



Case Study

EFFICACY OF KASEESADI MALAHARA IN TRANSFORMING MADHUMEHAJA VRANA (A NON-HEALING DIABETIC FOOT ULCER): A CASE REPORT

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ABSTRACT

Diabetes Mellitus is a rapidly rising chronic metabolic emergency globally, with India's prevalence currently estimated at 13–15%. Diabetic foot ulceration is a severe complication, carrying a 6–11% infection risk and frequently resulting in lower-limb amputations. In Ayurveda, this pathology is correlated with *Madhumehaja Vrana*, a chronic, difficult-to-cure (*Kashtasadhya*) condition driven by *Avrutta Vata* and *Bahudrava Shlesma*. **Methodology:** A 56-year-old diabetic male presented with a 4cm × 3cm slough-covered, purulent wound on the right dorsum of his foot, secondary to a plantar thorn prick, accompanied by dry gangrene of the right great toe. After undergoing a minor surgical amputation of the gangrenous toe and abscess drainage, the patient was managed systemically with oral *Panchatikta Ghrita Guggulu* and topically with twice-daily dressings of an institutional formulation, *Kaseesadi Malahara*. **Results:** Local wound improvement and visible slough clearance were noted by the second week. Complete healthy epithelialization and 100% wound closure (marked improvement) were achieved within 45 days. No clinical recurrence was observed during a 2-month follow-up period. **Conclusion:** Combining timely surgical source control with systemic *Panchatikta Ghrita Guggulu* and topical *Kaseesadi Malahara* provides a safe, highly accelerated, and reproducible healing outcome for chronic diabetic foot ulcers.

INTRODUCTION

One of the major complications of diabetes mellitus is lower extremity foot ulceration, which imposes a profound social, medical, and economic burden on global healthcare systems. Epidemiological data from India indicates that the prevalence of secondary infections in diabetic ulcers ranges between 6% and 11%, with an associated lower-limb amputation rate of 3% among Type 2 Diabetic patients. In developing nations like India, the primary etiologies driving ulceration include barefoot walking, specific cultural or religious practices (such as fire-walking), the use of improper or ill-fitting footwear, a general lack of clinical awareness, and widespread negligence regarding routine foot care^[1,2].

Globally, the healthcare burden remains staggeringly high, accounting for over one million amputations annually. Despite extensive research and technological advancements in conventional wound management, this amputation ratio has remained frustratingly static for the past 30 years. Diabetic ulcers are predominantly located on the plantar surface of the foot over the metatarsal heads or the heel due to continuous mechanical stress.

Consequently, the primary objectives of diabetic wound care are the aggressive prevention of secondary infections and the acceleration of healthy tissue regeneration. Early diagnostic and therapeutic interventions drastically reduce both patient mortality and the financial burden on the healthcare sector. Clinical evidence confirms that active, targeted management of active foot ulcers significantly lowers the eventual risk of lower-limb amputation^[3].

In classical Ayurvedic literature, specifically within the *Sushruta Samhita*^[4], diabetic foot ulcers are correlated with *Madhumehaja Vrana*. *Madhumeha* (diabetes mellitus) is classified as an advanced form of

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Vatika Prameha (a metabolic disorder dominated by a *Vata* imbalance). Acharya Sushruta explicitly states that the management of these chronic wounds is *Kashtasadhya* (difficult to cure) due to underlying systemic tissue depletion (*Dhatu Kshaya*) and impaired cellular vitality. While classical texts heavily advocate the use of *Kaseesadi* formulations in oil (*Taila*) form to cleanse and heal infected wounds (*Dushta Vrana*), modern clinical practice necessitates more stable, high-adherence topical media. Therefore, this study utilizes an ointment modification (*Malahara*) to maximize local tissue contact and drug absorption.

OBJECTIVE

To clinically evaluate the therapeutic efficacy of *Kaseesadi Malahara* for its specialized *Vrana Shodhana* (wound cleansing) and *Vrana Ropana* (wound healing) properties in the management of chronic diabetic foot ulcers.

MATERIALS AND METHODS

Formulation and Preparation of *Kaseesadi Malahara*^[5,6,7]

The topical formulation, *Kaseesadi Malahara*, is an innovative modification of a classical wound-healing compound described in the *Sushruta Samhita*. It was prepared in accordance with the standard pharmaceutical principles of *Malahara Kalpana* (ointment preparation) at the institutional pharmacy.

