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Case Report

Leech Therapy

Efficacy of Jaloukavacharana (Leech Therapy) and Kasisadi Taila in the management of Venous Leg Ulcer - A Single Case Report

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Venous leg ulcers are common chronic wounds resulting from impaired venous return in the lower limbs. They often reduce quality of life due to pain, discharge, restricted mobility, and the risk of infection. Although conventional treatments such as medical therapy, wound dressing, and surgery are available, the recurrence rate remains high. Ayurveda offers promising alternatives, particularly Jaloukavacharana (leech therapy), which facilitates wound healing through the pharmacologically active constituents in leech saliva, including anticoagulants, vasodilators, and antimicrobial agents. Kasisadi Taila, an Ayurvedic medicated oil, is also traditionally used for its wound-cleansing and healing properties, although clinical documentation is limited. This case report presents a 48-year-old non-diabetic male with a chronic, non-healing ulcer on the right lower leg associated with varicose veins. The patient underwent Jaloukavacharana once weekly, followed by dressing with Kasisadi Taila. Internal medications included Pippali Churna (three gram twice daily before food with warm water) to enhance digestion and circulation, and Haritaki Churna (five gram at bedtime with warm water) to support bowel regularity. The ulcer showed progressive improvement, with complete healing observed after eleven weeks. This case suggests that the integrated use of Jaloukavacharana, Kasisadi Taila, and supportive Ayurvedic oral medications can be an effective and safe alternative in managing venous leg ulcers. The combination not only promoted wound healing but also prevented complications without any adverse effects. Further clinical studies are recommended to validate these findings on a larger scale.

Keywords: Ayurveda, Jaloukavacharana, Kasisadi Taila, Pippali Churna, Haritaki Churna, Venous leg ulcer

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Introduction

Venous leg ulcers (VLUs) are chronic ulcers caused due to improper venous circulation following improper functioning of valves of the lower limb which may be due to raised intravenous pressure secondary to deep vein thrombosis (DVT), obesity, injury, chronic constipation, and long-standing occupation. In recent guidelines, a VLU is defined as an open skin lesion of the leg or foot that occurs in an area affected by venous hypertension.**[1]**

They account between 60 and 80% of all leg ulcerations that occur in the presence of venous disease.**[2]** Healing rates are protracted with only 60% on average healed by 12 weeks, and once healed, 75% develop a recurrence within 3 weeks. **[3]**

Various management options for venous ulcers include medical management with micronized purified flavonoid fraction (MPFF), compression therapy (crepe bandaging or compression stockings) and minimally invasive procedures like sclerotherapy and LASER ablation techniques, surgical procedures like debridement are practiced. **[4,5]**

Leech therapy, or Hirudotherapy, is one of the oldest medical treatments, involving the application of specially bred medicinal leeches to affected areas. The leeches painlessly bite and draw 5–15 mL of blood while releasing therapeutic bioactive compounds such as hirudin, calin, hyaluronidase, and histamine-like substances into the patient's bloodstream. These compounds enhance microcirculation, reduce inflammation, relieve venous congestion, and promote wound healing.

In the management of venous leg ulcers (VLUs), leech therapy plays a significant role by addressing underlying venous stasis and supporting tissue regeneration, making it an effective adjunct in both traditional and integrative medical approaches. *Ayurvedic* principles of *Shashti Vrana Upakrama* (sixty therapeutic measures for wounds) are having great potential in the management of Venous Leg Ulcers. *Acharya Sushruta* has mentioned *Raktamokshana* (Blood-letting therapy) as one of the treatment regimens for *Vrana* (Ulcer). *Kasisadi Taila,* classically mentioned in *Arsha Chikitsa*, has shown promising wound-healing effects, though very limited studies exist on the same.**[6]**

Case Report

Patient information

A 46-year-old male presented to Shalya Tantra OPD with non-healing ulcer on anterior aspect of right lower leg, persisting for two months. Ulcer was associated with severe pain, burning sensation, & hyperpigmentation around lesion. Patient, labourer for 40 years, reported prolonged standing for over 10 hours daily. Over time, he developed dilated, tortuous veins in both legs with evening-related aching pain, itching & swelling, which he initially ignored. Four months prior, he noticed painful, itchy sore with redness on same leg that progressed to an ulcer within week. He sought allopathic treatment, including oral medications, regular dressings & compression stockings, but experienced no significant improvement. Ulcer size increased, & burning sensation worsened with compression stockings. There was no history of diabetes, trauma, or previous medical or surgical illness.

