

A CASE REPORT ON POST-SURGICAL TREATMENT OF DFU BY NIMBA KALKA LEPA AND JALAUKAVACHARANA

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ABSTRACT

Diabetic Foot Ulcer is a major complication of Diabetes Mellitus and probably the major component of Diabetic foot. A key feature of wound healing is a stepwise repair of extracellular matrix (ECM) that forms the largest component of dermal skin layers. But in certain disorders or physiological insults, it disturbs the wound healing process. DM is one such metabolic disorder that impedes the normal steps of the wound healing process. In such conditions, non-healing wounds of DM can lead to osteomyelitis, sepsis and even death also. *Acharya Sushruta* has explained *Shodana* (purification) and *Ropana* (healing) procedures for wounds. ¹This is the case of 60 years old male, diabetic who presented with complaints of non-healing ulcer on the 1st left toe with swelling, discharge, foul smell, blackish discolouration of skin diagnosed as a diabetic foot ulcer. Wound debridement was done, and post-operative wound management was done under *Ayurvedic* treatment procedures. Significant improvement in wound healing was seen within a short period. In this *case*, *Triphala kashaya*, honey, *Nimba Kalka* and leech therapy was used for their *Shodhana*, *Ropana* properties.

Keywords: Diabetic foot ulcer, *Ayurvedic* treatment, *Triphala kashaya*, honey, *Nimba kalka*, leech therapy

INTRODUCTION

Diabetic complications may be disabling or even life-threatening. According to the International Working Group on the Diabetic Foot (IWGDF), a diabetic foot ulcer (DFU) is a full-thickness wound penetrating through the dermis (the deep vascular and collagenous inner layer of the skin) located below the ankle in a diabetic patient. Eight out of 10 non-traumatic limb amputations are attributable to diabetes, of which 85% are due to DFU. People with foot problems and diabetes mellitus have 15 times the increased risk of undergoing a lower extremity amputation compared to those without diabetes.

The burden of diabetic foot disease may increase in the future due to the presence of peripheral neuropathy and vascular disease in more than 10% of patients during the diagnosis of diabetes and 1 st year after the initial diagnosis of diabetes is a period of danger for foot ulcer and amputation.

In Ayurveda Acharya Sushruta, pioneer surgeons, have mentioned various types of wounds and their management. *Dushta vrana* is an unsolved problem faced by health care professionals in India and abroad. A clean wound in a normal body heals earlier with a minimum scar as compared to a contaminated wound. Therefore, in the present concept, all efforts are directed to keep the wound clean during various stages of wound healing. Such a healing process is called *Shodhana* and *Ropana*.

To achieve good approximation, early healing and acceptable scar, without complications Acharya Sushruta has elaborately explained *Shashti upkrama*. Among them *Rakta Mokshana* and *Vrana shodhana* and *Ropana* are there. ¹ However Sushruta has specifically indicated leech therapy in *Dushta vrana* treatment.

CASE REPORT

This is a case of 60 years old male; a diabetic patient came to NIA Ayurvedic Hospital with the chief complaints of discolouration and foul smell of 1st left toe. Painless ulcer having foul smell with discharge seen blackish discolouration of the ulcer for 1 month

Associated Symptoms: loss of sensation over the feet, difficulty in walking, general weakness.

History of present illness: The patient had noticed blackish discolouration, foul smell with discharge over the 1st left toe for a month. The symptoms developed gradually. He has lost sensation over his left foot. So, he went to the allopathic hospital for consultation and was diagnosed with Diabetic Foot Ulcer. There he had taken some treatment, but no change was seen. So, he decided to seek conservative treatment from Ayurvedic hospital.

History: He was a known diabetic patient and on oral hypoglycemic medications for last 8 years

Personal history: Age – 60 years

Gender – male

Marital status – unmarried

Occupation – retired

Sleep – sound

Appetite – good

Bowel – irregular

Addictions – no

Pulse Rate – 76/ min

Weight – 72 kgs

Height – 5.5ft

Systemic examination: not significant

Local examination:

Site- 1st left toe

Size- length -4 cm, width – 1.5 cm

Number – 2

Edge- inflamed and irregular border

Floor- covered with yellow-white slough and unhealthy granulation tissue

Base- indurated Discharge – pus discharge with foul smell

Tenderness –not present

Roga adhishtanam: Twak, Mansa, Asthi, Sira

Provisional diagnosis: *Dushta vranam*

Prognosis: *Kricha sadhyam*

Examination of the ulcer:

