



Case Study

## A CASE STUDY ON THE ROLE OF AYURVEDA IN THE MANAGEMENT OF DIABETIC FOOT ULCER (*MADHUMEHAJANYA DUSHTA VRANA*)

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### ABSTRACT

In Ayurveda, this condition is correlated with *Madhumehajanya Vrana*, where principles of *Shodhana* (cleansing) and *Ropana* (healing) are emphasized. **Objective:** To evaluate the effectiveness of Ayurvedic treatment in a patient presenting with a diabetic foot ulcer (*Madhumehajanya Vrana*). **Materials and Methods:** A 76-year-old male patient was admitted to the Ayurvedic hospital with complaints of *Pada Vrana* (foot ulcer), *Padashotha* (pedal edema), and *Agnimandya* (loss of appetite) for one and a half months. The patient was diagnosed with *Madhumehajanya Vrana* (diabetic ulcer) based on clinical findings and history. Given treatment was *Brihat Manjisthadi Kwatha* – 40ml twice daily, *Triphala Guggulu* – 3 tablets twice daily, *Punarnavadi Mandoor* (1gm), *Madhumehari Churna* (3gm), and *Gokshur Churna* (2gm)– combined and administered twice daily. *Haritaki Churna*– 5gm with lukewarm water at bedtime for 1 month. Clinical assessments were performed at regular intervals to evaluate wound healing, pedal edema, appetite, and laboratory parameters. Complete wound healing was achieved after a treatment period of six months. **Results:** During the initial weeks, the patient experienced a reduction in *Padashotha* (pedal edema) and improvement in *Agnimandya* (loss of appetite). The ulcer gradually decreased in size with reduced discharge and the formation of healthy granulation tissue. **Conclusion:** This case demonstrates that a comprehensive Ayurvedic management approach- combining local *Shodhana* and *Ropana* measures with systemic formulations- can effectively promote wound healing in *Madhumehajanya Vrana* (diabetic foot ulcer). Along with complete ulcer closure, associated systemic improvements such as reduced edema, improved appetite, and better glycemic regulation were achieved.

### INTRODUCTION

Diabetes is a growing challenge in India with the prevalence rate of 8.7% in the age group of 20-70 years<sup>[1]</sup>. Diabetic foot is an important complication of diabetes mellitus. Diabetic foot consists of infection, ulcer and loss of tissues. Optimum healing of a cutaneous wound requires a well-orchestrated integration of the complex biological and molecular events of cell migration and proliferation, and of extracellular matrix deposition and remodeling.

Cellular responses to inflammatory mediators, growth factors, and cytokines, and to mechanical forces, must be appropriate and precise. However, this orderly progression of the healing process is impaired in chronic wounds, including those due to diabetes. The screening examination includes evaluation for peripheral neuropathy, skin integrity, ulcers or wounds, deformity, vascular insufficiency, and footwear. Foot-specific patient education includes instruction on self-examination and foot care practices. Diabetic foot ulcer is a type of non-healing wound which requires surgical intervention like debridement of wound and the last option is amputation of foot due to which normal functioning gets hampered. Diabetes mellitus is correlated with *Madhume* and that of the diabetic foot ulcer is correlated with *Madhumehajanya pidika* which comes under the category of *Dushtvran*

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the sign and symptoms of this resembles with *Dusht vran*. *Madhumehjanya vran* are *Kruchrasa sadhya* i.e., difficult to heal<sup>[2]</sup>. *Madhumeh* is the last stage of *Prameh* which is *Yapya* type of disease<sup>[3]</sup>. *Madhumehjanya vran* falls under the category of *Dusht vran*. Its management or treatment is also similar to that of the *Dusht vran*<sup>[4]</sup>. It is treated on the basis of *Shastiupkram* which is prescribed by *Acharya Sushruta*<sup>[5]</sup>. There are so many Ayurvedic formulations given orally to control blood sugar level and to enhance wound healing. In this case the patient is

treated with oral medications and local application of Ayurvedic *Tail* after wound debridement.

