


**LEECH APPLICATION IN VARICOSE ULCER: A SINGLE CASE STUDY**
**Dr. Deeksha Joshi<sup>1\*</sup>, Dr. Sunil Kumar Gupta<sup>2</sup>**
<sup>1</sup>M.S. Scholar, Dept. of Shalya Tantra, Uttarakhand Ayurved University, Gurukul Campus, Haridwar.

<sup>2</sup>Professor, Dept. of Shalya Tantra, Uttarakhand Ayurved University, Gurukul Campus, Haridwar.

**\*Corresponding Author: Dr. Deeksha Joshi**

M.S. Scholar, Dept. of Shalya Tantra, Uttarakhand Ayurved University, Gurukul Campus, Haridwar.

**DOI:** <https://doi.org/10.5281/zenodo.1859571>
**How to cite this Article:** Dr. Deeksha Joshi<sup>1\*</sup>, Dr. Sunil Kumar Gupta<sup>2</sup> (2026). Leech Application In Varicose Ulcer: A Single Case Study. European Journal of Pharmaceutical and Medical Research, 13(2), 402–406.

This work is licensed under Creative Commons Attribution 4.0 International license.



Article Received on 15/01/2026

Article Revised on 05/02/2026

Article Published on 10/02/2026

**ABSTRACT**

**Introduction:** Varicose ulcers (venous insufficiency ulcers) are wounds that occur due to improper functioning of venous valves.<sup>[1]</sup> 70% to 90% of leg ulcers are venous in origin.<sup>[2]</sup> Venous ulcers can be painful and typically form along the medial distal leg. If not treated properly, the ulcer may get infected leading to cellulites or gangrene and eventually lead to amputation of the limb. Ayurveda also mentioned about chronic ulcers (*Dustavrana*). In *Sushrut Samhita*, we get the most scientific description of wound and its management. He has given utmost importance to bloodletting and considered *jalaukavacharan* (leap application), as the most unique and effective method of bloodletting even in infected wounds and abscesses. If the conservative management like compression stocking, foot elevation, antibiotics and regular dressing of wound fail, then surgical treatment like skin grafting, sclerotherapy, laser ablation and other surgical correction were practiced. However, recurrence of venous ulcers is common, ranging from 54 to 78%. **Material and method:** A male patient 56 years old from jwalapur, Haridwar, Uttarakhand approached Shalya OPD of Gurukul Ayurvedic College and Hospital, Haridwar with the complain of an ulcer over the right lower leg with pain and swelling since 6 months. Pain was very intense and whole foot was swollen. He was suffering from varicose vein in both the legs since 2 years. On examination medial-posterior aspect of right ankle joint an ulcer was noticed. The ulcer was characteristically covered by unhealthy granulation tissue with slough, pus and foul smell. Color Doppler revealed few tortuous superficial venous channels in right lower limb in the medial and posterior aspect of below knee. Case was diagnosed as a chronic unhealed varicose ulcer. After proper investigation the patient was planned for *Jalaukavacharana* to evaluate the efficacy of *Jalaukavacharan*. Eight sittings of *Jalaukavacharna* after every seven days were performed along with oral medications and results were observed. **Observation and result:** The patient got relief in all symptoms including Pain, swelling, unhealthy granulation tissue with slough, pus and foul smell. **Conclusion:** Ayurvedic conservative management provides relief in symptoms as well as improves quality of life. *Jalaukavacharna* along with conservative management presents as a good alternative for patients seeking non-surgical options for management of varicose ulcer.

**KEYWORDS:** *Jaloukavacharana, Dustavrana, Sirajagranti, leech, chronic wound.*
**INTRODUCTION**

Varicose ulcers occur due to increased venous hydrostatic pressure. Generally, ulcers manifests on the medial side of leg i.e long saphenous varicosity and also occasionally on the lateral aspect i.e short saphenous varicosity. Ulcer generally were shallow and superficial, edge is sloping, never penetrates the deep fascia, floor is covered by pale granulation. Usually painless, unless effected by secondary infections or penetrates deep

causing peridotites tibia. The surrounding area of the ulcer is hyper pigmented (owing to stasis of blood), indurated and tender. When compared to men women are more often affected. Discomfort, pigmentation, eczema and tenderness of skin exist for years prior to ulceration. In Ayurveda Varicose vein can be compared with *Siragranthi*.<sup>[3]</sup> Over a period it may leads to *Dushtavrana* (chronic ulcer). According to Susruta Acharya, *dusthavranalakshan*: *Atisamvrita* – too Narrow

