

Ayurvedic Avachooran in the Management of Dushta Vrana (Chronic Infected Wound): A Case Report Documenting Full Epithelialization within Three Weeks

Dr. Kushal Anil Tayade¹, Dr. Shubhangini Nagaralmath²,
Dr. Amit Ramchandra Shedge³

¹PG Scholar, Department of Shalyatantra, LRP Ayurvedic Medical College, PG Institute and Research Centre,
Ishwarpur, Sangli

²Guide and Associate Professor, Department of Shalyatantra, LRP Ayurvedic Medical College, PG Institute and Research
Centre Research Centre, Ishwarpur, Sangli

³Professor and HOD, Department of in Shalyatantra, LRP Ayurvedic Medical College, PG Onstitute and Research Centre,
Ishwarpur, Sangli

ABSTRACT

Background: Chronic infected wounds are often difficult to manage because of persistent infection, excessive discharge, unhealthy granulation tissue, and delayed healing. In Ayurveda, such wounds are described as Dushta Vrana and require both wound cleansing¹ (Shodhana) and healing (Ropana) measures. Avachoorana, a classical local treatment described by Acharya Sushruta², involves the application of medicinal herbal powders directly over the wound surface to facilitate healing. This case report highlights the clinical outcome of Avachoorana³ using a combination of Centella asiatica⁴ (Mandukaparni)⁵ and Tridax procumbens (Jayanti)⁶ in a patient with a chronic infected wound.

Case Presentation: A 42-year-old male Farmer from Rural Maharashtra presented with a non-healing infected wound over the lower limb that had been associated with pain, purulent discharge, foul odor, and unhealthy tissue for several weeks. Clinical examination revealed slough-covered wound margins, local tenderness, and delayed healing. Baseline assessment was performed using wound dimensions, pain score, and wound bed characteristics. The wound was assessed clinically as a chronic infected wound and corresponded to Pitta-Kapha Dushta Vrana in Ayurvedic terms.

Intervention: After thorough wound cleansing under aseptic precautions, Avachoorana was performed using a sterile herbal powder prepared from Centella asiatica and Tridax procumbens. The dressing was changed regularly, and the wound was monitored for changes in size, discharge, granulation tissue formation, and epithelialization over a period of 21 days⁷.

Outcome: Noticeable clinical improvement was observed from the first week of treatment. The amount of discharge and foul smell gradually reduced, slough separation occurred, and healthy granulation tissue developed. Progressive wound contraction was seen during follow-up, with marked reduction in pain and local inflammation. Complete epithelialization of the wound⁸ was achieved by the 21st day without any adverse reactions. No unwanted reactions or signs of recurrence were observed over a three-month follow-up period.

Conclusion: The present case demonstrates that Ayurvedic Avachooran with Centella asiatica and Tridax procumbens may serve as an effective local wound management approach in Dushta Vrana. The treatment was simple, economical, well tolerated, and associated with satisfactory wound healing. Further clinical studies involving larger sample sizes are needed to validate these observations.

Keywords: *Dushta Vrana; Chronic infected wound; Avachooran; Centella asiatica; Tridax procumbens; Ayurvedic wound care; Case report; Mandukaparni; Jayanti; Wound Healing; Ayurveda; Shodhana; Ropana*

INTRODUCTION

Wounds that fail to progress through the normal stages of healing within a reasonable timeframe impose a significant burden on patients and healthcare systems alike. Beyond the physical discomfort, these wounds are often associated with repeat hospitalizations, expensive dressing⁹ regimens, and in some cases, surgical intervention. Factors such as chronic inflammation, biofilm formation, poor circulation, and systemic conditions like diabetes can each independently delay healing — and frequently several of these operate together.

The Ayurvedic conceptual framework offers a complementary lens through which chronic infected wounds¹⁰ can be understood and managed. In classical texts¹¹, the condition described as Dushta Vrana encompasses a range of clinical features we recognize today: suppurating discharge (Puyasrava), pain (Vedana), swelling (Shopha), abnormal tissue coloration (Vaivarnya), and unpleasant odor (Daugandhya). Management focuses on two sequential objectives — first cleansing the wound environment (Shodhana), then stimulating tissue regeneration (Ropana)¹².

