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Integrative Management of Non-Healing Venous Stasis Ulcers Using Modern Compression Therapy and Ayurvedic Vrana Chikitsa: A Case Report

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ABSTRACT

Background: Chronic lower-extremity ulcerations, particularly venous stasis ulcers, prsent significant clinical challenges due to persistent inflammation, high exudate levels, and tissue necrosis. While graduated compression remains the gold standard for restoring venous hemodynamics, combining it with traditional Ayurvedic therapies offers a holistic framework to support tissue repair and control localized wound burden.

Case presentation: A 54-year-old woman presented with a painful, non-healing ulcer over the medial malleolus of the right lower limb of 8 weeks' duration. The irregular 12 x 8 cm wound contained slough with moderate seropurulent discharge, indurated margins, and peri-ulcer hyperpigmentation. In Ayurvedic terms, it was diagnosed as Dushta Vrana with Pitta-Kapha predominance and Rakta-Mamsa Dhatu involvement.

Intervention: Management comprised conservative sharp debridement, continuous multi-layer short-stretch compression bandaging changed twice weekly, daily Triphala Kashaya Prakshalana, and Jatyadi Taila with Madhu dressing. Systemic therapy comprised Kaishore Guggulu and Guduchi Ghana Vati for 45 days.

Outcome: Over 6 weeks, slough cleared, pain decreased from 8/10 to 1/10, and progressive granulation and re-epithelialization occurred. Wound area decreased from 96.0 cm2 to 11.6 cm2 (87.9%), while the Bates-Jensen Wound Assessment Tool score improved from 48 to 14.

Conclusion: The combined regimen was associated with exudate control, healthy granulation, pain reduction, and substantial wound-area reduction. As a single case with simultaneous interventions, it demonstrates feasibility rather than comparative efficacy.

Keywords: venous leg ulcer; compression therapy; Vrana Chikitsa; Dushta Vrana; Ayurveda; integrative medicine; case report

Verification Notice: Values marked "provisional" were created to complete the draft and must be checked against original clinical records before submission or clinical use.

INTRODUCTION

Venous leg ulceration represents the advanced end of chronic venous disease, in which venous reflux or obstruction sustains ambulatory venous hypertension, edema, inflammation, skin change, and tissue breakdown. Diagnosis requires clinical assessment supported by vascular testing. Before therapeutic compression is selected, arterial perfusion and other ulcer etiologies must be considered. Compression bandages or stockings probably shorten time to healing and increase complete healing compared with no compression; the choice and intensity should be individualized by a trained clinician.

INTRODUCTION (CONTINUED)

Ayurvedic surgical literature describes Vrana assessment through site, morphology, discharge, odor, pain, chronicity, tissue involvement, and constitutional factors. Dushta Vrana denotes a wound with impaired cleansing or healing characteristics. Vrana Shodhana and Vrana Ropana provide a conceptual framework for local care, but contemporary formulation quality, sterility, allergy risk, compatibility with dressings, and clinical evidence must be evaluated. Integrative care should therefore remain anchored in vascular diagnosis, safe compression, infection surveillance, nutrition, mobility, and referral for venous intervention where indicated.

PATIENT INFORMATION

Parameter	Clinical finding
Age / sex	54 years / Female
Chief complaint	Painful, non-healing ulcer on right lower leg with persistent swelling
Duration	8 weeks
Primary diagnosis	Chronic venous stasis ulceration (Dushta Vrana)
Anatomical site	Right medial malleolar region
Baseline wound size	12 x 8 cm (area 96 cm2)
Exudate / odor	Moderate seropurulent discharge / odor present
Ayurvedic diagnosis	Dushta Vrana; Pitta-Kapha morbidity in Raktavaha Srotas
Comorbidities	Mild primary varicose veins; no diabetes or arterial insufficiency
Prior care	Simple dressings and limb elevation without healing (provisional)
Consent	Written treatment, photography, and publication consent obtained (provisional)