mouthed, *Ativivrita*- too wide mouthed, *Ati Kathina*- too Hard, *Ati Mridu*-too Soft, *Utsanna*-Elevated, *Avasanna*-Depressed, *Vedonavan*- Severe pain, *Ushna*-Hot, *Daha*- Burning sensation at the site, *Paka* – Suppuration, *Raga*-Redness, *Puyasravya* -Discharging pus, *Dusta* *Shonitasravi*- discharging vitiated blood, *Manojnadarshana*-With ugly sight, *Kandu*- Itching, *Shopha*- Swelling, *Pidaka* -With boils, *Mrudu*- Soft, *Bhairava*- Frightful, *Putinamsasirasnayu*- Full of pus, muscles, vessels, ligament.<sup>[4]</sup>

In all *Raktajavikara Raktamokshana* is a para-surgical procedure to expel out the vitiated blood. As per *Ayurveda*, *Rakthamokshana* is indicated in all diseases which are caused due to *Rakthadusti*. So, it is considered as a *Shodhana* procedure in *Raktajavikara*. *Sushrutha samhita* explains all the procedures of *Rakthamokshana* in detail.

*Jalaukavacharana* is the most delicate method of *Raktamokshana* and is prescribed for children, kings, wealthy person, women and delicate person.<sup>[5]</sup> It drains impure blood useful in *Pitta dushta Rakta* diseases, various skin disorders and all types of inflammatory conditions.<sup>[6]</sup>

Treatment procedures available in modern science have many drawbacks and do not provide complete relief to the patient. *Jalaukavacharana* provide very significant relief and is cheap, cost-effective treatment for varicose ulcer. It is considered to be the best due to its high efficacy and its safety.

#### PARTICULARS OF THE PATIENT –

Patient Name – XYZ      Religion - Hindu  
Sex – Male                      Marital status – Married  
Age – 56 years              Education – Graduate  
Occupation –              Socio-economic status – Middle class

#### CHIEF COMPLAINTS

- Prominent, dilated, tortuous vein in right lower limb in the medial and posterior aspect of below knee since 2 yrs
- Ulcer on the medial-posterior aspect of right ankle joint since 2 months
- Severe pain, swelling and discharge from an ulcer in the left lower leg at the medial malleolus for 2 months

#### HISTORY OF PRESENT ILLNESS

A 56 years old married male patient presents with the complaint of a non-healing ulcer, severe pain, and discharge from an ulcer in the right lower leg at the medial malleolus for 2 months. He was a diagnosed case of varicose veins since 1 year. He developed pain in the lower leg followed by a small wound near the medial malleolus which increased in size and did not heal despite topical treatment. He received treatments from various hospitals but had no improvement in the symptoms. Then he approached to OPD of Shalya

Tantra, Gurukul campus, Haridwar for further management. After thorough examination she was advised for *Jalaukavacharana*, after every 7 days for period of 2 months along with oral medications.

#### PAST HISTORY

N/H/O – HTN, DM II, Thyroid disorder.

#### TREATMENT HISTORY

- Conservative** – Patient took treatment of varicose vein
- Surgical history** – Cholecystectomy in 2017

#### FAMILY HISTORY

No such family history was noticed.

#### PERSONAL HISTORY

Diet – vegetarian  
Appetite – normal  
Sleep – sound  
Bowels – Normal (two times a day)  
Micturition – Normal (3-4 times/ day)  
Habits – Tea (2-3 cups/ day)  
Addiction – None

#### GENERAL EXAMINATION

- Patient was conscious and well oriented to person, place and time.
- Pallor, icterus – Not seen.
- Pulse rate – 82/min.
- Blood pressure – 114/70 mm/Hg.
- Temperature – 98.6 °F.
- Respiratory rate – 18/min.
- SPO<sub>2</sub> – 99% at room air.
- Height – 5 feet 4 inches.
- Weight – 74kg.

#### LOCAL EXAMINATION

- Inspection** - done in standing position.

