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AYURVEDIC MANAGEMENT OF A CHRONIC VARICOSE ULCER USING LEECH THERAPY: A CASE REPORT

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ABSTRACT
Varicose ulcers are a debilitating complication of chronic venous insufficiency and account for nearly 70% of chronic lower-limb ulcers. High recurrence rates and delayed healing remain major challenges despite conventional management. In Ayurveda, varicose ulcers are correlated with dushta vrana*, for which* Jalauka Avacharana *(leech therapy) is advocated. A case report of a 52-year-old male with a chronic non-healing venous ulcer refractory to conventional treatment, which was successfully managed using leech therapy along with adjuvant ayurvedic wound care. Complete ulcer healing was achieved within 30 days without adverse events, highlighting the potential role of Ayurvedic interventions in chronic venous ulcers.*

KEYWORDS: Varicose ulcer, *dushta vrana*, *Jalauka avacharana*, *Vrana, Leech therapy*.

INTRODUCTION
Venous ulcer is defined as a full-thickness defect of skin, most frequently in the ankle region, that fails to heal spontaneously and is sustained by chronic venous disease, based on venous duplex ultrasound testing. Venous ulcers are wounds that are thought to occur due to improper functioning of venous valves, usually of the legs (hence leg ulcers) They are an important cause of chronic wounds. Venous ulcers develop mostly along the medial distal leg, and can be painful with negative effects on quality of life [1].

Several etiological factors contribute to their development, including sustained elevation of venous pressure due to deep vein thrombosis, prolonged standing, chronic constipation, and other conditions affecting venous circulation. Persistently increased venous pressure damages venous walls, causing dilatation, loss of elasticity, lipodermatosclerosis, and eventual ulcer formation. Duplex Doppler ultrasonography of the lower-limb venous system is the standard diagnostic tool for confirming venous insufficiency.

Conventional management includes conservative measures such as compression therapy, limb elevation, antimicrobial treatment, and routine wound care. When conservative therapy fails, surgical options like skin grafting, terminal interruption of reflux source (TIRS) using sclerotherapy, endovenous laser ablation, or surgical correction of superficial venous reflux may be required. Untreated varicose ulcers can lead to infection with pain, edema, erythema, purulent discharge, impaired mobility, and serious complications including osteomyelitis, septicemia, or malignant transformation. Despite advances in treatment, recurrence rates remain high, ranging from 54% to 78% within five years.

From an Ayurvedic perspective, varicose ulcers correspond to *dushta vrana*. Acharya Sushruta described a systematic approach to wound management, highlighting *Raktamokshana* (bloodletting) as a key therapy. Among its methods, *Jalauka Avacharana* (leech therapy) is considered especially effective for painful, infected, and non-healing ulcers. Leech therapy removes vitiated blood and is beneficial in *Pitta-dushta Rakta*, inflammatory disorders, skin diseases and chronic ulcers.

AIM – To Study and evaluate the efficacy of Leech therapy in the management of Venous ulcer.
Case - A 52 year old male patient came to opd of *panchkarma* department on 11th of sept 2024 with complaint of , non healing wound in left lower leg , with itching pain and discomfort while walking. Patient had no history of any major illness like HTN , DM etc. Being a vegetable vendor patient had a history of standing for a long duration. On examination in opd, the dressing of lower leg was completely soak with mild foul smell. After removing the dressing in opd, wound was examined and diagnosed as *dushta vrana* from *ayurvedic* perspective.

A patient was fine 4 months ago, then after experiencing above symptoms patient visited near by general physician, took allopathic medicines like antibiotics , NSAIDS etc along with wound management with betadine dressing , but patient did not responded to these therapies instead he developed allergic reaction to antibiotics and wound started getting worse. The patient was referred to our hospital by one of his relative. The patient was explained about the need of getting admitted and start with ayurvedic wound management and jaloka avacharan. After patient consent he was admitted under department of *panchkarma* for further management.

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Clinical Findings

Local examination revealed a 2-cm pitted ulcer above the left medial malleolus with inflamed margins, multiple smaller adjacent ulcers, diffuse edema, erythema, exfoliating skin, serous discharge, induration, and painful limb movements. The wound was diagnosed as *Dushta Vrana* from an Ayurvedic perspective.

- Astavidhpariksha

1. Nadi- 74/min
2. Mala- samyak
3. Mutra- samyak
4. Jivha- saam
5. Shabda-prakrut
6. Sparsha- ruksha
7. Druk - prakrut
8. Akruti- madhyam

Diagnostic Assessment

Laboratory investigations showed normal hemoglobin, leukocyte count and blood glucose levels. Venous Doppler study revealed mild subcutaneous edema suggestive of venous insufficiency. X-ray of the left leg was normal.