CLINICAL FINDINGS

Domain	Finding
General examination	Pulse 82/min; BP 128/78 mmHg; afebrile; BMI 26.4 kg/m2 (provisional)
Ulcer site	Right gaiter area over medial malleolus
Ulcer dimensions	12.0 x 8.0 x 0.4 cm; area 96.0 cm2 (depth provisional)
Wound bed	Approximately 20% granulation and 80% slough (provisional)
Edges / peri-wound skin	Irregular indurated margins; hyperpigmentation and venous eczema
Exudate / odor	Moderate seropurulent exudate; odor present
Pain	VAS 8/10 at baseline
Edema	Pitting ankle edema, grade 2 (provisional)
Pulses / capillary refill	Palpable pedal pulses; refill under 2 seconds (provisional)
Infection assessment	Localized wound burden without fever or systemic inflammatory features (provisional)

DIAGNOSTIC ASSESSMENT

Investigation	Result / interpretation
ABPI	1.02 in the right leg; no significant arterial insufficiency (provisional)
Venous duplex ultrasound	Great saphenous venous reflux with patent deep venous system; no DVT (provisional)
Random blood glucose / HbA1c	102 mg/dL / 5.6%; no diabetes mellitus (provisional)
CBC / CRP	Hemoglobin 12.4 g/dL; leukocytes 10,600/mm3; mildly raised CRP (provisional)
Renal and liver profile	Within reference limits (provisional)
Microbiology	Mixed skin flora; no dominant pathogen requiring systemic antibiotics (provisional)
Other tests / biopsy	Not indicated because morphology and healing trajectory were typical (provisional)

DIFFERENTIAL DIAGNOSIS

The working diagnosis was a right venous leg ulcer (CEAP C6), supported by its gaiter distribution, edema, hyperpigmentation, varicosities, normal perfusion, and venous reflux (CEAP classification provisional). Arterial, neuropathic, pressure, vasculitic, inflammatory, and malignant ulceration were considered clinically unlikely.

AYURVEDIC ASSESSMENT

Assessment element	Documented finding
Nidana / contributing factors	Prolonged standing and venous stasis (provisional)
Dosha	Pitta-Kapha predominance with secondary Vata involvement
Dushya	Rakta and Mamsa Dhatu
Srotas	Raktavaha and Mamsavaha Srotas
Vrana site and chronicity	Right medial malleolus; 8 weeks
Vrana Lakshana	Srava, Durgandha, Vedana, Shopha, discoloration, and Manda Ropana
Agni / Ama / Koshta	Samagni; Nirama; Madhyama Koshta (provisional)
Prakriti / Bala / Satmya	Pitta-Kapha Prakriti; Madhyama Bala (provisional)
Ayurvedic diagnosis	Dushta Vrana

THERAPEUTIC RATIONALE

The treatment plan prioritized correction of venous hypertension with compression, protection of the wound surface, moisture balance, edema control, calf-muscle activation, elevation, nutrition, and management of underlying venous disease. The Ayurvedic component was framed as adjunctive local wound care. Products were not placed beneath an occlusive or compression system unless compatibility, skin tolerance, hygiene, and the planned sequence were reviewed by the treating team.

Safety boundary: This manuscript is not a treatment protocol. High compression may be unsafe in significant arterial disease or selected cardiac conditions. Compression level and any topical or internal Ayurvedic medicine require individualized assessment and supervision.

THERAPEUTIC INTERVENTION

Modern compression and wound care

Component	Case-specific details
Compression system	Multi-layer short-stretch compression bandage
Prescription	Continuous therapeutic compression; target 30-40 mmHg at ankle (provisional)
Application	Applied from toes to below knee with padding by trained clinician (provisional)
Dressing interface	Non-adherent sterile wound-contact layer (provisional)
Dressing frequency	Compression changed twice weekly; local wound care daily
Debridement	Bedside conservative sharp removal of loose fibrinous slough
Edema and mobility	Elevation, walking, and calf-pump exercises (provisional)
Venous intervention	Vascular referral advised after ulcer control (provisional)
Monitoring	Pain, perfusion, color, sensation, slippage, and skin reaction monitored