Colour- blackish

Extension – up to metatarsal

Trophic changes in nails such as brittle nail

On palpation:

Skin temperature- cold

Capillary filling test slow

Venous refilling time – 14 sec

Normal popliteal artery pulsation with the movement of the foot

DIAGNOSIS: Diabetic Foot Ulcer

TREATMENT:

After a thorough examination and clinical findings, it is diagnosed as a *Dushta vrana* and the patient was admitted to the surgical ward of NIA ayurvedic hospital. Proper information was provided to the patient about the disease, its complications, and the success rate of the treatment procedures involved. After taking the consent from the patient and his attender, wound debridement was performed on the 1st left toe. the post debridement was treated under *Sushruta's*

Dushta vrana management protocol. Based on the condition *Chedhana, Bhedhana, Shodhana, Ropana* measures from *Sushruta's 60 Vrana Upkramas* was applied. At the end of two months, the wound healed completely with minimal scar formation.

Local treatment

The wound was washed with *Triphala kashaya* daily, made of *Triphala churna* consisting of *Amla, Vibhitaki and Haritaki*. After washing the wound, it was dried and then *Jatyadi taila* was applied daily for a month. And after that *Nimba kalka* mixed with honey was applied in place of *Jatyadi taila* for a duration of the next one month. *Jalaukavacharana* was done once weekly throughout the treatment procedure.



Systemic Treatment

Triphala Guggulu two tablets (two grams) twice a day after meal, *Ayurvedic* anti-diabetic drugs such as *Madhu mehari churna, Prameha prahari*.

Follow up advice

Advice to review every 7 days, *Pathya: Shali, Karvellaka, Amalaki*²

Apathya: oily and spicy foods, salty food, curd, day sleep advised avoiding

OBSERVATION AND RESULTS

Healthy granulation was formed within 10 days. the wound started to heal with contracture in its size by filling the scar from edges and base. After a month the wound size was comparatively reduced with normal skin colouration at the healed area. At the end of two months, the wound was completely healed with minimal scar tissue formation. *Jalaukavacharana* also helped in regaining the sensation over the feet the patient was able to feel tingling sensation and pain when pressure was applied.

DISCUSSION

ROLE OF TRIPHALA KWATHA- *Triphala* by its *Lekhana* and *Shodhana* property stop the unhealthy granulation tissue development and remove the slough in the ulcer and also reduce the slough in the ulcer and also reduce the induration. Its *Ropana* property helps in the formation of healthy granulation tissue. Due to *Tridosha shamak* property of *Triphala*, by the *Ushna virya* of *Haritaki* and *Vibhitaki* it removes the *Srotorodha* and does the *Shoshana* of *Shotha* in and around the *Vrana* and thereby reducing swelling around the ulcer. ³ **ROLE OF JALAUKA-VACHARANA-** A Medicinal leech is a small factory to manufacture biologically active substances which has the following actions normalization and improvement of capillary circulation, endocellular exchange. reducing congestion, inflammation, discharge enhances the rate of healing. The active leech substances block the enzymic process activated and often exceed within inflammation and hyaluronidase

(the factor of permeability) not only improves the blood circulation, but it has the best capacity of capillary/ tissues exchanging. It promotes the reduction of swelling. ³ ROLE OF NIMBA KALKA- Neem helps in reducing inflammation, bacterial invasion, slough, and wound size. *Nimba* has shown significant antimicrobial and anti-inflammatory activity. Anti-inflammatory activity occurs via nimbidin which suppresses the neutrophil and macrophage functions thereby reducing inflammation. This will promote neovascularization, thereby improving circulation by providing more oxygen to the wound site, thus helping in wound healing. ⁴ ROLE OF HONEY- The efficacy of honey as a wound-healing agent is in some types of wounds. Mechanisms of healing methods include hyper osmosis, stimulating cytokine production, producing transforming growth factor- β 1 and etc.⁵

CONCLUSION

DFU is the commonest complication in Diabetes Mellitus. The present case was diagnosed with DFU after wound debridement and post-operative wound management done under *Ayurveda treatment*. *Shodhana* and *Ropana* karma carried with *Triphala kashaya*, *Nimba kalka*, *Jatyadi taila*, and *Jalaukavacharana* showed the significant result in wound healing.

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