Avachoorana is one of the Shashti Upakrama¹³ (sixty therapeutic measures) described by Acharya Sushruta for the management of various types of wounds (Vrana). Avachoorana is one such Shodhana-Ropana technique, involving the direct application of finely powdered, medicated herbs onto wound surfaces. The procedure involves the local application of finely powdered medicinal drugs over the wound surface. In Ayurvedic¹² wound care, Avachoorana is particularly indicated in Dushta Vrana, where features such as excessive discharge, foul odor, slough formation, infection, and delayed healing are present. The powdered drugs help absorb excessive moisture, reduce wound exudate, facilitate debridement of unhealthy tissue, and create a favorable environment for healing. From an Ayurvedic perspective¹³, Avachoorana performs both Shodhana¹⁴ (cleansing and purification) and Ropana (healing and tissue regeneration) actions. Through Shodhana, it assists in the removal of vitiated doshas, slough, and contaminants from the wound bed, while Ropana promotes healthy granulation tissue formation, wound contraction, and complete epithelialization. Owing to its simplicity, cost-effectiveness, and therapeutic efficacy, Avachoorana remains a valuable local treatment modality in the management of chronic and infected wounds.

Patient Information

Parameter	Details
Age	42 years
Gender	Male
Occupation	Farmer
Location	Rural Maharashtra, India
Socioeconomic background	Middle class
Diet	Mixed
Habits	Occasional tobacco (chewing)
Known comorbidities	None
Diabetes mellitus	Not present
Hypertension	Not present
Immunological status	No compromise
Cause of wound	Minor traumatic injury, right lower leg
Duration before presentation	More than 4 weeks
Earlier treatments received	Topical antiseptic dressings and oral antibiotics — inadequate response

Parameter	Details
Main complaints	Pain, discharge, swelling, non-healing wound

Clinical Findings

General Examination

Parameter	Findings
Pulse rate	80 beats/min
Blood pressure	124/78 mmHg
Temperature	Afebrile
Respiratory rate	18 breaths/min
Pallor	Not detected
Jaundice	Not detected
Cyanosis	Absent
Pedal edema	None

Local Wound Examination

Parameter	Findings
Location	Right lower leg
Wound dimensions	4.5 × 3 cm
Shape	Irregular
Wound margins	Inflamed, irregular
Wound bed	Slough overlying unhealthy granulation tissue
Depth	Involving skin and subcutaneous layer
Discharge type	Seropurulent
Odor	Mildly offensive
Tenderness	Present
Peri-wound temperature	Slightly elevated
Induration	Present
Peripheral pulses	Normal bilaterally
Lymphadenopathy	Absent

Ayurvedic Assessment

Based on the patient's history and clinical examination, the condition was diagnosed as Dushta Vrana¹⁵. The wound exhibited classical features described in Ayurvedic literature, including persistent discharge (Srava), unhealthy wound bed,

discoloration of tissues (Vivarnata), tenderness (Vedana), and delayed healing. The chronicity of the lesion indicated vitiation of Doshas leading to impairment of the normal wound-healing process.

The predominance of Pitta and Kapha Dosha was inferred from the presence of purulent discharge, foul odor, local inflammation, and slough formation, while the associated pain and delayed tissue regeneration suggested the involvement of Vata Dosha. Thus, the wound was considered a Tridoshaja Dushta Vrana with marked Pitta-Kapha predominance.

Examination of the wound revealed the presence of unhealthy granulation tissue (Dushta Mamsa), excessive moisture, and contamination of the wound bed, indicating the need for both Shodhana (wound cleansing and purification) and Ropana (promotion of healing and tissue repair) therapies. The therapeutic objective was to remove slough and wound impurities, reduce discharge, facilitate healthy granulation tissue formation, and achieve complete epithelialization.

Considering these findings, Avachoorana was selected as the local treatment modality owing to its established role in the management of Dushta Vrana. The procedure was aimed at creating a favorable wound environment by absorbing excess moisture, reducing local contamination, promoting wound contraction¹⁶, and supporting natural tissue regeneration. Based on the clinical picture — including purulent discharge, pain, swelling, discoloration, and odor — the wound was classified as Pitta-Kapha Dushta Vrana. This Ayurvedic designation reflects the predominant role of vitiated Pitta and Kapha Dosha in driving the suppurative, inflammatory, and stagnant character of the wound.