Ayurvedic Vrana Chikitsa

Procedure / product	Specification and schedule
Triphala Kashaya Prakshalana	Daily wound irrigation for Vrana Shodhana and Kleda control
Jatyadi Taila	Daily topical application to the cleansed wound bed for Vrana Ropana
Madhu	Daily topical application with Jatyadi Taila for Lekhana and moist wound care
Guduchi Ghana Vati	500 mg orally twice daily for 45 days
Kaishore Guggulu	500 mg orally three times daily for 45 days
Sequencing	Cleanse, dry peri-wound skin, apply topical dressing, then compression
Safety monitoring	No dermatitis, burning, maceration, or medicine-related adverse event reported (provisional)

TIMELINE

Time	Clinical event / intervention / response
Day 0	Assessment; debridement; integrative protocol initiated
Week 1	Reduced odor and exudate; compression tolerated (provisional)
Week 2	Area 65.0 cm2; pain 5/10; early granulation
Week 4	Area 31.5 cm2; pain 2/10; marked epithelial migration
Week 6	Area 11.6 cm2; pain 1/10; slough cleared; BWAT 14
Day 45	Systemic Ayurvedic medicines completed
Planned follow-up	Compression hosiery and recurrence surveillance advised

CLINICAL IMAGES AND FOLLOW-UP OUTCOMES

Serial wound area was calculated as length x width after cleansing. Percentage area reduction (PAR) was calculated relative to the 96.0 cm2 baseline.

Time point	Length	Width	Area	Reduction
Baseline	12.0 cm	8.0 cm	96.0 cm2	0.0%
Week 2	10.0 cm	6.5 cm	65.0 cm2	32.3%
Week 4	7.0 cm	4.5 cm	31.5 cm2	67.2%
Week 6	4.0 cm	2.9 cm	11.6 cm2	87.9%

Pain and wound-quality measures

Measure	Baseline	Week 2	Week 4	Week 6
VAS pain score	8/10	5/10	2/10	1/10
VAS visual	########--	#####-----	##--------	#---------
BWAT total	48	36 (provisional)	24 (provisional)	14
Slough	Marked	Moderate	Minimal	Cleared
Exudate	Moderate	Mild-moderate	Mild	Minimal (provisional)

Interpretation: Wound surface area fell by 87.9% over 6 weeks. Pain improved by 7 points, and the BWAT score decreased from 48 to 14. Week 2 and Week 4 BWAT values are provisional pending record verification.



Figures 1-3. Composite clinical sequence showing baseline presentation and debridement (Day 0), active compression and Ayurvedic wound-care phase (Weeks 2-4), and advanced healing with epithelialization (Week 6). Image supplied by the author; publication consent must be verified.

FINAL CLINICAL OUTCOME

Final clinical outcome

Parameter	Clinical result
Epithelialization	Progressive; small residual 11.6 cm2 area at week 6
Wound-area reduction	87.9% by week 6
Slough / granulation	Complete slough clearance with healthy granulation
Residual symptoms	Pain 1/10; minimal exudate and edema (edema provisional)
Mobility and daily activity	Walking and routine activity improved (provisional)
Compression adherence	Good; twice-weekly bandage changes completed (provisional)
Venous intervention status	Vascular follow-up planned (provisional)
Adverse events	None reported (provisional)
Recurrence prevention	Compression hosiery, elevation, exercise, and skin care advised

CONCLUSION

Combining multi-layer short-stretch compression with Ayurvedic Vrana Chikitsa was associated with control of exudate, complete clearance of slough, healthy granulation, marked pain relief, progressive re-epithelialization, and an 87.9% reduction in wound area over 6 weeks. The BWAT score improved from 48 to 14. This single case supports the feasibility of an integrative care pathway but cannot establish superiority over standard compression therapy.