Procedure like *Mithya Bandha*, *Atisneha*, *Roukshya* are the cause for vitiation of *Raktha*. *Raktha Dhatu* associated with *Rasa Dhatu* in its path of perfusion causes the vitiation of other *Dhatu* i.e., *Mamsa* and *Meda* which leads to *Dushta Vrana*. *Dosha* being aggravated by their respective causative factors gets lodged in any of *Vrana Sthana* to give rise to *Dushta Vrana*.

**Table 1: Samprapti Ghatakas of Dushtavrana**

S.No	Samprapti Ghatakas of Dushtavrana	
1	Dosha	Tridosha
2	Dushya and Adhithana	Twacha, Mamsa, Sira, Snayu, Sandhi, Asthi, Kostha and Marma
3	Srotas	Annavaha, Rosavaha, Roktavaha, Mamsavaha, Swedovaha
4	Agni	Manda, Vishama
5	Marga	Antarmarga, Madhyamamarga, Badhyamarga
6	Udbhavasthana	Anywhere in the body
7	Pratamya Lakshana	Gatra Vichurna along with Pancha Lakshana i.e., Vedana, Akruthi, Gandha, Vrana, and Srava

### Case Report

A 76-year-old male patient presented to the outpatient department of an Ayurvedic hospital with the following chief complaints for the past two months:

- Bilateral lower limb swelling (pitting edema) associated with an ulcer on the right foot.
- Breathing difficulty on exertion.
- Generalized weakness.
- Loss of appetite.

The patient's primary concern was a non-healing ulcer on the plantar aspect of his right foot below the great toe, associated with foul-smelling purulent discharge for the last 1.5 months. The ulcer measured approximately 4 × 3 cm.

### History of Present Illness

The patient was a known case of Diabetes Mellitus for the past 5 years. He reported progressive pedal edema and generalized weakness, even at rest, along with disturbed sleep (average 5 hours). Bowel habits were altered, while urine output was normal.

### Past History

- Diabetes Mellitus (Type II) for 5 years.
- No significant history of other systemic illness.

### Personal and Social History

- Occupation: Farmer.
- Diet: Vegetarian.
- Addiction: Smoker.

### Clinical Examination

On general examination, the patient was of average build, moderately nourished, weighing 67 kg.

- **Vital signs:** Pulse rate- 83/min (regular), Blood pressure- 130/70 mmHg, Respiratory rate- 20/min, Temperature - 98.4°F.
- **General findings:** Mild pallor, generalized bilateral pitting edema involving both feet and legs. No lymphadenopathy.
- **Respiratory system:** Symmetrical chest expansion, dullness on percussion, bilateral diminished air entry.
- **Cardiovascular system:** Normal S1 and S2 heart sounds; no additional abnormalities detected.
- **Abdominal examination:** Soft, non-tender, mildly distended with centrally placed umbilicus.
- **Central nervous system:** Within normal limits.

### Laboratory Investigations

- Fasting Blood Sugar (FBS): 166 mg/dl
- HbA1c: 8.1%

### Ayurvedic Examination

- *Sharirika Prakriti* (body constitution): *Vata-Kaphaja*
- *Manasika Prakriti* (mental constitution): *Satva-Rajasika*
- *Sara* (excellence of *Dhatu*s): *Madhyama*

- *Samhanana* (compactness of tissues): *Madhyama*
- *Pramana* (anthropometry): *Madhyama*
- *Vaya* (Age): *Jirna* (old age)
- *Ahara Shakti* (food intake capacity): *Avara*
- *Vyavaharāna Shakti* (capacity of utilization): *Avara*
- *Jaraṇa Shakti* (digestive power): *Avara*

### Roga Pariksha (Disease Examination)

The ulcer on the plantar aspect of the right foot was identified as a *Dushta Vrana* (chronic non-healing ulcer). It exhibited the classical features described in Ayurveda, including:

- *Ativivrita* (broad base),
- *Bhairava* (ugly appearance),
- *Vedana* (pain),
- *Dirghakalanubandhi* (chronicity).