Size and shape	4*5 cm
Number	1
Position	medial-posterior aspect of right ankle joint
Edge	Irregular slopping
Floor	Pale
Discharge	Serous discharge
Surrounding area	Blackish in color

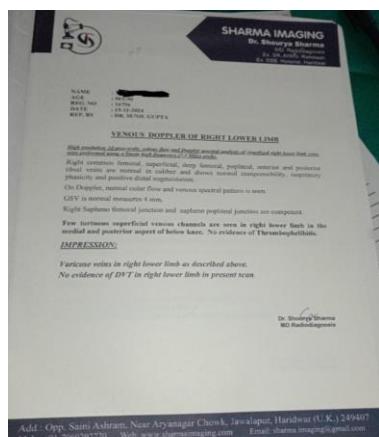
- Localized swelling, dilated and tortuous veins are seen below right knee joint at the posterior aspect.
- On medial-posterior aspect of right ankle joint an ulcer was noticed. The ulcer was characteristically covered by unhealthy granulation tissue with slough, pus and foul smell.

## 2. Palpation

Tenderness	Around the ulcer
Floor	Redish in color
Base	Adherent
Edge	Irregular slopping
Depth	1 mm
Bleed	No bleeding
Local heat	Increased
Loss of sensation	No
Dorsalis pedis artery	palpable

## INVESTIGATIONS

CBC, RBS, CT, BT, HIV 1 & 2, HCV, HbsAg and venous color doppler of lower limb were performed. CBC, RBS, CT, BT were within normal limits and all viral markers were non-reactive. Venous Color Doppler of lower limb reveals few tortuous superficial venous channels in right lower limb in the medial and posterior aspect of below knee.



Venous Doppler of Right lower limb



Arterial Doppler of Right lower limb

## DIAGNOSIS

Varicose vein with venous ulcer

## THERAPEUTIC INTERVENTIONS

### Internally

YOGENDRA RASA 1 OD

YOGRAJ GUGGULU 2 BD

PRABHAKAR VATI 2 BD

### Externally

*Jalaukavacharana* was performed on patient after every 7 days for two months. Follow-up was performed after 1 month.

## JALAUKAVACHARANA PROCEDURE

The whole procedure was performed in 3 stages.

**Poorvakarma** – After explaining complete procedure written consent was taken from patient. *Jalauka*

activated in turmeric water, after that leeches are transferred in another tray having clean water.<sup>[7]</sup>

**Pradhan karma** – 4 *Jalauka* were applied in the right lower leg at the medial malleolus. After 45 minutes *Jalaukas* were removed with the help of turmeric powder.<sup>[8]</sup> Proper bandage was applied at the site of leech application to prevent bleeding.

**Pashchat karma** – After establishing hemostasis, *Vaman* of *Jalaukas* were performed<sup>[9]</sup> and they were placed in container with label of patient's name and date. Patient was told to keep the leg in appropriate posture.

## OBSERVATION

Parameters of observation include discharge (Srava), peripheral hyper pigmentation, size of ulcer, granulation tissue and pain. Patient was observed on above parameters on every 15<sup>th</sup> day for 2 months and follow-up was performed after 1 month.

DAY	OBSERVATION
0 <sup>th</sup> day	Screening and assessment done
15 <sup>th</sup> day	<ul style="list-style-type: none"> <li>• VAS- 6/10 (VAS: Visual analog scale)</li> <li>• Wound unhealthy with pale look</li> <li>• Itching and discoloration +</li> </ul>
30 <sup>th</sup> day	<ul style="list-style-type: none"> <li>• VAS- 4/10</li> <li>• Wound unhealthy</li> <li>• Itching and discoloration +</li> </ul>
45 <sup>th</sup> day	<ul style="list-style-type: none"> <li>• VAS- 3/10</li> <li>• No Itching</li> <li>• Wound becomes healthy</li> <li>• Discoloration of the surrounding skin +</li> </ul>

60 <sup>th</sup> day	<ul style="list-style-type: none"> <li>Patient becomes asymptomatic</li> <li>• VAS- 0/10</li> <li>• No Itching</li> <li>• Wound becomes healthy with granulation</li> <li>• Improvement in discolouration of the surrounding skin +</li> </ul>
follow-up	<ul style="list-style-type: none"> <li>Patient was asymptomatic</li> <li>• Wound completely healed</li> <li>• No recurrence of symptoms</li> </ul>



Fig 1: Before Treatment.