Table 1: Phytochemical and Mineral Ingredients of *Kaseesadi Malahara*

S. No.	Ingredient	Botanical Name/Scientific Nomenclature	Role/Properties
1	<i>Shuddha Kaseesa</i>	Purified green vitriol (ferrous sulphate)	<i>Shodhana</i> (debridement)
2	<i>Saindhava Lavana</i>	Rock salt (sodium chloride)	Antimicrobial, hypertonic
3	<i>Kinva</i>	Yeast / residual fermenting agent	Enzymatic debridement
4	<i>Haridra</i>	<i>Curcuma longa</i> L.	Anti-inflammatory, healing
5	<i>Daru Haridra</i>	<i>Berberis aristata</i> DC.	Antimicrobial, <i>Vrana Ropana</i>
6	<i>Vacha</i>	<i>Acorus calamus</i> L.	Purifying, analgesic
7	<i>Tila Taila</i>	<i>Sesamum indicum</i> L. (sesame oil)	Oleation base (<i>Snehana</i>)
8	<i>Sikta</i>	Pure beeswax	Ointment base (<i>Malahara Adhara</i>)

Pharmaceutical Preparation: Raw herbal drugs were authenticated by the institutional botany department. The *Malahara* base was created by melting one part *Sikta* (beeswax) in six parts *Tila Taila* (sesame oil). The molten mixture was filtered through a sterile muslin cloth to eliminate physical impurities. Finely powdered forms of ingredients 1 through 6 were progressively added to the cooling oil-wax matrix and spatulated continuously until a completely smooth, homogenous, and stable ointment was achieved.

Clinical Assessment Criteria

The patient's clinical progression was evaluated weekly using a semi-quantitative 4-point grading scale (Grades 0 to 3) across the following parameters:

- **Subjective:** Intensity of localized pain.
- **Objective:** Volume and nature of wound discharge, quality of granulation tissue formation, and absolute wound surface area (cm).

Table 2: Clinical Criteria for Assessing Total Efficacy of Therapy

S.No.	Clinical Outcome	Definition of Criteria
1	Marked Improvement	100% relief of clinical symptoms along with complete wound closure within 45 days.
2	Moderate Improvement	75% resolution of clinical features with complete wound closure achieved between 45 and 60 days.
3	Mild Improvement	25% to 75% reduction in wound size and symptoms within 45 days, without complete closure.
4	No Improvement	Status quo or worsening of clinical presentation by day 45.

Case Report

Patient Information & History

A 56-year-old male patient with a 5-year history of well-controlled Type 2 Diabetes Mellitus presented to the outpatient department. He reported an accidental thorn prick on the plantar aspect (sole) of his right foot 1 week prior. This trauma triggered a rapid, ascending deep-tissue infection resulting in an abscess on the right dorsum of the foot within 5 days. Over the subsequent 48 hours, he developed dry gangrene of the right great toe and a slough-covered, draining wound on the dorsum. The patient had no other systemic comorbidities and was hemodynamically stable with all baseline vital signs within physiological limits.

Local Examination of the Lesion

A meticulous local physical examination of the right lower extremity at admission revealed the following baseline clinical features:

Inspection

- Site: Dorsum of the right foot.
- Size: 4cm × 3cm single, irregular wound.
- Floor and Color: Covered extensively with thick, devitalized slough and active pus.
- Discharge: Profuse, thick, purulent exudate.
- Associated Signs: Obvious dry gangrene localized to the right great toe.

Palpation

- Tenderness: Tenderness noted in the tissues adjoining the wound.
- Oedema: Marked non-pitting edema tracking across the midfoot.

- Peripheral Circulation: Bilateral lower limb arterial pulsations were palpable, ensuring adequate macrovascular blood flow.
- Odor: No distinct putrid or foul smell was noted.

Therapeutic Intervention Plan

To prevent ascending systemic sepsis and salvage the limb, an integrated surgical and Ayurvedic therapeutic protocol was executed:

1. **Surgical Phase:** Under strict aseptic conditions and local anesthesia, a minor surgical intervention was performed. This included a radical amputation of the gangrenous right great toe, followed by an immediate incision, drainage, and surgical debridement of the dorsal foot abscess to clear necrotic tissues. Haemostasis was achieved.
2. **Ayurvedic Wound Care Phase:** The post-excision wound bed was thoroughly cleansed with sterile normal saline. *Kaseesadi Malahara* was applied topically in a uniform layer directly into the wound.
3. **Dressing Protocol:** The wound was wrapped using sterile gauze and a non-compressive bandage to ensure uninterrupted peripheral microcirculation. This topical protocol was performed twice daily for 45 consecutive days.
4. **Systemic Management:** The patient was maintained on oral *Panchatikta Ghrita Guggulu* (dosage as prescribed) alongside regular *Nidanaparivarjana* (strict restriction of dietary sugars and avoidance of weight-bearing on the affected foot).