Clinical findings

General (*Ashtavidha Pariksha* and *Dashavidha Pariksha*) and systemic examination was done and was found within normal limits. Local examination of the ulcer was done and the findings are described in Table 1. The Haematological and Bio-chemical reports were done before and after the study.

Table 1: Local examination of the ulcer

1. Inspection	
Site	Anterior aspect of right lower leg in the Gaiter's area. Inverted champagne bottle appearance of the lower leg
Number	1
Shape	Irregular
Margins	Irregular
Edges	Inflamed and sloping
Floor	Completely covered with slough
Discharge	Yellowish-white in colour
Surrounding areas	Hyperpigmented
2. Palpation	
Size	6.5cm x 5.1cm
Margins	Firm
Base	Muscles
Tenderness	Present
Temperature	Present
Surrounding areas	Warm, hyperpigmented and thickened
Lymphadenopathy	Absent
Peripheral pulses	Present (Dorsalis Pedis, Anterior tibialis, Posterior Tibialis, Popliteal)
Peripheral sensation and joint position sensations	Present

Intervention Protocol

External Measures: *Jaloukavacharana* (Leech therapy) using 2 leeches once in a week followed by local application of *Kasisadi Taila* daily after cleaning the wound with Normal Saline.

Internal Measures: *Pippali* (*Piper longum*) *Churna* 3 gram two times a day before food with warm water and *Haritaki* (*Terminalia chebula*) *Churna* 5 gram at bedtime with warm water.

Pathya- Apathya

The patient was advised to practice foot elevation regularly and avoid prolonged standing.

Result

Table 2: Assessment criteria

Criteria	Grade 0	Grade 1	Grade 2	Grade 3	Grade 4
Pain	No pain	Very light, barely noticeable pain	Mild Pain which is discomforting	Very noticeable pain	Strong deep pain. Distressing to patient
Burning sensation	No burning	Little localized and sometime feeling of burning sensation	Moderate localized and sometime feeling of burning.	More localized and often burning which does not disturb sleep	Continuous burning disturbing sleep
Discharge	No discharge	The gauze is slightly moist	The gauze is completely wet after opening the bandage	The bandage moist completely after 24 hours, but no need to change	Bandage moist completely in 24 hours and changed
Floor	Smooth regular floor with granulation tissue	Smooth, regular floor, pale granulation tissue, slight discharge without slough	Smooth, irregular floor, less granulation tissue slight discharge with slough	Rough floor, no granulation tissue with more slough.	
Itching	No itching	Slight localized itching sensation	Moderate localized itching sensation	More, localized but not disturbing sleep	Continuous itching which disturbs sleep

Complete healing of the ulcer was achieved at the end of eleven weeks. Assessment of wound healing was done every 15 days. Progress of wound healing is shown in Figures 1 to 6. Assessment criteria and observations are given in Table 2 and 3 respectively. The Haematological and Bio-chemical reports done before and after the study are given in Table 4.