Fig 2: During Treatment.



Fig 3: After Treatment.

## RESULT

After completion of treatment, significant relief was seen in symptoms like pain, itching, edema was reduced. Dilated and convoluted veins in calf and ankle shrank.

## DISCUSSION

After Leech application expulsion of impure blood takes place, due to which local vitiated Doshas (toxins & unwanted metabolites) are removed. Similarly, it facilitates more fresh blood supply & promotes wound healing by formation of newer tissues.<sup>[10]</sup> Due to improved blood circulation, skin discolouration is corrected and venous valvular dysfunction is also pacified. Thus, it breaks the pathogenesis of "varicosity" at cellular level and helps in wound healing.

*Sira* and *Snayu* are the *Updhatu* of *Rakta*, *Jalauka* acts as '*Raktaprasadniya*'. Hence, healthy newer tissues were formed along with strengthening of the blood vessels, thus corrects venous valvular dysfunction. Medicinal leech (*Hirudo medicinalis*) saliva contains hirudin, which inhibits blood coagulation by binding to thrombin. Medicinal leech therapy in producing venous

decongestion, reversal of oedema, hyper pigmentation and healing of varicose ulcers.

## PROBABLE MODE OF ACTION OF JALAUKAVACHARANA

*Jalaukavacharan* causes purification of blood by removing deeply seated toxins and pacifying vitiated *dosha*. Varicose Veins (*Siragranthi*) occur due to the vitiation of *Vata* and *Pitta Dosha* which further results in vitiation of *Rakta Dhatu*. *Sthansamshraya* of *Dosha* and *Dhatu* occur in *Raktavaha Sarotas*, then sign and symptoms of *Sirajgranthi* is seen. *Jalauka* application resulting in purification of *Rakta* (blood) by removing impure blood and *Dushita Dosha* from body. *Jalaukavacharana* also help in removing stagnant blood in *Siras* due to obstruction (causing *Vaivarna* /skin discolouration) and maintain proper blood flow which help in restoring natural skin color.

## CONCLUSION

*Jalukavacharana* is the right choice of *Sirajagranti Janya Vrana*. Leech therapy proves to be effective, time saving, affordable and acceptable treatment in varicose ulcer. We can roughly conclude that *Ayurveda* can give a

ray of hope in the treatment of varicose veins and varicose ulcer. After 60 days of Treatment the wound healed completely.

## REFERENCES

1. [https://en.wikipedia.org/wiki/Venous\\_ulcer](https://en.wikipedia.org/wiki/Venous_ulcer).
2. <https://www.hindawi.com/journals/ulcers/2013/413604/> by S. V. Agale, 2013, Volume 2013 (2013), Article ID 413604, 9 pages.
3. SusrutaSamhitha.prof.K.R Srikantha Murthy, Chaukambha Orientalia, Varanasi; nidhana sthana 11th chapter, sloka 8-9, pp533.
4. Susruta Samhitha. prof. K. R. Srikantha Murthy, Chaukambha Orientalia, Varanasi; sutra sthana sthana 22nd chapter, sloka 7, pp 166.
5. Sushruta Samhita Sutra Sthana 13/3, hindi commentary ayurveda Tattva sandipika written by Kaviraj Ambikadatta Shastri by Chaukambha Orientelia, Varanasi-221005.
6. Susruta Samhita, dr Ambikadutt Shastri, Nidanasthana 1<sup>st</sup> chapter sloka 27, pp 298.
7. Sushruta Samhita Sutra Sthana 13/19, hindi commentary ayurveda Tattva sandipika written by Kaviraj Ambikadatta Shastri by Chaukambha Orientelia, Varanasi-221005.
8. Sushruta Samhita Sutra Sthana 13/19-21, hindi commentary ayurveda Tattva sandipika written by Kaviraj Ambikadatta Shastri by Chaukambha Orientelia, Varanasi-221005.
9. Sushruta Samhita Sutra Sthana 13/22, hindi commentary ayurveda Tattva sandipika written by Kaviraj Ambikadatta Shastri by Chaukambha Orientelia, Varanasi-221005.
10. K.R Srikantha Murthy. Susruta Samhitha. Chaukambha Orientalia, Varanasi; sutrasthana 22nd chapter, sloka 7, pp166.