

An Approach to Wound Healing in Dusta Vrana (Diabetic Foot Ulcer) with Ayurveda Formulations: A Case Report

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Abstract

Background: Diabetic Foot Ulcer (Dustavrana) is a common complication of Diabetes Mellitus. Sometimes Diabetic foot ulcer left unnoticed or improper management usually paves way to develop an infection affecting the foot, along with osteomyelitis which can even lead to amputation of the lower limb. This creates practical difficulty Physically and psychologically to the patient and for their kith and kins. So, proper treatment should be adopted as a measure for saving the lower limb from further infections as a preventive measure and complete healing should be aimed at without much difficulty. Materials and Methods: This article mentions a case report of the Diabetic foot ulcer managed through Ayurveda medications internally and proper wound care externally. Result: Ayurvedic medicines were able to manage the diabetic foot ulcer very effectively.

Keywords

Diabetic foot ulcer, Dusta vrana, Guggulutiktakam Kashayam, Diabetic angiopathy

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1. Introduction

Diabetes is a group of metabolic diseases characterized by Hyperglycemia. Chronic hyperglycemia leads to damage, dysfunction, and failure of different organs. Long term complications [1] include Diabetic Retinopathy-potential loss of vision, Diabetic Nephropathy-renal failure, Peripheral Neuropathy-Parasthesia, Foot ulcers, and Charcot disease, Autonomic Neuropathy-Gastrointestinal, Genitourinary, Cardiovascular symptoms, and sexual dysfunction. Diabetic Foot Ulcer is a long-term Complication of Diabetic Angiopathy [2].

1.1. Epidemiology of Diabetic Foot Ulcer [3]

Diabetic foot is defined as glucose laden tissues of the foot with ulceration, infection and destruction of deep tissues associated with neurological abnormalities and various degrees of peripheral vascular diseases of lower limb [4].

1.2. Incidence⁴ and Prevalence [5] of DFU in India

- Out of 62 million diabetic patients, 25% develop DFU, 50% become infected, 20% needs amputation
- Annual incidence of DFU in population-based studies is 1.0-4.1%, overall life -time incidence-25%
- Prevalence is 6.2%

2. Materials and Methods

2.1. Case Report

A 73-year-old male patient came to our Shalya tantra OPD of Sri Jayendra Saraswathi Ayurveda College on 14.8.2023.

2.1.1. Presenting Complaints

Non healing ulcers in the dorsal and ventral aspect of the foot of the right leg associated with pain for a couple of months.

2.1.2. History of Presenting Complaints

The patient had diabetic mellitus for 10 years. Before 7 years he developed leg pain and gradually ulceration of dorsal aspect of foot and on the web space of between the toes. He was on medication (metformin) and was undergoing aseptic dressing of the wound in a clinic in his hometown. His HbA1C levels were 8 initially. Later development of dry gangrene also happened. On x ray he was identified with osteomyelitis of distal phalanges. He was advised to do the below knee amputation and the below ankle amputation on second opinion. He came to Chennai and was undertaking siddha medicines. For better medication he came to our OPD in the month of August.



Figure 1. Initial Presentation of Foot Ulcer

2.2. Clinical Findings



Figure 2. X-ray of Foot Before and After Treatment

Table 1. Local Examination of the patient.

Examination	Clinical Features
Inspection	Shape: Irregular shaped ulcer Color: Bright red, distally blackish slightly Site: Dorsal aspect of the foot, between big toe and index toe Description of the floor: not uniform in depth, Granulation tissue present, clean with less slough
Palpation	Sensory loss over the wounded area
Other features	No foul smell, three sinuses with pus discharge present on the dorsal and ventral aspect of the foot

Table 2. Investigation Reports before treatment.

Biochemical Analysis and Imaging	
Hb count	11.7gm/dl
Total RBC	3.7
H1ABC	6.7
Estimated average glucose	117 mg/dl
Doppler study of Rt lower limb arteries	Diffuse atheromatous changes visualized. Right anterior tibial, posterior tibial and dorsalis pedis shows monophasic wave form

	with spectral filling indicating inflammatory changes.
Doppler study of RT lower limb veins	No evidence of deep vein thrombosis, multiple enlarged inguinal lymph nodes, intramuscular edema, possibly cellulitis
X-ray AP, oblique view	Presence of osteomyelitic changes in the distal phalanges, osteopenia present, degeneration changes

3. Results and Discussion

Table 3. Treatment Plan.

