

**JALUKAVACHARANA: A PROMISING AYURVEDIC TREATMENT
FOR VARICOSE VEINS AND VARICOSE ULCER****Dr. Chopade Sushama Dnyaneshwar*¹ and Dr. Diware Chinmay Gopal²**

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ABSTRACT

Venous insufficiency ulcers, also known as varicose ulcers, are wounds that occur due to the improper functioning of venous valves. These ulcers are the most common type of leg ulcers, accounting for 70% to 90% of cases. Venous ulcers usually develop on the medial distal leg and can be quite painful. If not treated properly, they can become infected, leading to cellulitis or gangrene, which may eventually result in amputation of the limb. Ayurveda, an ancient Indian system of medicine, also has a mention of chronic ulcers. In Sushrut Samhita, the most scientific description of wound and its management is found. The text gives utmost importance to bloodletting and considers leech therapy, or jalukavacharan, as the most unique and effective method of bloodletting, even in cases of infected wounds and

abscesses. Conservative management techniques, such as compression stockings, foot elevation, antibiotics, and regular dressing of the wound, are usually the first line of treatment for venous ulcers. However, if these methods fail, surgical treatments such as skin grafting, sclerotherapy, laser ablation, and other corrective surgeries may be used. It is important to note that recurrence of venous ulcers is common, ranging from 54 to 78% by the fifth year after healing. Therefore, long-term management and monitoring are crucial to prevent the development of new ulcers and manage existing ones effectively.

KEYWORDS: Ulcers, varicose, Sushrut Samhita, leech therapy, jalukavachara.

INTRODUCTION

Varicose veins act like pressure relief valves, relieving back pressure from below veins. However, increased venous hydrostatic pressure can lead to the development of varicose ulcers. These ulcers often manifest on the medial side of the leg due to long saphenous varicosity but can also occur occasionally on the lateral aspect due to short saphenous varicosity. They are usually shallow and superficial, have sloping edges, do not penetrate the deep fascia, and have pale granulation covering the floor. These ulcers are generally painless, unless they are affected by secondary infections or penetrate deep enough to cause peridontitis tibia. The surrounding area of the ulcer is hyperpigmented, indurated, and tender. Women are more commonly affected than men, and varicose ulcers always occur as a result of many years of venous disease.

Discomfort, pigmentation, eczema, and skin tenderness exist for years prior to ulceration.

In Ayurveda, varicose veins can be correlated with *sira granthi*, which can eventually lead to *dushtavrana*, or chronic ulceration. According to *Susruta Acharya*, *dushtavranalakshanas* are characterized by a too narrow or too wide mouth, too hard or too soft consistency, elevated or depressed surface, severe pain, hot or burning sensation, suppuration, redness, discharging pus or vitiated blood, an ugly sight, itching, swelling, boils, softness, frightfulness, and full of pus, muscles, vessels, and ligaments.

Raktamokshana, a para-surgical procedure to remove vitiated blood, is indicated in all diseases caused by *rakthadusti* according to Ayurveda. It is considered a *shodhana* procedure in *raktajavikara* and is extensively explained in *Sushruta samhita*. This ancient method has been practiced by various civilizations, including the Mesopotamians, Egyptians, Greeks, Mayans, and Aztecs. Leech therapy, known as *Jalaukavacharana*, is the most effective and safe method for *raktamoksha* due to its high efficacy. Its use is not only explained in the *samhitas* but is also referenced in the *koushika sutra* of *atharvaveda*. This unique method is particularly useful for draining impure blood in *Pitta dushita Rakta* diseases, various skin disorders, and all types of inflammatory conditions, especially in females, children, the elderly, and patients with a low pain threshold.

There are around 45 species of leech found in India, belonging to 22 genera. The Indian leeches, such as *Hirudinaria granulosa*, have medicinal properties and are often found in shallow water, hiding under weeds, logs, and stones. Leeches have two characteristic suckers

at both ends of their bodies to attach themselves to the host. One sucker surrounds the leech's mouth, which contains three sets of jaws with about 80 calcareous teeth that create a Y-shaped incision. Little openings between the teeth secrete saliva that contains chemicals that dilate blood vessels, decrease blood viscosity, and deaden the pain of the bite.

Aetiology of Varicose Ulcers

Varicose ulcers are caused by an increase in intravenous pressure due to various factors, such as deep vein thrombosis, chronic constipation, and prolonged periods of standing or sitting. The continuous increase in intravenous pressure damages the walls of the veins, leading to stretching, loss of elasticity, and hyper lipo-dermato-sclerosis. These changes eventually result in the development of ulcers.