FIGURES

Clinical Images of Wound Before, During and After Treatment



Image 1: Post Amputation and debridement of wound



Image 2: Wound on 14th day



Image 3: Wound on 21st day



Image 4: Malahara application



Image 5: Wound on 30th day



Image 6: Wound on 38th day

RESULTS

The introduction of *Kaseesadi Malahara* dressings induced rapid improvements in the wound microenvironment:

- Week 2: A visible reduction in purulent discharge was achieved. Healthy, bright red granulation tissue began replacing the slough layer, confirming successful *Vrana Shodhana* (cleansing).
- Day 45: The wound contracture accelerated, resulting in a 100% complete wound closure with healthy epithelialization, meeting the criteria for Marked Improvement.
- Follow-up: The patient was monitored for 2 consecutive months post-healing. No signs of tissue breakdown, sinus formation, or clinical recurrence were observed.

DISCUSSION

The successful management of this chronic diabetic foot ulcer (*Madhumehaja Vrana*) demonstrates the clinical efficacy of combining surgical debridement with targeted Ayurvedic systemic and topical therapies. In Ayurveda, *Madhumeha* is classified as a *Vatika Prameha* where *Avrutta Vata* (obstructed *Vata*) and *Bahudrava Shlesma* (excessive fluid *Kapha*) vitiate the deeper tissues (*Dhatu*s), specifically *Mamsa* (muscle) and *Meda* (fat). This state causes poor cellular vitality and delayed wound healing, making *Madhumehaja Vrana* characteristically *Kashtasadhya* (difficult to cure).

The initial surgical intervention- amputation of the gangrenous great toe alongside incision and drainage- effectively eliminated the localized source of necrosis and systemic sepsis risk.^[10,11] Following surgery, the primary clinical objective shifted to wound bed preparation, which mirrors the classical principles of "*Vrana Shodhana*" (cleansing/debridement) and "*Vrana Ropana*" (healing/regeneration).

The topical application^[10] of *Kaseesadi Malahara* played a dual role in transforming the wound microenvironment:

- **Shodhana (Cleansing) Action:** Ingredients like *Shuddha Kaseesa* (green vitriol) and *Saindhava Lavana* (rock salt) create a mild hypertonic and acidic environment. This action chemically debrides devitalized tissue, thins out thick slough, and reduces purulent discharge. The addition of *Kinva* (yeast ferment) provides gentle enzymatic debridement, while *Vacha* and *Daru Haridra* exert potent antimicrobial actions against local bacterial colonization ^[11,12,13,14].
- **Ropana (Healing) Action** ^[12,13,14]: Once the slough was cleared by the second week, *Haridra* and *Daru Haridra* stimulated fibroblast proliferation and healthy angiogenesis. *Tila Taila* (sesame oil) and *Sikta* (beeswax) maintained an optimal moist wound-healing environment, protecting newly formed granulation tissue and accelerating epithelial migration.

Systemically, the administration of oral *Panchatikta Ghrita Guggulu* was vital in altering the patient's underlying metabolic pathology. The bitter (*Tikta*) herbs in this formulation- such as *Nimba* (neem), *Patola*, and *Vasa*- possess strong *Kaphahara* and *Kledahara* properties. They directly dry up the excessive, stagnant tissue moisture (*Bahudrava Shlesma*) that otherwise fuels bacterial growth. Furthermore, *Guggulu* acts as a potent anti-inflammatory agent and metabolic stimulant (*Deepana/Pachana*), enhancing microcirculation and ensuring the effective delivery of nutrients to the healing margins of the right foot.

CONCLUSION

The integrated approach of targeted local surgery followed by dual-action Ayurvedic management offers an effective therapy for complex diabetic foot ulcers. The combination of topical *Kaseesadi Malahara* for wound debridement and healing, alongside systemic *Panchatikta Ghrita Guggulu* to correct the underlying metabolic imbalance, achieved complete wound closure in 45 days with zero recurrence at 2 months. This approach represents a viable clinical strategy to accelerate healing and minimize lower-limb amputation risks in diabetic patients.

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