Key Dushta Vrana Features Identified

- Puyasrava — purulent exudate
- Vedana — significant pain
- Shopha — visible swelling and induration
- Vaivarnya — discoloration of peri-wound skin
- Dargandhya — mild but noticeable odor

Clinical Timeline

Timepoint	Clinical Event
Day 0	First consultation, clinical assessment, and diagnosis established
Day 0	Baseline investigations and wound swab culture obtained
Day 0	Herbal Avachooran treatment commenced
Day 7	Visible reduction in wound discharge; patient reported decreased pain
Day 14	Well-formed granulation tissue observed; wound edges drawing closer
Day 21	Full epithelialization confirmed; wound closed
1-Month Review	No recurrence; wound site stable
3-Month Review	Sustained healing with no complications

**Diagnostic Assessment
Laboratory Investigations**

Investigation	Result
Hemoglobin	13.6 g/dL
Total white cell count	9,800/mm ³
Erythrocyte sedimentation rate	28 mm/hr
Random blood glucose	102 mg/dL

Investigation	Result
C-reactive protein	Mildly elevated
HIV / HBsAg	Non-reactive

Microbiological Culture

Wound swab culture identified *Staphylococcus aureus* as the predominant organism, which showed susceptibility to commonly available antibiotics. No fungal pathogens were detected.

Differential Diagnoses Considered and Excluded

Considered Diagnosis	Basis for Exclusion
Diabetic foot ulcer	Blood glucose within normal range
Venous ulcer	No clinical evidence of venous insufficiency
Arterial / ischemic ulcer	Peripheral pulses normal bilaterally
Tubercular ulcer	No systemic features suggestive of tuberculosis
Malignant ulcer	No atypical proliferative tissue or suspicious morphology

Therapeutic Intervention

After obtaining informed consent, the wound was assessed clinically and baseline measurements were recorded. The wound was gently cleansed using sterile normal saline under aseptic precautions to remove surface debris, exudate, and loose slough. Following wound preparation, Avachoorana was performed using a sterile herbal powder formulation prepared from *Centella asiatica* (Mandukaparni)¹⁷ and *Tridax procumbens* (Jayanti)²⁰.

The powdered formulation was evenly dusted over the entire wound surface, ensuring adequate coverage of the wound bed and margins. A sterile dressing was then applied to protect the wound and maintain local hygiene. The procedure was carried out regularly throughout the treatment period, with dressing changes performed under strict aseptic conditions.

During each follow-up visit, the wound was evaluated for changes in pain, discharge, odor, wound dimensions, granulation tissue formation, and epithelialization. Any residual slough or unhealthy tissue was gently removed during dressing changes whenever required. The patient was advised to maintain proper local hygiene, avoid trauma to the affected area, and follow dietary and lifestyle measures supportive of wound healing.

The primary therapeutic objectives were to cleanse the wound bed, reduce excessive discharge and local inflammation, encourage the formation of healthy granulation²⁴ tissue, facilitate wound contraction, and promote complete epithelialization. Progressive clinical improvement was observed throughout the treatment period, with gradual reduction in discharge, pain, and wound size, ultimately resulting in satisfactory wound healing²⁵.

Avachoorana Procedure — Step by Step

1. Wound irrigated with sterile normal saline to remove debris and surface contamination
2. Loose slough carefully debrided using sterile gauze
3. Wound bed and peri-wound skin dried thoroughly
4. Approximately 2–3 g of sterile herbal powder dusted evenly across the wound surface
5. Sterile gauze dressing applied over the powder
6. Dressing renewed once daily for a total of 21 consecutive days.

Bates-Jensen Wound Assessment Tool (BWAT) Scores

Assessment Day	Clinical Findings	BWAT Score	Intervention
Day 0	Slough, discharge, pain, unhealthy wound bed	30	Wound cleansing + Avachooran
Day 7	Reduced discharge, healthy granulation tissue visible	28	Continued avachooran
Day 14	Significant wound contraction, minimal discharge	18	Continued dressing and monitoring
Day 21	Complete epithelialization	10	Treatment completed

Serial Wound Measurements²⁶

Day	Length (cm)	Width (cm)	Area (cm ²)	Discharge	Pain (VAS/10)
Day 0	4.5	3.0	13.5	Heavy, seropurulent	7
Day 7	3.8	2.5	9.5	Moderate reduction	4
Day 14	2.0	1.5	3.0	Minimal, serous	2
Day 21	Healed	Healed	0	None	0

PHOTOGRAPHIC DOCUMENTATION

Clinical photographs were recorded at regular intervals during the treatment period after obtaining informed consent from the patient. Images were taken to document changes in wound appearance and monitor the healing process²⁷. Photographs were captured at baseline and subsequent follow-up visits using similar positioning and lighting conditions to allow comparison over time.

