

Ayurvedic Treatment Principles in the Management of *Madhumehajanya Vrana* (DFU)– A Case Study

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ABSTRACT:

Diabetic foot ulcer (DFU) is the most typical and devastating complication of diabetes mellitus, with a poor prognosis, which affects 15% of diabetic patients during their lifetime. Diabetic ulcer has been a challenge to be tackled since there is deficiency of growth factors and impaired immunity, which can lead to amputation if timely intervention is not done. In *Susrutha Samhita*, most scientific approach for the management of *Vrana* with *Shashti Upakrama* with specific indication to *Madhumehaja Vrana* has been described. Here a 60 years old male with a known history of Diabetes mellitus (Type2), developed a Non healing ulcer in the plantar aspect of left great toe (hallux) and was suggested for amputation. Within 2 months into treatment, Patient reported clinically relevant improvement and the ulcer was resolved completely with *Ayurvedic* line of management.

KEYWORDS: Ayurveda, Diabetic ulcer, *Madhumehaja Vrana*, *Shashti Upakrama*, *Vrana*.

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INTRODUCTION:

Diabetes affects approximately 415 million people worldwide, representing roughly 8.3% of the adult population. According to studies in 2019, the prevalence rate of Diabetes in India is estimated to be 8.9%. It is associated with various short and long-term complications, many of which, if left untreated, can be fatal.^[1] Diabetic foot ulcer (DFU) is the most typical and devastating complication of diabetes mellitus, with a poor prognosis, which affect 15% of diabetic patients during their lifetime. ^[2]

Diabetic ulcer has been a challenge to be tackled since there is deficiency of growth factors and impaired immunity, which can lead to amputation if timely intervention is not done. Mainstay of treatment includes antibiotics, debridement, local wound care, and footwear improvisation. In spite of all advances in health sciences, statistics reveals that about 3% patients yet have to undergo amputation.^[3]

In *Ayurveda*, *Prameha* has been described as a *Mahavyadhi* by all *Acharyas* and 20 types of *Prameha* are mentioned. According to *Sangraha-kara*, *Prameha* is a dreadful

disease, because of arising from all three *Doshas*, of being localized in the most vital organs, of persisting for a long time and of being accompanied with many complications.^[4] Diabetes mellitus is similar to *Madhumeha* which is a subtype of *Vataja Prameha*. In *Madhumeha* mainly the *Vata* and *Kapha* are predominant though the disease is *Tridosha Nimittaja*. According to *Acharya Sushruta*, the doshas accumulates in the lower part of the body owing to the incompetence of the *Dhamanis*. If *Sodhana* like proper management is not done, the *Doshas* get aggravated and vitiate *Mamsa* and *Rakta* producing *Pidaka* like *Upadravas*. In *Susrutha Samhita*, most scientific approach for the management of *Vrana* with *Shashti Upakrama* with specific indication to *Madhumehaja Vrana* has been described.^[5] Current therapies have a limited success rate and fall short in addressing the micro vascular pathology present in diabetics. The circumstances have never been better for the preservation of diabetic lower extremity. The challenge is to get these patients back on their feet. An intact microcirculation is required for tissue nutrition, removal of waste products, inflammatory responses and temperature regulation therefore, logically any defect in micro vascular function adversely affects tissue repair. Tissue oxygenation is a prerequisite for successful wound healing due to the increased demand for reparative processes. This scenario makes *Acharya Susrutha's* concept of adopting *Dushtavrana Chikitsa* for *Mehaja Vrana*, the most brilliant.

CASE REPORT:

A 60 year old male with a known history of Diabetes mellitus (Type2) since 08 years, came to our OPD, with a Non healing ulcer in the plantar aspect of left great toe (hallux) – since 15 days.

Patient was apparently normal fifteen days ago. Later, the patient had a trauma to the left great toe by hitting the stand of the vehicle. Initially there was a linear cut with minimal bleeding and dressing was done. After 01 week patient started noticing discoloration of the whole toe associated with pus discharge. He consulted a nearby hospital and an amputation of Left toe was suggested. But as the patient was not willing for amputation, he consulted our hospital for further management.

No relevant family history was noted by the patient. In medical history, DM (Type2) – under medication (Metformin 500mg+ Glimepiride 2mg [1-0-0]) since 8 years.

In Personal History, Vitals and Investigations – Patient gives a history of occasional smoking, disturbed sleep and reduced appetite. All the vitals were within normal limits. Investigations showed high blood sugar values i.e. FBS- 216 mg/dl and PPBS- 320 mg/dl (Table 1).

In Systemic Examination: CVS: S1 S2 Normal, CNS: Normal, RS: Normal

Local Examination: Ulcer Examination – Two ulcers were present in the plantar aspect of left hallux. Detailed examination of ulcers is given in (Table 2).

Ulcer 1 (Figure 1)

Ulcer 2 (Figure 2)

According to wagner's ulcer classification system - Grade 2

For evaluation of neuropathy Peripheral pulses, Sensation Monofilament test and tuning fork test were conducted.

- Peripheral pulses: dorsalis pedis (feeble), posterior tibial pulse and Anterior Tibial -present
- Sensation Monofilament test- diminished sensation
- Vibration (tuning fork test)- diminished.