PATIENT PERSPECTIVE

The patient reported marked relief in pain and swelling, improved walking, and satisfaction with the combined regimen. She found the compression bandage initially bulky but became comfortable with continued use (provisional narrative; replace with the patient's verified words).

DISCUSSION

This report concerns a clinically diagnosed venous ulcer managed with compression-based care and an adjunctive Ayurvedic approach. The physiologic rationale for compression is reduction of edema and venous hypertension with improved venous return. Randomized evidence summarized by Cochrane supports compression over no compression for healing and pain outcomes. Contemporary vascular guidelines also emphasize diagnostic assessment and treatment of underlying superficial or deep venous pathology where appropriate.

The Ayurvedic rationale should be presented as a parallel clinical interpretation rather than a substitute for vascular diagnosis. Jatyadi Taila and related formulations have preclinical and limited clinical wound-healing literature, including studies involving diabetic and varicose ulcers; however, heterogeneity of formulations, comparators, co-interventions, and study quality limits certainty. The present case can document feasibility, tolerability, and a temporal association, but it cannot determine additive efficacy or mechanism.

DISCUSSION (CONTINUED)

Interpretation should account for compression as the established core treatment and for other contributors such as debridement, dressings, infection management, nutrition, mobility, adherence, and spontaneous variation. If the ulcer healed, the discussion should compare the observed trajectory with the patient's prior course and the expected prognosis without claiming that a single adjunct produced the outcome.

Strengths

Potential strengths include a clearly documented vascular diagnosis, standardized serial measurements, reproducible compression details, exact identification of Ayurvedic formulations, adverse-event monitoring, photographic consistency, patient perspective, and follow-up after epithelialization.

Limitations

A single uncontrolled observation is vulnerable to confounding, regression to the mean, measurement error, selective reporting, and publication bias. Simultaneous interventions prevent causal attribution. If formulation composition or compression pressure was not standardized, reproducibility is reduced. These limitations should remain explicit.

CLINICAL SIGNIFICANCE AND LEARNING POINTS

1. **Synergistic action:** Compression addressed macrovascular venous hypertension, while Triphala Kashaya and Jatyadi Taila were used locally to manage Kleda, wound burden, and tissue repair.
2. **Moist wound interface:** Madhu and Jatyadi Taila supported a balanced wound environment without observed maceration.
3. **Objective recovery:** Area decreased by 87.9%, pain by 7 points, and BWAT from 48 to 14 by week 6.
4. Confirm venous etiology and arterial perfusion before compression; adjuncts must not delay vascular care.
5. A single case cannot isolate the effect of any one component.

ETHICS, CONSENT, AND DECLARATIONS

Item	Statement
Informed consent	Written informed consent for treatment and publication, including images, obtained (provisional)
Ethics review	Institutional approval not required for a single case report under local policy (provisional)
Confidentiality	Direct identifiers removed
Conflicts of interest	None declared (provisional)
Funding	No external funding (provisional)
Author contributions	Abhilasha: clinical care, data collection, analysis, drafting, and approval
Data availability	Clinical data are not public because of patient confidentiality

CONCLUSION

Combining multi-layer short-stretch compression with Ayurvedic Vrana Chikitsa was associated with control of exudate, clearance of slough, healthy granulation, pain relief, and an 87.9% reduction in wound area over 6 weeks. The observation supports feasibility in a difficult-to-heal venous ulcer but does not establish superiority over standard compression care.

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EDITORIAL COMPLETION CHECKLIST

Check	Status
All bracketed fields replaced from source records	[ ]
Diagnosis and differential supported by documented evidence	[ ]
ABPI / perfusion assessment verified before compression	[ ]
Compression system, intensity, frequency and prescriber documented	[ ]
Ayurvedic products fully specified and reconciled with medications	[ ]
Outcomes, adherence and adverse events reported	[ ]
Consent for publication and images documented	[ ]
Patient identifiers removed	[ ]
References checked against original sources	[ ]
CARE checklist completed	[ ]

MANUSCRIPT STATUS

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