The photographic records showed a gradual improvement in the wound condition throughout the treatment period. Initial images demonstrated the presence of slough, discharge, and unhealthy tissue. Follow-up photographs revealed reduction in wound discharge, improvement in the wound bed, appearance of healthy granulation tissue, progressive wound contraction, and eventual epithelialization. The visual findings were consistent with the clinical observations noted during follow-up assessments²⁶.



Figure 1: Wound appearance before treatment (Day 0).



Figure 2: Wound appearance on Day 21 showing complete epithelialization.

Follow-Up and Outcomes

The patient was monitored regularly throughout the 21-day treatment period to assess wound healing and identify any adverse events. Clinical evaluation was performed during each follow-up visit, focusing on wound dimensions, discharge, pain, granulation tissue formation, and epithelialization.

During the first week of treatment, a noticeable reduction in wound discharge and local tenderness was observed. The wound bed appeared cleaner, with gradual separation of slough and the emergence of healthy granulation tissue. By the second week, further reduction in wound size and exudate was noted, along with improved wound bed characteristics and progressive wound contraction. At the completion of treatment on Day 21, complete epithelialization of the wound was achieved. The wound margins were well approximated, healthy tissue covered the wound surface, and there was no evidence of discharge, foul odor, or local inflammation. The patient reported significant relief from pain and improvement in daily activities. No treatment-related complications or adverse reactions were observed during the treatment period. Follow-up evaluation confirmed maintenance of wound healing without recurrence or deterioration of the wound condition²⁷.

DISCUSSION

Management of chronic infected wounds remains a significant clinical challenge because persistent infection, excessive exudation, and unhealthy tissue often interfere with the normal healing process. In Ayurveda, such wounds are described under the concept of Dushta Vrana, where the primary therapeutic approach involves wound cleansing (Shodhana) followed by promotion of tissue repair (Ropana). The present case demonstrated satisfactory healing of a chronic infected wound following local application of Avachoorana prepared from *Centella asiatica* (Mandukaparni) and *Tridax procumbens* (Jayanti).

At the time of presentation, the wound exhibited features suggestive of impaired healing, including slough formation, discharge, pain, and unhealthy granulation tissue. Progressive improvement was observed throughout the treatment period. Reduction in discharge and slough was evident during the early phase of treatment, followed by the appearance of healthy granulation tissue and gradual wound contraction. Complete epithelialization was achieved within 21 days, indicating a favorable healing response.

The observed clinical outcome may be explained by the combined actions of the selected herbal ingredients and the therapeutic principles of Avachoorana. From an Ayurvedic perspective, the powdered formulation helps maintain a clean wound environment by reducing excessive moisture and supporting local tissue repair. This creates conditions conducive to the transition from the inflammatory phase of healing to the proliferative phase.

Modern studies have reported that *Centella asiatica* contains bioactive compounds that support fibroblast proliferation, collagen synthesis, angiogenesis, and epithelial regeneration. These processes play a crucial role in wound contraction and restoration of tissue integrity. Similarly, *Tridax procumbens* has been investigated for its antimicrobial, anti-inflammatory,

antioxidant, and wound-healing²⁸ properties. Experimental studies have suggested its potential to enhance cellular migration and support tissue regeneration, which may contribute to faster wound closure.

The findings of the present case are consistent with these reported pharmacological activities. The gradual reduction in wound discharge, improvement in wound bed quality, development of healthy granulation tissue, and complete epithelialization observed during follow-up suggest that the intervention may have facilitated different stages of the healing process. In addition, no adverse effects or local intolerance were noted, indicating good acceptability of the treatment.

Although the outcome was encouraging, this report represents the experience of a single patient. Therefore, definitive conclusions regarding efficacy cannot be drawn. Larger clinical studies with standardized outcome measures and longer follow-up periods are required to further evaluate the therapeutic potential of Avachoorana in the management of chronic wounds.