THERAPEUTIC INTERVENTION:

A multimodal approach was initiated in this patient. Interventions like *Sthanika Lepa*, *Seka*, daily cleaning and dressing of ulcers were started. For the first 15 days dressing was done with *Gomutra Arka* and *Tankana Bhasma*. Later once granulation tissue

started appearing, dressing was done with *Guggulu Tiktaka Ghrita*. Four sittings of *Jalukavacharana*, one session of *Sadhyovirechana* were conducted and internal medications were also given during the intervention period. (Table 3)

Table-1: Details of patient:

Personal History	Vitals	Investigations
Diet - mixed Bowel - Regular Appetite - reduced Micturition - 5-6 times/ day Sleep - disturbed Habit - Smoking (occasionally) Allergy: not known	BP: 130/70 mm of Hg RR: 24 breaths/min HR: 84 bpm PR: 80 bpm HT: 172 cm WT: 75 kg	HB - 13 g% CBC - WNL Lipid Profile -WNL, FBS - 216 mg/dl PPBS - 320 mg/dl HIV I, II - Negative HbSAg - Negative

Table- 2: Ulcer Examination:

ULCER 1	ULCER 2
Site - plantar aspect of left hallux Shape - Elliptical Size - 3x2x3cm Discharge - Present (pus) Edge - Sloping Margin - Ill defined Floor - Unhealthy Granulation with slough Surrounding skin - Hard Tenderness - absent	Site - plantar aspect of left hallux Shape - Elliptical Size - 3x1x2.5cm Discharge - Present (pus) Edge - Sloping Margin - Ill defined Floor - Unhealthy Granulation with slough Surrounding skin - Hard Tenderness - absent

Table -3: Therapeutic Intervention:

External Therapies	Internal Medications
<ul style="list-style-type: none"> ✓ <i>Lepa</i> with <i>Dashanga Lepa Churna</i> - Once daily (for 15 days) ✓ <i>Seka</i> with <i>Panchavalka Kashaya</i> - Once daily (for 15 days) ✓ <i>Jalookavacharana</i> - 4 sittings ✓ Cleaning with normal saline, dressing with <i>Gomutra Arka</i> + <i>Tankana Bhasma</i> (first 15 days) ✓ Dressing with <i>Guggulu Tiktaka Ghrita</i> (after 15 days) 	<ul style="list-style-type: none"> ✓ <i>Sadhyovirechana</i> done with <i>Trivruth Lehya</i> 55g and <i>Draksha Rasa</i> 200ml - one sitting ✓ <i>Tab Sootha Sekhara Rasa</i> 1-0-1 B/F (2 weeks) ✓ <i>CapGrab</i> 1-1-1 A/F (2 months) ✓ <i>Cardorium Plus Syrup</i> 10 ml BD B/F (2 months)



Figure 1: Ulcer 1 (Day 1)



Figure 2: Ulcer 2 (Day 1)



Figure 3: Healing Ulcer 1 (Day20)



Figure 4: Healing Ulcer 2 (Day20)



Figure 5: Healed Ulcer 1 (Day45)



Figure 6: Healed Ulcer 2 (Day45)

RESULT AND DISCUSSION:

Once the intervention started, the condition got improved and ulcers started healing. By Day 20, healthy granulation tissue appeared, ulcer started healing, discoloration of surrounding area and discharge from ulcer was completely relieved. (Figure 3, figure 4). The ulcers got completely healed within 2 months without the need of amputation. Wagner's grade 2 Diabetic foot ulcer on day 0 was completely healed on Day 45, after the therapeutic interventions. After complete healing of the ulcer, there was no deformity observed in the hallux and only a negligible scar mark was present (figure 5, figure 6).

In diabetic patients, microcirculatory damage is apparent in the skin and subcutaneous tissue, leading to impaired wound healing. *Acharya Susrutha's* concept of adopting *Dushtavrana Chikitsa* for *Mehaja Vrana* is of great importance. *Prameha Janya Dushta Vrana* is having *Tridosha Prakopa*, *Pradhana Raktadushti* and *Chirakari* manifestation. *Sushruta Acharya* has given great emphasis to *Jalukavacharana* in such conditions. *Acharya Sushruta* while mentioning *Raktavisravana* in *Sashti Upakrama*, mentioned *Jalukavacharana* on ulcers associated with edema (*Sopha*), pain (*Vedana*), hardness or induration (*Katina*) hyper pigmentation (*Dhyama*), Erythema (*Sarakta*), uneven surface (*Vishama*) and which are deeply seated (*Samrabdha*). It is helpful in removing congested blood from local lesions quickly, in regeneration of new vessels with pure blood circulation at the site of lesion. The treatments including various *Shashti Upakramas* and internal medications resulted in complete wound healing and prevented the likely amputation too.

CONCLUSION:

This case study has highlighted and proved the potentials of *Ayurvedic* principles of

wound management in diabetic foot ulcers, without any deformity and loss of function. Diabetic foot ulcers can be healed by judicious use of *Ayurvedic* principles of wound management and strict blood sugar control. Thus, the need of the hour is to create global acceptance of *Ayurveda* modalities in the management of diabetic ulcer.

Patient perspective:

The patient was suggested for amputation of his affected toe, but with *Ayurvedic* line of management, the ulcer was completely healed without any complications.

Written consent of the patient:

The written informed consent has been obtained from the patient for treatment, publication of data and images.

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