Table 3: Weekly assessment of wound

Criteria	Day 1	Day 15	Day 30	Day 45	Day 60	Day 75	Day 80
Pain	5	4	3	1	1	1	0
Burning sensation	4	3	3	2	0	0	0
Discharge	4	3	2	0	0	0	0
Floor	3	2	2	1	0	0	0
Itching	4	3	2	1	0	0	0
Size (in cm)	6.5x5.1	5x4.4	3.8x3	2.6x2	2x1.8	1x1.2	Completely epithelialized

Table 4: Haematological and Biochemical findings before and after the study

Parameter	Before treatment	After treatment
Haemoglobin	11.4 gram%	12.2 gram%
Total WBC	22950/cu mm	8200/cu mm
Platelet count	410000/cu mm	422000/cu mm
ESR	30mm	14mm
RBS	105 mg/dL	102 mg/dL
S. HIV, HbsAg, VDRL, HCV	Negative	Not done

Figure 1: Baseline image of the venous ulcer before starting therapy on Day 1

Figure 2: Wound after two sittings of Jaloukavacharana on Day 15

Figure 3: Progressive reduction in wound size on Day 30

Figure 4: Granulation tissue formation after six sittings of Jaloukavacharana on Day 45

Figure 5: Continued healing after eight sittings of Jaloukavacharana on Day 60

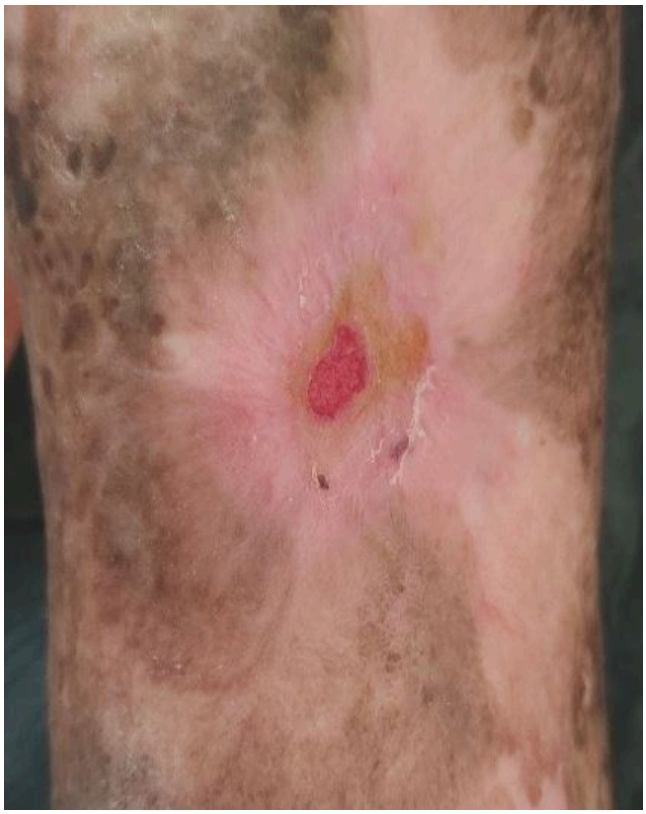

Figure 6: Near-complete closure by the tenth sitting of Jaloukavacharana on Day 75

Figure 7: Complete epithelialization on Day 80

Follow-up

Regular follow-up was done every month with no recurrence noted for 2 months.

Timeline of the study

Timeline of the case has been given in Table 5.

Table 5: Timeline of the study

Date(s)	Event
13-05-2021	Developed a small sore with pain, redness and itching in the anterior of right lower leg.
20-05-2021	Sore progressed to ulcer.
07-06-2021	Consulted physician – advised oral meds, regular dressing, compression stockings.
10-07-2021	Ulcer size increased with worsened symptoms.
14-09-2021	Reported to Shalya Tantra OPD with non-healing ulcer.
17-09-2021	Blood and biochemical investigations done.
18-09-2021	Jaloukavacharana once weekly + Kasisadi Taila dressing daily + oral medications adviced
20-09-2021 to 26-11-2021	10 weekly sittings of Jaloukavacharana (2 leeches/session) performed.
09-12-2021	Complete epithelialization of the ulcer observed.