Therapeutic Intervention

TABLE 1 Procedure

Sr no.	Procedure	Duration
1	Jalauka avacharan (leech therapy)	Twice a week
2	Triphala kwath dhawan	Daily once
3	Jatyadi taila pichu dressing	Daily once

TABLE 2 Shaman chikitsa

Sr.no	Medicine	Duration	Dose	Time
1	Arogyavardhini vati	From day 1 to day 14 of treatment	500mg	TDS after meal
2	Gandhak rasayan		500mg	TDS after meal
3	Triphala guggula		500mg	TDS after meal
4	Sukshma Triphala	From Day 15 to Day 30 of treatment	250mg	TDS after meal
5	Hingvastak churna		3gm	TDS with meal
6	Gandharva haritaki		5gm	Before bed time
7	Combination of Nimba saal , Manjista, Sariva, yastimadhu churna	From Day 1 to day 30 of treatment	2 gms (0.5gm each)	TDS after meal

MATERIAL AND METHODS

Local wound care

The wound was first washed with Triphala Kwath, followed by cleaning with a sterile gauze piece and gentle removal of devitalized tissue. The wound area was then wiped with a sterile dry gauze piece. A sterile gauze was soaked in Jatyadi oil using a sterilized vessel and applied to cover the entire wound along with the surrounding area. The dressing was finally secured with a roller bandage.

Leech Sittings are as follows

1. **11/09/24**
2. **13/09/24**
3. **16/09/24**
4. **21/09/24**
5. **26/09/24**
6. **01/10/24**
7. **05/10/24**
8. **10/10/24**

Follow-up and Outcomes

Progressive reduction in pain, edema, discharge, and inflammation was observed. Healthy granulation tissue developed, followed by complete epithelialization. Full ulcer healing occurred within 30 days. No complications such as bleeding, infection, or hypersensitivity were noted.

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OBSERVATION and ASSESSMENT BY BWAT [2]

Item	Assessment
1. Size	1 = Length x width =4 sq cm 2 = Length x width 4-=<16 sq cm 3 = Length x width 16.1-=<36 sq cm 4 = Length x width 36.1-=<80 sq cm 5 = Length x width >80 sq cm
2. Depth	1 = Non-blanchable erythema on intact skin 2 = Partial thickness skin loss involving epidermis &/or dermis 3 = Full thickness skin loss involving damage or necrosis of subcutaneous tissue; may extend down to but not through underlying fascia; &/or mixed partial & full thickness &/or tissue layers obscured by granulation tissue 4 = Obscured by necrosis 5 = Full thickness skin loss with extensive destruction, tissue necrosis or damage to muscle, bone or supporting structures
3. Edges	1 = Indistinct, diffuse, none clearly visible 2 = Distinct, outline clearly visible, attached, even with wound base 3 = Well-defined, not attached to wound base 4 = Well-defined, not attached to base, rolled under, thickened 5 = Well-defined, fibrotic, scarred or hyperkeratotic
4. Under-mining	1 = None present 2 =Undermining < 2 cm in any area 3 = Undermining 2-4 cm involving < 50% wound margins 4 = Undermining 2-4 cm involving > 50% wound margins 5 = Undermining > 4 cm or Tunneling in any area
5. Necrotic Tissue Type	1 = None visible 2 = White/grey non-viable tissue &/or non-adherent yellow slough 3 = Loosely adherent yellow slough 4 = Adherent, soft, black eschar 5 = Firmly adherent, hard, black eschar
6. Necrotic Tissue Amount	1 = None visible 2 = < 25% of wound bed covered 3 = 25% to 50% of wound covered 4 = > 50% and < 75% of wound covered 5 = 75% to 100% of wound covered
7. Exudate Type	1 = None 2 = Bloody 3 = Serosanguineous: thin, watery, pale red/pink 4 = Serous: thin, watery, clear 5 = Purulent: thin or thick, opaque, tan/yellow, with or without odor
8. Exudate Amount	1 = None, dry wound 2 = Scant, wound moist but no observable exudate 3 = Small 4 = Moderate 5 = Large
9. Skin Color Sur-rounding Wound	1 = Pink or normal for ethnic group 2 = Bright red &/or blanches to touch 3 = White or grey pallor or hypopigmented 4 = Dark red or purple &/or non-blanchable 5 = Black or hyperpigmented
10. Peripheral Tissue Edema	1 = No swelling or edema 2 = Non-pitting edema extends <4 cm around wound 3 = Non-pitting edema extends ≥4 cm around wound 4 = Pitting edema extends < 4 cm around wound 5 = Crepitus and/or pitting edema extends ≥4 cm around wound
11. Peripheral Tissue Induration	1 = None present 2 = Induration, < 2 cm around wound 3 = Induration 2-4 cm extending < 50% around wound 4 = Induration 2-4 cm extending ≥ 50% around wound 5 = Induration > 4 cm in any area around wound
12. Granu-lation Tissue	1 = Skin intact or partial thickness wound 2 = Bright, beefy red; 75% to 100% of wound filled &/or tissue overgrowth 3 = Bright, beefy red; < 75% & > 25% of wound filled 4 = Pink, &/or dull, dusky red &/or fills ≤ 25% of wound 5 = No granulation tissue present
13. Epithe-lializa-tion	1 = 100% wound covered, surface intact 2 = 75% to <100% wound covered &/or epithelial tissue extends >0.5cm into wound bed 3 = 50% to <75% wound covered &/or epithelial tissue extends to <0.5cm into wound bed 4 = 25% to < 50% wound covered 5 = < 25% wound covered