Deep vein thrombosis occurs when blood clots form in the deep veins of the legs, leading to obstruction of blood flow and increased pressure. Chronic constipation causes straining during bowel movements, leading to increased abdominal pressure, which in turn affects the veins in the legs. Prolonged periods of standing or sitting can cause blood to pool in the veins of the legs, resulting in increased pressure and damage to the venous walls.

As a consequence of these factors, the veins lose their ability to function properly, leading to the formation of varicose veins. Over time, the damage to the venous walls becomes severe, resulting in a hyper lipo-dermato-sclerosis, a condition where the skin becomes thick and hardened. If left untreated, this condition can progress to the development of ulcers. Therefore, it is essential to identify and manage the underlying causes of varicose ulcers to prevent their development and recurrence.

Assessment for Blood-Letting

When considering bloodletting, it is important to thoroughly assess the patient's condition, including Aturabala (strength of the patient), Rogabala (strength of the disease), and Ashaya (the site of the disease). Bloodletting should be performed once every 15 days, along with Snehana (oleation therapy) and Swedana (sudation therapy). The appropriate time for bloodletting is Sharada Kala (autumn season), but it can be done in emergencies at any time.

The quantity of blood to be expelled during the procedure should be.

Treatment Methodology and Jalaukavacharana Vidhi

The following are the steps involved in the procedure of Jalaukavacharana:

determined based on the patient's roga- rogibala (strength of the disease and patient).

According to Charaka, bloodletting should be performed until the Rakta (blood) becomes purified or shuddha. Sushruta and Vagbhata recommend different quantities of blood to be expelled, with Uttama Matra (highest quantity) being 1 Prastha, equivalent to 768 grams (1 tola = 12 grams), Madhyama Matra (moderate quantity) being $\frac{1}{2}$ Prastha, equivalent to 384 grams, and Adhama Matra (lowest quantity) being $\frac{1}{4}$ Prastha, equivalent to 192 grams.

Prior to the procedure, the leech is prepared by keeping it in turmeric water for a few minutes and then transferring it to fresh water to observe its active movements. The patient's affected body part is cleaned with normal water and wiped with cotton.

During the procedure, the leech is placed at the site of the wound to suck blood. If it does not start sucking, a small drop of honey is put there or a small wound is made with a surgical blade. A wet piece of cotton is placed over the leech to maintain moisture. Once the leech has finished sucking the impure blood, it detaches itself, and the patient may experience pain or itching. The leech is detached by sprinkling saindhava or turmeric powder at its mouth.

After the procedure, the leech is made to vomit by pouring turmeric powder over it. It is then washed in fresh water and stored in a clean vessel containing fresh water. The patient's wound is cleaned and dressed.

The Patients of varicose ulcer can be given Mahayograj Guggul 325mg 1 tab BD, Maharasnaadi Kwath 60 ml BD, Vishgarbh Tail for abhyang over non ulcerated part and Rasnasaptak kwath for Nadi Swedan.

DISCUSSION

According to statistical studies, recurrence of venous ulcers is common, ranging from 54 to 78%, especially after the 5th decade of life. Despite medical advances, managing varicose ulcers remains a difficult task for surgeons. In Ayurveda, varicose ulcers are related to Siragat Vatajanya vrana. Acharya Sushruta describes wound management scientifically and emphasizes the importance of bloodletting therapy, particularly leech therapy, even in infected wounds and abscesses.

The pathogenesis of varicose ulcers starts with venous valve dysfunction, causing venous hypertension and vein stretching. Weak veins allow blood proteins to leak into the extra vascular space, preventing the extra cellular matrix molecule and growth factor from reaching

the wound site and delaying the healing process. Leaking of fibrinogen and deficiency in fibrinolysin leads to fibrin build-up around the endothelium, which prevents oxygen and nutrients from reaching cells, causing ischemia around the wound and delaying healing. Venous insufficiency leads to the accumulation of leukocytes in micro vessels and releases inflammatory factors, resulting in the formation of chronic ulcers.

Acharya Susruta's Ayurvedic treatments for Siragat Vatajanya vrana include local oil massage, fomentation, and Raktamoksha with leech. Susruta has also specified the Shashthi upakramas for wound management, which can be practiced as per the wound's stage and necessity. The wounds over the lower limb delay in healing, and leech therapy is a unique and effective method of bloodletting indicated for females, children, old, and patients with a low threshold for pain. The leech sucks impure blood, which is useful in Pitta and Rakta diseases, such as various skin disorders and all types of inflammatory conditions.

