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Ayurvedic management of Diabetic Foot Ulcer - A Case Study

Dr. Madhuri G. Hegde¹, Dr. Shailaja S. V.²

¹Post Graduate Scholar, ²Professor, Dept. of Shalyatantra, Sri Kalabyraveswaramy Ayurvedic Medical College, Hospital and Research Center, Bengaluru, Karnataka, INDIA.

ABSTRACT

There are 424.9 million adults estimated to currently have diabetes globally.^[1] Diabetic patients have an inherent risk of foot problems. Globally every 30 seconds, a major amputation occurs; 85% of which are preceded by trivial foot lesions.^[2] In Ayurvedic literature, it is explained that *Pidakas* are formed in *Adhoshaka* in patients with *Prameha* due to the weakness of *Rasayanis* of lower limbs.^[3] Such *Pidakas* if neglected over a period of time, without treatment will undergo *Paaka* and form a *Vrana*. Acharya Sushruta has described *Shashti Upakramas* (60 modalities) for the successful management of *Vranas*. Among them this article highlights the use of *Shodhana*, *Kshara Varma*, *Chedana*, *Ropana* and *Bandhana Upakramas* in the management of Diabetic Foot Ulcer/ *Madhumehajanya Dushtavrana* and also the need of *Shastrakarma* (surgical intervention) at the right time. In this study, *Triphala Kashaya Avagaha* and *Pratisaraneeya kshara Karma* for *Vranashodhana*, *Chedana Karma* followed by *Ropana* with *Jatyaditaila* was carried out. The course of treatment carried out brought about *Dushtavranaavastha* to *Shuddhavranaavastha*.

Key words: *Prameha*, *Diabetic foot ulcer*, *Shodhana*, *Chedana*, *Kshara*, *Ropana*.

INTRODUCTION

Diabetic foot is one of the most feared complications since it carries propensity to reach the proportions of a diabetic foot attack, which is described as a point beyond which it is irreversible, the point of overwhelming necrosis. Diabetic foot is characterized by a classical triad of neuropathy, ischemia and infection; glucose laden tissue is quite vulnerable for infection and thus ulcer is formed.^[4] Diabetic foot infection needs prompt attention, accurate diagnostic

evaluation and suitable therapeutic strategies (medical and surgical). The treatment includes Glycemic control, antimicrobial administration, wound care management, surgical interventions in the form of wound debridement/ amputations or specialized therapies such as Negative Pressure Wound Therapy and Skin Grafting.

In Ayurveda classics, Acharyas describe *Pramehajanya Upadravas* which mostly occur in lower limbs due to *Dourbalya* of *Rasayanis*. Acharya Charaka enlists *Upadravas* due to *Prameha* among which *Pootimamsa* (gangrenous) is one of them.^[5] Acharya Sushruta, in the context of *Prameha Pidaka* which is also a *Prameha Upadrava* describes the *Avasthika Chikitsa* of *Prameha Pidakas* which includes *Shastrapranidhana* and *Vranakriyopaseva* for *Vranas* formed preceded by *Paaka*.^[6] Further Acharya Sushruta describes *Shashti Upakramas* for the management of *Vrana*, among which few modalities were selected to treat a case of Diabetic foot ulcer. To treat any case of *Vrana*, *Shanika Shodhana* and *Ropana* plays a very important role. In this study with

Address for correspondence:

Dr. Madhuri G. Hegde
Post Graduate Scholar, Dept. of Shalyatantra, Sri
Kalabyraveswaramy Ayurvedic Medical College, Hospital and
Research Center, Bengaluru, Karnataka, INDIA.
E-mail: hegdemadhuri22@gmail.com
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classical symptoms of *Dushtavrana* like *Durgandha* and *Picchilasrava*, *Triphala Kashaya* was chosen for *Shodhana*^[7] in the form of *Avagaha* followed by *Pratisaraneeya Kshara Karma* for further *Shodhana* of *Dushodhya Vrana*.^[8] *Kotha* or *Pootimamsata* which was noted during the pathological process of the *Vrana* in this case was treated with *Chedana Karma*^[9] followed by *Ropana* with *Jatyadi Taila*^[10] and *Bandhana*.

CASE REPORT

A 75 year old male patient visited Shalyatantra OPD of SKAMCH & RC, Bengaluru presented with complaints of wound in the plantar aspect of right foot with pain and mild pus discharge since 3days. He also complained of generalized weakness along with increased frequency of micturition since 10days.

