducted by Seidell JC et al (1986), it was discovered that the incidence of registered morbidity in the over weight group was higher for varicose veins in women.

According to Ahti TM et al. (2010), who conducted a cross-sectional study on 4903 participants, alcohol is likely to increase the risk of varicose veins in women, and smokers had a higher incidence of varicose veins in both genders compared to non-smokers [19].

Musil D et al. (2016) found that age  $\geq 70$  years and obesity were strongly associated with the occurrence of venous thromboembolism in a retrospective study of 641 patients. [20]



In an article, Henriot JP (1992) concluded that pain, regardless of its characteristics, location, or severity, is one of the most consistent clinical features of venous thrombosis and serves as a warning sign for clinicians. [23]

Oliver R et al. (2007) reviewed 24 articles on various parameters and concluded that leg ulceration has an impact on quality of life [24].

Joseph and colleagues (2016) After reviewing the medical records of 170 varicose vein cases retrospectively, researchers concluded that wearing compression stockings at work could improve quality of life [25].

Lozano SA et al (2014) present a clinical case and conclude that nutrition is an important factor in chronic wound prevention and treatment. The prevalence of low extremity wounds rises in the elderly population, and malnutrition risk is linked to physiological changes associated with ageing. [26]

Brown A (2012) reviewed 16 papers and concluded that increasing physical activity, improving mobility, and foot exercises may be beneficial in preventing ulcer recurrence. [27]

SSubramonia and TA Lees (2007) reviewed studies and concluded that no single treatment method is appropriate for all cases. Traditional surgery is safe and effective, and it is still widely used.

After reviewing 39 eligible studies, Murad MH et al. (2011) concluded that short-term studies support the efficacy of less invasive treatments, which are associated with less periprocedural disability and pain. [29]

Mwipatavi BP et al. (2016) concluded that soft tissue necrosis is a rare complication of foam sclerotherapy that is highly disfiguring and requires aggressive treatment after reviewing articles and case reports. As a result, prior to obtaining informed consent, it should be thoroughly discussed with the patient. [30]

Cotton SC et al. (2016) conducted a 798-person study and found that both ultrasound-guided foam sclerotherapy and endovenous laser ablation resulted in faster recovery than surgery[31]. According to Go SJ et al. (2016), who conducted a study on 17 patients who underwent endovascular laser ablation (EVLA), EVLA is an effective and minimally invasive treatment for varicose veins [32].

According to the Swedish Council on Health Technology Assessment, varicose vein surgery can reduce the recurrence of venous leg ulcers in the elderly. [33]

In that article, Tobon J (2010) mentioned that one strategy is to take a more holistic approach to chronic pain management (venous leg ulcer pain) that includes complementary and alternative medicine therapies [35].

Aquila I et al (2017) describe an 88-year-old man who was discovered dead in a large pool of blood at his home. An external examination of the victim revealed an ulcer on the left foot and visible varicose veins on the lower limbs that had not been treated. This report emphasises the importance of varicose vein treatment in preventing adverse events such as sudden death from acute haemorrhage. [36]

Engbers et al. (2015) found that clinical features of venous insufficiency, such as varicose veins, leg ulcers, and leg oedema, are risk factors for venous thrombosis in older people [37].

Varicosity most commonly affects the superficial venous system of the lower limbs, affecting either the long or short saphenous vein or both (Das.S, 2014).

In Ayurveda, classic varicose veins are closely related to the signs and symptoms of Siragranthi (obstructive circulation). Because of Vataprakopaka nidanas (causative factors that increase vata), such as physical exertion, straining, and for debilitated people, vitiated vata enters the Siras (veins), causing Sampeedana (squeezing), Sankocha (constriction), and Vishoshana (act of drying up), which produces round and protruded Granthi (cyst) in the Sira (Acharya YT, 2009)

Internal medicines were primarily aimed at pitta shamana (pitta pacification) and Raktaprasadaka (blood purification), thereby clearing the underlying pathology of Siragranthi. Sooranavaleham was prescribed for KoshtaShuddhi (bowel clearing) as a pathway for Vatanulomana (normal movement of vata). Siravyadham (venesection), is the treatment of choice prescribed by the classics for Siragata granthi (Varicose Vein) by Acharya Vagbhata (Vaidya Harishastri, 2011) and (Acharya Sharangadhara Parashuram Sastri, 2006) and is considered Ardhachikitsa (half treatment) of Shalya Tantra (Surgery) and is said to provide immediate results than S (Acharya YT, 2009).

According to study *jalaukavcharana* is an effective treatment for rapid reduction for pain associated with condition of deep seated vitiated doshas which present as inflammatory conditions of the joints. Leech therapy, although extensively used for treating pain throughout the medical history has never been evaluated in a modern scientific context. Acharya *Vagbhata* has explained the necessity of leech therapy in painful conditions of the joints where all signs of inflammation are present. These rakta dominated conditions vatarakta is to be treated by applying jalauka which are by nature mild and have properties like moistness, sliminess, dampness and coldness. Their ability is to suck the vitiated blood and tackle such inflammatory condition. In turn the leech salivary enzyme

contains active substances which are proven anti-inflammatory, histamine like vaso dilators and analgesic compound. [38]

Leech therapy involves an initial bite, which is usually painless (leech saliva contains a mild anesthetic), and an attachment period lasting 20 to 45 minutes, during which the leech sucks between 5 and 15 ml of blood. Its main therapeutic benefits are not derived from the blood removed during the biting (although this may provide dramatic relief at first), but from the anticoagulant and vasodilator contained in the leech saliva. These properties permit the wound to ooze up to 50 ml of blood for up to 48 hours. Leech bites usually bleed for an average of six hours. Salivary glands of a medical leech contain more than 100 bioactive substances and the salivary gland secretion has antiedematous, bacteriostatic, and analgesic effects; it possesses resolving activity, eliminates microcirculation disorders, restores the damaged vascular permeability of tissues and organs, eliminates hypoxia (oxygen starvation), reduces blood pressure, increases immune system activity, detoxifies the organism by antioxidant pathways, relieves it from the threatening complications, such as infarct and strokes, and improves the bioenergetic status of the organism.[39-40]

Lepa therapy possesses the qualities like instant pain relief, reduction of burning sensation and purification of blood. These qualities of lepa will bring the beneficial effects in the disease vranashopa particularly in the amavastha of the disease. Hence lepa therapy in the form of punarnavadi lepa is selected in the present study. Punarnavadi lepa is a potent shothahara, vedanasthapaka, vranashodhana, vranaropana and krimighna preparation.

The samprapti of vranashopha is characterized by rakta dusti and localized accumulation of dushita rakta. So, for cessation of progress of the disease as well as for cure of the disease one has to aim at removal of vitiated blood i.e. Raktamokshana therapy. Hence jaloukavacharana has been selected in the present study. [41]

### **Conclusion**

Jaloukavacharana showed early results in reducing Sirajagranthi signs and symptoms, particularly Shoola, Daha, Shotha, and Kandu. After a one-month follow-up, the procedure showed no recurrence, highlighting it as an effective long-term treatment for varicose veins. Varicose veins are strongly associated with Siraja granthi, according to Ayurvedic classics. Internal medicines such as Raktamokshan and Rakta prasadana (blood purifying) were administered

alongside Vatanulomaka aushadhas as a type of Raktadushti Vikara (Blood involved pathology) (those which promote regular movement of Vata).

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