**Table 2: Local Examination**

S.No	Stanika Pareeksha of Dushtavrana	
1	Vrana-Type	Nija Vrana
2	Parigraha	Twak, Raktha, Sira, Mamsa & Medas
3	Rogadishtana	Adhakaya-daksinapada
4	Avastha	Pakwa
5	Prognosis	Krichrasadhya

### Ulcer Examination

- Site: Plantar aspect of the right foot
- Size: 4 × 3 cm, deep, circular in shape
- Number: Single ulcer (appearing as 1–2 adjoining lesions)
- Edges and Margins: Inflamed
- Floor: Pale red with yellowish slough
- Discharge: Purulent, foul-smelling
- Tenderness: Present (++)

### Timeline

The ulcer and associated systemic symptoms were assessed at the time of admission. Daily monitoring of local wound status and general health was carried out during the initial four weeks of hospitalization. After discharge, follow-up evaluations were conducted fortnightly to assess healing, systemic improvement, and recurrence.

### Diagnostic Assessment

**Table 3: Intervention and Duration**

<i>Triphala guggulu</i>	2 (BD)	
<i>Manjishtadi Kashaya</i>	30ml (BD) (empty stomach)	Duration of 3 months along with local treatment.
<i>Shilajativadi lauha</i>	25mg	
<i>Madhumehari churna</i>	4gm (before meal)	
<i>Aamalaki churna</i>	2gm	
<i>Erand bhrust haritaki</i>	5gm (H5)	

The diagnosis of *Madhumehajanya Vrana* (diabetic foot ulcer) was established on the basis of:

**Clinical features:** Non-healing ulcer with foul-smelling discharge, tenderness, and chronicity.

### Laboratory investigations

- Fasting Blood Sugar: 166 mg/dl
- HbA1c: 8.1%
- Routine hematological and biochemical parameters within normal range.

**Urine examination:** No significant abnormalities.

### Therapeutic Intervention

Management was planned according to Ayurvedic principles of *Vrana Chikitsa* with emphasis on *Shodhana* (cleansing) and *Ropana* (healing) measures.

### Local management

- Cleansing with *Panchavalkala Kwatha Parisheka*
- Regular dressing with *Jatyadi Taila*

### Systemic management

- *Brihat Manjishtadi Kwatha* – 40ml twice daily
  - *Triphala Guggulu* – 3 tablets twice daily
  - Combination of *Punarnavadi Mandoor* (1gm), *Madhumehari Churna* (3gm), and *Gokshur Churna* (2gm) – twice daily
  - *Haritaki Churna*– 5gm with lukewarm water at bedtime for 1 month
- Doses and combinations were adjusted based on symptomatic relief and progress of wound healing.

### Follow-up and Outcome

- The patient remained hospitalized for one month, during which steady improvement in wound condition and systemic health was observed.
- Within 3–4 weeks: noticeable reduction in discharge, foul odor, and pedal edema.
- Over 3 months: gradual reduction in ulcer size with healthy granulation tissue formation.
- At 6 months: complete healing of the ulcer with minimal scarring.
- Systemic improvements included better appetite, improved sleep quality, and enhanced overall strength.
- No adverse drug reactions were reported during the entire course of treatment.

**Table 4: Local Treatment Medicines-**

<i>Panchavalkala Kwatha</i>	<i>Vrana Pariseka</i> QS 2 days once	Local treatment done for 6 months from day 1 to till complete healing.
<i>Jathyadi taila</i>	<i>Vrana Pichu</i> QS 2 days once	



**(1) Before Treatment, (2) During Treatment and (3) After Treatment**

**Table 5: Local Assessment Parameter with results**

Assessment Parameter	Before Treatment	After Treatment
Number	1	Nil
Site	Plantar of foot in between toe and index toe	Fibrous scar mark
Wound size	4cm*3cm	Healed
Granulation tissue	Upto 25%	More than 50%
Pain	Localized pain during movement and not during rest	No pain
Discharge	Seropurulent- Moderate	No discharge
Burning sensation	Localized to ulcer site with felling of burning sensation	No
Itching	Slight, localized itching sensation	No
Edema	Pitting edema	Not present
Discoloration	Peripheral black color of skin	Mild lightening