(BATES-JENSEN WOUND ASSESSMENT TOOL)

	Item for Assessment	Day 0	Day 10	Day 20	Day 30
1.	Size	2	2	2	1
2.	Depth	3	3	2	1
3.	Edges	4	3	2	1
4.	Under-mining	1	1	1	1
5.	Necrotic Tissue Type	3	2	1	1
6.	Necrotic Tissue Amount	2	1	1	1
7.	Exudate Type	4	3	1	1
8.	Exudate Amount	3	2	2	1
9.	Skin Color Surrounding Wound	4	3	2	1
10.	Peripheral Tissue Edema	2	1	1	1
11.	Peripheral Tissue Induration	2	1	1	1
12.	Granulation Tissue	4	3	2	1
13.	Epithelialization	3	3	2	1
TOTAL SCORE		**37**	**28**	**20**	**13**

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Figure 1 – Day 0

Figure 2 – Application of Leech

Figure 3 – Triphala Kwath Pichu

Figure 4 – Bandaging & Dressing

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Figure 5 - Day 14

Figure 6 – Leech application

Figure 7 – Day 21

Figure 8 – Day 30

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DISCUSSION

Leech therapy may facilitate healing by reducing venous congestion, improving microcirculation, correcting periwound ischemia, and exerting anti-inflammatory effects through bioactive salivary constituents of leech. From an Ayurvedic perspective, *Raktamokshana* removes vitiated *Doshas*, while adjuvant therapies like triphala kwath dhavan and pressure bandaging promotes *Vrana Shodhana* and *Ropana*. This integrative approach addresses both local pathology and systemic factors contributing to delayed healing.

Probable Mechanism of Action of Leech Therapy

Leech therapy (*Jalauka Avacharana*) may aid wound healing by reducing venous hypertension and vascular congestion. Bioactive constituents in leech saliva, such as carboxypeptidase A inhibitors, histamine-like substances and acetylcholine which promotes vasodilation and improve venous drainage, thereby decreasing extravascular fluid accumulation[3]. This limits protein leakage and preserves extracellular matrix components and growth factors essential for tissue repair.

Additionally, leech saliva contains vasodilatory substances that enhance local blood circulation and correct periwound ischemia, facilitating wound healing. Anti-inflammatory effects are mediated by compounds such as bdellins and eglins, which inhibit leukocyte accumulation and suppress the release of inflammatory mediators, preventing chronic inflammation and promoting ulcer resolution [4]

Leech therapy facilitates expulsion of vitiated blood, leading to elimination of locally aggravated *Doshas* (toxins and unwanted metabolites). This process enhances fresh blood circulation and promotes wound healing through the formation of healthy granulation tissue.

Integrated Effect

This regimen acts synergistically with *Jalauka Avacharana* and topical wound care, addressing systemic and local factors to accelerate healing, reduce inflammation, restore vascular function, and promote complete ulcer resolution.

However, multi centric comparative clinical trials with valvular assessment are required to substantiate the role of leech therapy in the management of varicose ulcers.

CONCLUSION

This case demonstrates that *Jalauka Avacharana* combined with adjuvant Ayurvedic wound care can achieve rapid and complete healing of chronic varicose ulcers without adverse effects. While promising, larger multicentric controlled studies with objective venous assessments are required to validate these findings and establish standardized treatment protocols.

Figure 9 : After 15 months (No recurrence)

Patient's Perspective

I was suffering from this oozing, edematous and irritating wound since past 4 -5 months. Being a vegetable vendor I have a long standing job. I was unable to carry out my day to day activities. I took many medications from painkiller to antibiotics, but nothing worked for me. Then I went to one Ayurvedic Hospital and got admitted over there for my condition. I was surprised to see notice that there was minimum oozing from the wound within couple of days of admission. I found dhavan,dressing and Jalauka/ leech therapy very beneficial for my chronic wound. It took me nearly 3 week to get 90% relief then I was discharged and called for follow up. Condition of the wound improved very well even after

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leech therapy was stopped and now I can continue with my daily routine with some basic precautions to avoid recurrence as advised by my Doctor.

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