H/O present illness

Patient was apparently healthy 10 days ago. Gradually he developed painful swelling in the plantar aspect of right foot along with generalized weakness and increased frequency of micturition. He neglected this condition.

After a week the swelling in right foot spontaneously opened with pus discharge causing a painful ulcer in the plantar aspect of right foot which extended upto the dorsal aspect of great toe. Patient experiences pricking type of pain which is continuous. Pain gets aggravated while walking and during night time. Patient approached S.K.A.M.C.H & RC, Bengaluru for the same.

Purva Vyadhi Vruttanta

- K/C/O Type II Diabetes Mellitus since 8 years and is on regular medication.
- Not K/C/O HTN/Thyroid disorders/other systemic disorders.

Koutumbika Vruttanta

All family members are said to be healthy.

Vayaktika Vruttanta

- Diet - Mixed, Atimadhura, snigdha, mamsaahaara

- Appetite - Reduced
- Sleep - 5-6 hours, disturbed due to pain, Diwaswapna ~1hour
- Micturition - 7-8times during day and 3-4times during night
- Bowel - Regular, once in a day.
- Habits - Smoking; about 1 packet of beedi/day, for 45years. (stopped since 5 years)
- Tea 3-4times a day.

Rogi Pareeksha

General examination

- Temp - 98.6°F
- Pulse - 74 bpm
- B.P. - 130/80 mm of Hg
- Respiration - 18 cycles / min
- Height - 177 cm
- Weight - 70kg
- BMI - 24.22
- Gait - Normal

Systemic examination

- Cardiovascular system examination - S1 S2 heard, no added sounds.
- Respiratory system examination - Normal vesicular breathing sound heard, no added sounds.
- Per Abdomen examination - Soft, non-tender.
- Central nervous system examination - Higher mental functions, Sensory, Motor, reflexes and Coordination intact.

Vrana Pareeksha

- Vrana Varna - Krishna, Peeta
- Vrana Gandha - Amanojnagandha
- Vrana Vedana - Toda, Bheda
- Vrana Akriti - Vikruta, ativivruta

- Vrana Srava - Picchilapuyasrava

Examination of ulcer

- On inspection
- Size : ~10cm in length, 5cm in width, 1 cm in depth
- Shape: Irregular shape
- Number : 1
- Position : Plantar aspect of right foot extending upto great toe on dorsal aspect.
- Edge : Punched out edge
- Floor : Pale with slough and necrotic tissue around great toe and midsole.
- Discharge : Purulent
- Surrounding area : Oedematous with blackish discolouration
- On palpation :
 - Tenderness : present
 - Edge and margin : Punched out edge, No induration

Investigation

RBS - 552mg/dl

Serum creatinine - 1.07mg/dl

HbA1c - 16.9%

Urine protein - Present (traces)

Urine sugar - Present (4+)

Right Lower Limb Arterial Doppler suggestive of Mild diffuse atherosclerotic in right lower limb arteries. Diffuse subcutaneous edema in right leg and foot region.

MATERIAL AND METHODS

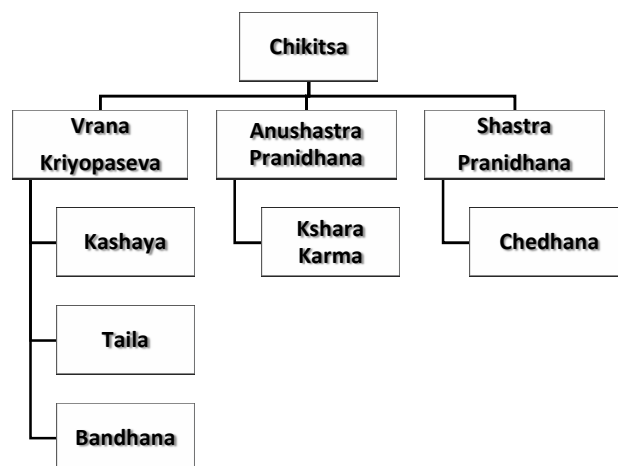
Preparation of Triphala Qwatha

Sufficient quantity of *Triphala Qwatha Churna* was taken and added with 8 parts of water. It was boiled, reduced to 1/4th and filtered using a clean cloth. This was used lukewarm for *Avagaha*.