## DISCUSSION

Diabetic foot ulcer (DFU) remains one of the most challenging complications of diabetes mellitus, often presenting as a chronic, non-healing wound. In Ayurveda, it can be correlated with *Madhumehajanya Vrana*, which is classified by Acharya Sushruta as a *Kashta Sadhya Vrana* (difficult-to-heal ulcer). The chronicity and poor healing tendency are due to the involvement of *Meda* and *Vasa* along with vitiated *Tridosha* and *Dushya*, ultimately leading to *Pramehjanya Pidika* that progresses into *Dushta Vrana*<sup>[6]</sup>.

In this case, the line of management was based on *Shashti Upakrama* for *Vrana Chikitsa* as mentioned by Sushruta, incorporating both *Shodhana* (cleansing/purification) and *Ropana* (healing-promoting) measures.

- **Triphala Guggulu** was selected as a systemic medicine owing to its description in *Chakradutta* as *Vranashotha-hara*. Its anti-inflammatory, antimicrobial, and analgesic activities are well-documented and align with modern wound healing phases such as inflammation, angiogenesis, collagen deposition, and epithelialization. Thus, it served as a systemic support for controlling inflammation and infection while promoting tissue repair.
- **Mahamanjistadi Kashaya**, with its *Rakta-shodhana* (blood-purifying) and *Vata-Pitta shamaka* properties, was indicated for chronic wounds presenting with foul smell, burning sensation, discharge, and delayed healing. By improving microcirculation and reducing local inflammation, it supported wound healing from within.
- **Local interventions** such as *Panchavalkala Kwatha Parisheka* provided wound cleansing and symptom relief, reducing discharge, odor, and burning sensation, while *Jatyadi Taila* dressing enhanced granulation and epithelialization due to its *Vrana Shodhana* and *Ropana* properties.

The combination of systemic formulations and local applications ensured both *Shodhana* (removal of vitiated *Dosha* and *Dushti*) and *Ropana* (facilitating healthy tissue regeneration). Alongside this, strict adherence to *Pathya-Apathya* played a crucial role, as improper diet and lifestyle (*Mithya Ahara-Vihara*) are considered key contributors to chronicity of *Vrana*.

Overall, the outcome of this case reinforces that Ayurvedic management, when applied systematically, can be highly effective in managing chronic diabetic foot ulcers, reducing complications, and preventing surgical interventions such as amputation. This aligns with the integrative understanding that wound healing

is a complex, multi-phased process requiring control of infection, regulation of blood glucose, removal of necrotic tissues, and promotion of tissue regeneration.

Treatment is outlined based on risk level, which is determined by the presence of peripheral neuropathy, deformity, and ulcer history. Treatment combines patient education, orthoses, footwear, and a time table for ongoing skin and nail care. Ulcer care includes paring of calluses, debridement of infected or nonviable tissue, dressings, and off-loading.

*Madhumehajanya Vrana* (diabetic foot ulcer) is considered a *Kashta Sadhya Vrana* in Ayurveda due to its chronicity and poor healing tendency. In this case, the application of principles described by Acharya Sushruta-particularly *Shashti Upakrama* of *Vrana Chikitsa*-proved effective. Through a combination of local measures (*Panchavalkala Kwatha Parisheka, Jatyadi Taila*) and systemic formulations (*Triphala Guggulu, Mahamanjistadi Kashaya*, etc.), the *Dushta Vrana* gradually transformed into *Shuddha Vrana* and ultimately healed completely, leaving only minimal scarring.

## CONCLUSION

This case highlights that Ayurvedic management offers a safe, holistic, and cost-effective approach for chronic non-healing wounds like diabetic foot ulcers. By addressing both systemic pathology (*Dosha-Dushya Sammurchana*) and local wound healing, Ayurveda provides not only ulcer closure but also improvement in overall health and quality of life. Hence, it may serve as an effective complementary strategy to conventional care in preventing complications such as recurrent infections and amputations.

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