Discussion

Normal healing of acute wounds usually proceeds through orderly and time-limited reparative processes (i.e., haemostasis, inflammation, granulation, and remodelling phases) that promote the restoration of the anatomical and functional integrity of the skin. On the contrary, chronic wounds (e.g., VLU) are usually arrested in a prolonged inflammatory phase, thus blocking progression toward the next phases and preventing wound closure.**[7]** Chronic VLUs provide a fertile breeding ground for the onset of several complications, ranging from immobility and reduced quality of life to cellulitis, severe infections, osteomyelitis, and neoplastic transformation.**[8]**

The probable mode of action of *Jaloukavacharana* as per *Ayurveda* texts is its capacity to remove *Rakta Dhatu* along with the vitiated *Doshas*. Although there are three *Sharira Doshas*, *Acharya Sushrutha* has considered *Rakta* as the fourth *Dosha*. When this *Rakta Dhatu* is expelled from the body, it carries the vitiated *Pitta* with itself and thus purifies the body by removal and further decreasing its quantum by compensatory production of healthy *Rakta Dhatu*, and promotes wound healing by formation of healthy newer tissues.**[9]**

Leech saliva contains over 20 bioactive compounds with anticoagulant, anti-inflammatory, antimicrobial, and fibrinolytic properties. Key agents like hirudin, calin, bdellins, and hyaluronidase enhance blood flow, reduce pain and inflammation, and promote tissue healing. These substances synergistically relieve venous congestion, improve microcirculation, prevent clot formation, and support effective wound healing in chronic venous leg ulcers.**[10]**

Most of the ingredients of *Kasisadi Taila* have the properties of *Vranashodhana* (cleansing and healing)*, Avasadana* (debridement)*, Pitta-Rakta Prasadana* (quality enhancing) which helped to improve local circulation as well helped in early epithelisation. *Shodhana* (cleansing) property helps to open the *Srothas* (channels), clear the *Khavaigunya* and clean the wound, ultimately leading to healing process. *Tila Taila* (*Sesamum indicum*) is the base of *Kasisadi Taila* and is known to have excellent wound healing activity.**[11]** The antioxidant properties of *Tila Taila* (*Sesamum indicum*) and *Karavira* (*Nerium indicum*), attributed to their phytochemicals like tannins, alkaloids, and terpenoids, help protect wound tissues from oxidative damage caused by free radicals.**[12]**

Also, the *Snigdha Guna* of *Tila Taila* helped to relieve pain by alleviating the deranged *Vata*. The *Ushna* (hot), *Tikshna* (sharp), and *Snigdha* (unctuous) properties of *Kasisadi Taila*, along with the *Lekhana* (scraping) action of *Kasisa* (Ferrous sulfate) and *Chitraka*, (*Plumbago zeylanica*) facilitate debridement, slough and pus removal, and promote healthy granulation tissue and neovascularization.

Pachana property of *Pippali Churna* (Powder of fruit of *Piper longum* Linn.) augmented the functions of *Jatharagni* (primary metabolism) and *Dhatvagni* (secondary metabolism) and might have corrected the abnormal *Rasadhatu* production and improved its function. Oxidative stress as a consequence of an imbalance in the prooxidant-antioxidant homeostasis in chronic wounds is thought to drive a deleterious sequence of events finally resulting in the nonhealing state.**[13]** It possesses anti-oxidant property that might have helped in tissue rejuvenation and promoted the physiological repair of cellular injury.**[14]** *Anulomana* effect of *Haritaki* (*Terminalia chebula* Retz) releases accumulated *Mala Sanchaya* from *Shakha* (extremities) *and Koshtha* (abdomen).

Antioxidant property of tannins reduces oxidative tissue mechanism in vascular channels by reducing concentration of deoxygenated blood in vessels and might have augmented oxygenated blood flow towards the wound.**[15]**

Conclusion

This case highlights the successful healing of a chronic Venous Leg Ulcer using a combination of *Jaloukavacharana, Kasisadi Taila*, and supportive oral medications. The treatment resulted in complete healing without complications by enhancing circulation, reducing inflammation, and supporting tissue repair. Further large-scale clinical studies are essential to validate efficacy and establish standardized treatment protocols in similar clinical conditions.

Declaration of patient consent

Authors certify that the case management was initiated after taking written informed consent from the patient for the therapeutic procedure as well as publication purpose. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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