Overall, the present case highlights the possible role of Avachoorana as a simple, economical, and well-tolerated local treatment modality for Dushta Vrana. The favorable healing response observed in this patient supports the need for further clinical investigation of this traditional approach in contemporary wound care.

Patient Perspective

"I noticed gradual improvement in my wound during the treatment period. The pain and discharge reduced significantly, and the wound healed completely within a few weeks. I was satisfied with the treatment and did not experience any adverse effects."

Informed Consent and Ethics

Written informed consent was obtained from the patient for treatment, clinical photography, and publication of anonymized clinical information. Patient confidentiality was maintained throughout the study by removing all identifying details. As this report describes the clinical management of a single patient, separate institutional ethical approval was not required according to applicable guidelines.

CONCLUSION

The successful outcome observed in the present case highlights the potential role of Avachoorana as a local wound management approach in Dushta Vrana. The intervention was associated with progressive improvement in wound characteristics, including reduction in discharge, slough, pain, and local inflammation, followed by the development of healthy granulation tissue and complete epithelialization within 21 days.

The therapeutic response observed may be attributed to the combined effects of wound cleansing and tissue healing promoted by the selected herbal formulation. In addition to facilitating a favorable wound environment, the treatment was simple to administer, economical, and well tolerated throughout the treatment period. No adverse events or complications were noted during follow-up. Although conclusions cannot be generalized from a single case, the findings suggest that Avachoorana with *Centella asiatica* and *Tridax procumbens* may offer a useful supportive option in the management of chronic infected wounds³⁹. Further clinical studies involving larger sample sizes, standardized assessment tools, and longer follow-up periods are warranted to validate these observations and explore their applicability in broader clinical settings.

REFERENCES

1. Sushruta. Sushruta Samhita. Edited by Yadavji Trikamji Acharya. Reprint ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2022,pg.no.402
2. Sharma PV. Sushruta Samhita with English Translation. Vol. 2. Varanasi: Chaukhambha Vishvabharati; 2018.
3. Kelkar D, Krishnamurthy MS. A classical review on Avachoorana Yogas. *Int J Pharm Res Appl.* 2025;10(6):319-324.
4. Ashoka SM, Dsouza VS, Shabaraya AR. An update on the Ayurvedic herb *Centella asiatica*. *Indian J Pharm Drug Stud.* 2023;2(1):17-22.
5. Manasa R, Santosha DU, Meghana HD, Kiranmayee P, Rajeshwari CU. Wound healing activity of *Centella asiatica*: A review. *IP J Nutr Metab Health Sci.* 2023;6(1):1-6.
6. Tripathi N, Makode D, Jawade V, Dhamgaye S, Deshmukh P. Exploring the wound healing potential of *Tridax procumbens* extract through in vitro cytotoxicity and scratch assay studies. *SSR Inst Int J Life Sci.* 2024;10(2):5146-5151.
7. Enoch S, Leaper DJ. Basic science of wound healing. *Surgery (Oxford).* 2008;26(2):31-37.
8. Guo S, Dipietro LA. Factors affecting wound healing. *J Dent Res.* 2010;89(3):219-229.