Susruta samhita Chikitsasthana, chapters 12 and 16, advocates bloodletting by jalouka in all inflammatory, suppurative, and painful conditions of increased Pitta and Rakta condition to relieve pain and inhibit suppuration.

The use of leeches in medical therapy has been documented for centuries, and its effectiveness has been studied and proven in various medical conditions.

Leech saliva contains over a hundred pharmacologically active substances, including hirudin, hyaluronidase, vasodilators, anesthetics, antibacterial, fibrinases, and collagenase, among others. These substances are responsible for the analgesic, anti-inflammatory, and anesthetic effects of leech therapy, which has been shown to improve blood circulation and promote wound healing.

One of the main benefits of leech therapy is its peripheral vasodilator effects, which improve blood circulation and correct ischemia around the wound, thus promoting wound healing. Leech application also has anti-inflammatory action on nerves due to the presence of substances like B-dellins and Eglins in the saliva, which prevent leukocyte accumulation in the surrounding vessels and inhibit the release of inflammatory factors that can cause chronic wounds to heal. Receiving acetylsalicylic acid derivatives (aspirin) can help with the probable mechanism of action of leech therapy.

Leech therapy corrects venous hypertension and reduces vascular congestion due to the

presence of carboxypeptidase A inhibitors, histamine-like substances, and acetylcholine. This helps prevent venous valve dysfunction and extravascular fluid perfusion, which prevents the leakage of proteins and isolation of extracellular matrix molecules and growth factors, thus aiding in wound healing. After leech application, the expulsion of impure blood takes place, which removes local vitiated doshas (toxins and unwanted metabolites) and facilitates the supply of fresh blood, promoting wound healing by the formation of newer tissues.

Medicinal leech saliva contains hirudin, which inhibits blood coagulation by binding to thrombin. Calin inhibits blood coagulation by blocking the binding of von Willebrand factor to collagen, inhibiting collagen-mediated platelet aggregation. Interstitial viscosity is increased by Hirustatin, which inhibits Kallikrein, trypsin, chymotrypsin, neutrophilic cathepsin G Hyaluronidase.

Antibiotic Tryptase inhibitor inhibits proteolytic enzymes of host mast cells. Factor Xa inhibitor inhibits the activity of coagulation factor Xa by forming equimolar complexes. Complement inhibitors may possibly replace natural complement inhibitors if they are deficient Carboxypeptidase. A inhibitors increase the inflow of blood to the bite site. Histamine-like substances are vasodilators, which increase the inflow of blood at the bite site. Acetylcholine acts as a vasodilator and anesthetic substance.

Leech therapy is currently used in the treatment of thromboembolic diseases (coronary artery thrombosis and ischemic heart diseases), thrombophlebitis, hypertension, varicose ulcers, skin and musculoskeletal diseases, plastic surgery, replantation, and other reconstructive surgeries. The contemporary use of leech therapy was pioneered by surgeons M. Derganc and F. Zdravic, who developed leeches in tissue flap surgery, in which a flap of skin is freed or rotated from an adjacent body part to cover a defect part. Their rationality of the leeches was based on the unique property of creating a puncture wound that bleeds for hours.

Overall, leech therapy has proven to be an effective and safe medical intervention with numerous pharmacological benefits. It can improve blood circulation, correct ischemia, reduce inflammation, and aid in wound healing. The substances found in leech saliva have anticoagulant, analgesic, anti-inflammatory, and anesthetic effects, making them useful in varicose ulcers.

CONCLUSION

Varicose veins occur when the valves in the veins are not functioning properly, causing the veins to become dilated. This can lead to stasis, or the slowing down of blood flow, which can cause the blood to thicken and ultimately lead to ulceration. Because stasis is the main cause of varicose veins, treatment involves cleansing the blood to improve circulation. Ayurveda recommends using jaluka, or leech therapy, to remove thick, deep-seated blood.

Jalukavacharana, or leech therapy, is an effective and affordable treatment for varicose ulcers. It involves placing leeches on the affected area to suck out the thick blood and promote better circulation. This method has been shown to be successful in treating varicose veins and ulcers, and is widely accepted as a safe and reliable treatment option.

In summary, Ayurveda offers a promising approach to treating varicose veins and ulcers. By using jaluka, or leech therapy, to purify the blood and improve circulation, this traditional healing method can effectively alleviate the symptoms of varicose veins and promote healing.

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