Time Plan	Treatment Plan	Outcome/Findings
14/8/2023-21/8/2023	<p>Internally</p> <p>Guggulutiktakam Kasayam 60ml BD B/F GTG* capsule 1BD A/F Grab 1 TID A/F Biogest 1TID A/F Capsule Vatapy1 TID A/F</p> <p>Externally</p> <p>ASD with mupirocin ointment on daily basis 4th day Jaloukavacharanam done in osteomyelitis area. *GugguluTiktakam Gritam</p>	<p>First 4 days pain persist. Wound is clean Healing started Osteomyelitic changes persist</p>
21/8/23-27/9/2023	Shilajatu Bhasmam was added	No pain, Healing of the ulcers
27/9/23-18/10/23	Same medicines continued	85% healing of ulcer, edema decreased, discoloration decreased, sensation felt

Table 4. Results after medication.

Before Treatment	After Treatment
Pain - +++	Pain Absent
Blackish Discoloration - +++	Blackish discoloration - +
Ulcer healing - non-healing	Ulcer- Healed 90%
Bone density - weak	Bone Density -Improved

Table 5. Probable Action of Medicines.

Medicines	Benefits	Actions
Guggulutiktakam Kashayam [6]	In non-healing wounds, deep seated wounds, abscess, sinus, and fistula. All types of inflammations, pertaining to connective tissue bones and joints, in skin diseases of vāta kapha predominance	Anti-inflammatory Anti-obesity. Balances kapha and vata at the level of skin and joints
Guggulutiktakam Gritam	Same as above	Good for Dhatu Kshaya



Capsule		Snehanam
Kanmada Bhasma capsules (Shilajit) [7]	Treatment of DM, improves bone strength, arthritis	Rasayanam
Biogest	Reduce infections	Anti -microbial, anti-inflammatory, immunomodulatory property
Grab	Reduces infections, healing of ulcers	Anti-microbial, anti-inflammatory
Capsule Vathapy	Removes obstruction to blood circulation in cerebral, cardiac, and peripheral areas	Muscle relaxant, tones muscles, bones heart and liver

3.1. Discussion

In Madhumeha kapha dosha is increased due to Nidana. Kapha dosha forms a Margavarana to Vata dosha. Here comorbidities are Margavarana and Dhatu kshaya.

- The Vrana which is putrefied, having pus discharge and vitiated blood, tunneled with pain and which takes long time to heal is Dusta vrana
- Diabetic foot ulcer is Dusta vrana formed by the complication of diabetes mellitus on long standing.
- Complete healing can be achieved by managing Margavarana and Dhatu Kshaya
- Guggulutiktakam acts an efficient drug for antimicrobial and wound healing activities.
- Proper Debridement and aseptic dressings should be done to prevent infections.
- Proper administration of Pathya ahara and vihara is very necessary
- The healing of Dusta vrana depends upon factors like Dosha, Dushya, Desa Kaala, Vaya avastha ,Sattva ,Sathmyam, Ahara, Prakruthi etc



Figure 3. Before and After Treatment

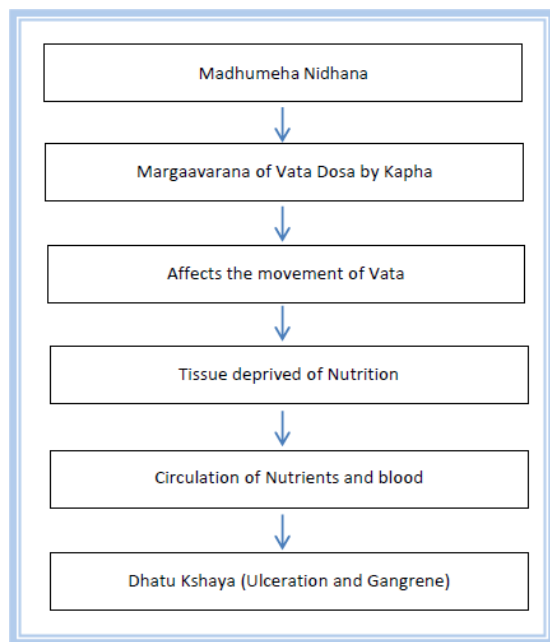


Figure 4. Flowchart of the process

4. Conclusions and Future Scope

Diabetic foot ulcer which was a non-healing type with the evidence of gangrene and osteomyelitis changes, was well managed by ayurvedic medications. The glucose level should be normalized and should be under control which was successfully achieved. Proper dressing should be also done. In this case report, the ulcer which was non healing showed the signs of healing in 2 months. So proper medication and dietary regime with wound care can bring tremendous results.

Conflict of Interest

No, authors do not have any conflict of interest.

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