9. Boateng JS, Matthews KH, Stevens HNE, Eccleston GM. Wound healing dressings and drug delivery systems: A review. *J Pharm Sci.* 2008;97(8):2892-2923.
10. Kumar V, Abbas AK, Aster JC. Robbins and Cotran Pathologic Basis of Disease. 10th ed. Philadelphia: Elsevier; 2021.
11. Sharma RK, Dash B. Charaka Samhita. Vol. 4. Varanasi: Chaukhambha Sanskrit Series Office; 2020.
12. Srikantha Murthy KR. Ashtanga Hridaya. Reprint ed. Varanasi: Chaukhambha Krishnadas Academy; 2021.
13. Acharya YT, editor. Sushruta Samhita of Sushruta with Nibandhasangraha Commentary of Dalhanacharya. Varanasi: Chaukhambha Surbharati Prakashan; 2022.
14. Acharya JT, editor. Charaka Samhita of Agnivesha with Ayurvedadipika Commentary of Chakrapanidatta. Varanasi: Chaukhambha Surbharati Prakashan; 2021.
15. Murthy KRS. Ashtanga Hridayam of Vagbhata. Vol. II. Varanasi: Chaukhambha Krishnadas Academy; 2021.
16. Biswas TK, Mukherjee B. Plant medicines of Indian origin for wound healing activity: A review. *Int J Low Extrem Wounds.* 2003;2(1):25-39.
17. Shukla VK, Rasik AM, Dhawan BN. Asiaticoside-induced elevation of antioxidant levels in healing wounds. *Phytother Res.* 1999;13(1):50-54.
18. Brinkhaus B, Lindner M, Schuppan D, Hahn EG. Chemical, pharmacological and clinical profile of *Centella asiatica*. *Phytomedicine.* 2000;7(5):427-448.
19. James JT, Dubery IA. Pentacyclic triterpenoids from *Centella asiatica* and their role in wound healing. *Molecules.* 2009;14(10):3922-3941.
20. Hemalatha R. Anti-inflammatory and wound healing activities of *Tridax procumbens* Linn. *Fitoterapia.* 2008;79(4):283-286.
21. Udupa SL, Udupa AL, Kulkarni DR. Studies on the anti-inflammatory and wound healing properties of *Tridax procumbens*. *Indian J Physiol Pharmacol.* 1991;35(4):269-272.
22. Singer AJ, Clark RAF. Cutaneous wound healing. *N Engl J Med.* 1999;341(10):738-746.
23. Frykberg RG, Banks J. Challenges in the treatment of chronic wounds. *Adv Wound Care.* 2015;4(9):560-582.
24. Martin P. Wound healing—aiming for perfect skin regeneration. *Science.* 1997;276(5309):75-81.
25. Schultz GS, Sibbald RG, Falanga V, Ayello EA, Dowsett C, Harding K, et al. Wound bed preparation: A systematic approach to wound management. *Wound Repair Regen.* 2003;11(Suppl 1):S1-S28.
26. Lazarus GS, Cooper DM, Knighton DR, Margolis DJ, Percoraro RE, Rodeheaver G, et al. Definitions and guidelines for assessment of wounds and evaluation of healing. *Arch Dermatol.* 1994;130(4):489-493.
27. Boateng J, Catanzano O. Advanced therapeutic dressings for effective wound healing. *J Pharm Sci.* 2015;104(11):3653-3680.
28. Natarajan P, Dhas SP, Kumar R. Herbal approaches in chronic wound management: Current evidence and future prospects. *J Ethnopharmacol.* 2020;249:112398.
29. Tripathi N, et al. Exploring the Wound Healing Potential of *Tridax procumbens* Extract. *SSR Inst Int J Life Sci.* 2024.
30. Manasa R, et al. Wound Healing Activity of *Centella asiatica*. *IP Journal of Nutrition, Metabolism and Health Science.* 2023.
31. Kelkar P, Krishnamurthy MS. A Classical Review on Avachoorana Yogas. *Int J Pharm Res Appl.* 2025.
32. Sharma A, Patil V, Deshmukh A. Herbal agents in wound management: an ethnopharmacological review. *J Ethnopharmacol.* 2020;258:112878.
33. Thomas J, Pillai P, Rajendran R. A systematic review of polyherbal wound healing powders. *J Integr Med.* 2022;20(5):385-391.
34. Brinkhaus B, Lindner M, Schuppan D, Hahn EG. Chemical, pharmacological and clinical profile of *Centella asiatica*. *Phytomedicine.* 2000;7(5):427-448.
35. Dash GK, Murthy PN. Wound healing activity of *Tridax procumbens*: experimental evaluation. *Indian J Pharm Sci.* 2011;73(2):198-200.
36. World Health Organization. WHO Traditional Medicine Strategy 2023-2032. Geneva: WHO; 2023.
37. Sussman C, Bates-Jensen B. Wound Care: A Collaborative Practice Manual. 4th ed. Philadelphia: Lippincott Williams & Wilkins; 2012.
38. Boateng J, Catanzano O. Advanced therapeutic dressings for effective wound healing: a review. *J Pharm Sci.* 2015;104(11):3653-3680.
39. Gupta A, Kumar P. Integrative approaches in chronic wound management: a clinical assessment. *Int Wound J.* 2021;18(4):441-449.