Preparation of Apamarga Mridu Kshara

The *Panchangas* of the dried *Apamarga* was taken which was burnt with calcium carbonate into ashes, and then ash was allowed to cool. The whole ash was collected and mixed with six times of water and stirred well, and kept undisturbed overnight. This mixture was filtered for 21 times and residue was discarded. The filtrate was heated on low flame till it reduced to half which is called *Ksharajala*. *Ksharajala* is continuously stirred for making a homogenous mixture. Later it is kept on the low flame and continuously stirred till it became a thick paste. Later *Kshara* was collected with little amount of *Ksharajala* and preserved in airtight glass container.

Treatment



Vrana Kriyopaseva

- Triphala Kashaya Shodhana in the form of *Avagaha* for 15-20 minutes daily for 15 days.
- *Jatyadi Taila Pichu* daily for 45 days.
- *Swasthika Bandhana*^[11] *Karma* for 45 days.

Anushastra Karma

- On 12th day slough in the floor of the ulcer was noted for which *Pratisaraneeya Kshara Karma* was done using *Apamarga Kshara* for one sitting.

Shastra Karma

- *Kotha* (Gangrene) of Right great toe was followed by *Chedhana Karma* of Right great toe under Local anaesthesia with preoperative and postoperative

antibiotic cover and analgesics for pain management.

Medications

- Capsule Grab 1-0-1 A/F.
- Capsule Viscovas 1-0-1 A/F.
- Inj. Wosulin 30/70 according to sliding scale.

OBSERVATIONS AND RESULTS



Fig 1: Dushta Vrana Day 1



Fig 2: Dushta Vrana Day 1



Fig 3: After kashaya shodhana Day 14

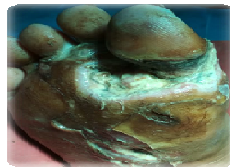


Fig 4: Ulcer with slough Day 15



Fig 5: Kshara karma Day 16

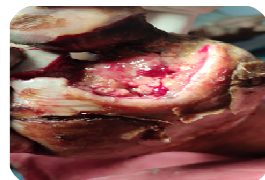


Fig 6: Post kshara karma Day 17

DISCUSSION

Dushtavrana is a *Deerghakalaanubandhi* (chronic) *Vrana*, but any *Vrana* though *Achirakaaleena* (of recent origin) is a *Dushtavrana* if it has most of the *Lakshanas* of *Dushtavrana*. Though the history was of recent origin in this case, it had *Lakshanas* of *Tridoshas* like *Toda* (pricking pain), *Bheda* (cutting pain), *Krishna Varna* (blackish), *Peetavarna* (pale yellow), *Paaka* (suppuration), *Amanojnagandha* (foul smell), *Ativivruta* (extensive), *Sthooloshta* (punched edge) and *Pichilapuyasrava* (pus discharge) thus making it a *Dushtavrana*. *Triphala Kashaya* comprising

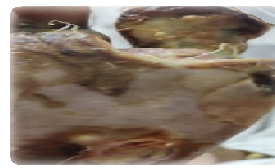


Fig 7: Gangrenous right great toe Day 24

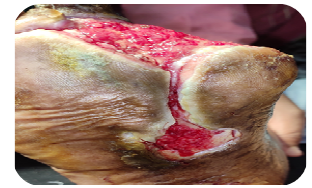


Fig 8: Post Chedhana karma Day 35



Fig 9: Shuddha Vrana Day 40



Fig 10: Ruhyamana vrana Day 45



Fig 11: Ruhyamana vrana Day 45



Fig 12: Ruhyamana vrana Day 45

of *Haritaki*, *Amalaki* and *Vibheetaki* has properties like *Doshaghna*, *Vranaya*, *Shothahara* and *Krimihara* and thus chosen for *Vrana Shodhana*.^[12] Further *Kshara*^[13] having properties like *Shodhana*, *Lekhana*, *Shoshana* and *Tridoshghnata* helped to mobilise slough and also debride the necrotic tissue from the floor of the ulcer. During the course of illness the right toe underwent *Kotha-Pooti Bhava*^[14] (Gangrenous changes) for which *Chedhana Karma*^[15] was done as was the indication for gangrene. Further for *Vranaropanartha*, *Jatyadi Taila* was used whose most of the ingredients have *Shothahara*, *Ropana* and *Vedanasthapana* properties.

CONCLUSION

Diabetic patients have an inherent risk of foot problems. Diabetic foot is a challenging clinical presentation, thus has to be treated accordingly under good glycemic control. The study aimed at highlighting the importance of surgical intervention at the right time so as to avoid complete limb loss along with local management of the wound. Thus principle of management of *Prameha Pidaka* stagewise was

adopted in this case as *Vranakriyopaseva* and *Shastrapranidhana* and treated successfully.

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