IJNRD.ORG ISSN : 2456-4184
INTERNATIONAL JOURNAL OF NOVEL RESEARCH AND DEVELOPMENT (IJNRD) | IJNRD.ORG
An International Open Access, Peer-reviewed, Refereed Journal

INTEGRATIVE APPROACH FOR THE MANAGEMENT OF DIABETIC FOOT ULCER - A CASE REPORT

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ABSTRACT

Non-healing diabetic foot ulcer has always demanded more attention from the surgeon due to the distinct problem it possesses. There is a constant need for the evolvement in the management and this case is one such attempt. A 65-year-old female patient with a history of diabetes mellitus since 20 years presented with a non-healing foot ulcer with Cellulitis since 2 months. She was managed with Ayurveda internal and external interventions for *Madhumehaja vrana* combined with other treatment methods like Maggot debridement therapy, leech therapy. The patient who presented with non-healing diabetic foot with cellulitis changes in right foreleg was found to have better results with combined intervention. The current approach indicates the better outcome with multi-dimensional approach towards diabetic foot ulcer.

1. INTRODUCTION

Diabetic foot is usually caused by a combination of three factors ischaemia secondary to atheroma, peripheral neuropathy which leads to trophic skin changes and immunosuppression caused by excess of sugar in the tissues which predisposes to infection[1]. Approximately 8% of diabetic patients have a foot ulcer and 1.8% has an amputation done[2]. With diabetes being a fast-growing disease, the importance of a better care has far more importance than before. Diabetic foot management in the contemporary science include drainage of pus, debridement of dead tissue with local amputation of necrotic digits and antibiotics[1]. Similarly, in *Ayurveda Shasti Upakramas* (60 interventions) have been mentioned to treat different types of wound based on their presenting symptoms [3]. Both the sciences have described the management in depth, but there are limitations on either side. However, when used together, better outcome was seen in terms of the wound management. In the present case, patient was managed with both Ayurveda and Allopathy conveniently along with other techniques which latest bio-medical engineering can provide.

2. HISTOR OF ILLNESS:

A 65-year-old female patient approached the surgical unit of our hospital on 12/10/2023with a foul smelling, non-healing ulcer over lateral aspect of right ankle joint since 2 months along with swelling in right foreleg. She was a known case of diabetes since 20 years which was not under control due to history of irregularity in taking medications all these years. Patient was apparently normal 2 months before. Later she noticed a spontaneous small opening without any known external injury-over lateral aspect of right ankle joint with mild discharge of serous fluids, which gradually increased leading to a wide-open wound. Wound was painless and spreading in nature. Patient took treatment from a local physician and found minimal relief in leg swelling but

no improvement in the ulcer. Since the wound showed no signs of improvement she has approached our hospital for further management.

3. CLINICAL FINDINGS LOCAL EXAMINATION:

On examination of right lower limb:

O/I: Shiny skin

Swelling +

Brownish discolouration of foreleg

O/P: Pitting oedema +

No tenderness

No raise in temperature.

ON EXAMINATION OF ULCER:

Location: Lateral aspect of right ankle joint

Number: 2

Size : 1) 3.5*2*1.5cm

2) 1.5*1cm

Floor- Sloughed

Edges- Undefined, Margins are poorly defined at the distal ends, thick and fibrosed proximally

Discharge- Serous

Smell-Foul

Surroundings : Blackish discolouration with rise in local temperature

Peripheral pulsation: Dorsalis pedis, Posterior tibial and Popliteal artery pulsation well appreciated.

Bleed on touch- Absent.

GENERAL EXAMINATION:

Appearance- Distressed, Body built & strength- Moderate. Pallor (conjunctiva)- present, Icterus- Absent, Oedema (local)- present in right foreleg, Lymphadenopathy: Absent.

SYSTEMIC EXAMINATION:

Central Nervous System: Conscious and well oriented to time, place and person.

Cerebrovascular system: S1, S2 heard, no added sounds.

Respiratory system- Normal vesicular breath sounds heard.

Hemoglobin was 9.0 gm %

Total count was 14,400Cells/Cumm and ESR was 95mm 1st hour,

Fasting blood sugar 165 mg/dl and Post prandial blood sugar was 285 mg/dl.

Arterial doppler revealed moderate atherosclerotic changes with no obvious obstruction. Chest X ray- normal study

4. THERAPEUTIC FOCUS AND ASSESSMENT

For the above clinical presentation, procedures such as chedana (excision) [4], bhedana (incision) [4], vasti (medicated enema) [5], parisheka (wound wash) [6] are indicated in Ayurveda. Initially the patient was started with Adhoshaka abhyanga (downward massage of the lower limbs with medicated oils), nadi sweda (steam), panchavalkala kwatha pariseka(pouring the medicated decoction on affected limb continuously) and Leech therapy for the right foot externally; Tablet Triphala Guggulu, Tablet Gandhaka Rasayana, Tablet Glucostat, Tablet 4 blud and Syrup Manjishtadi Kashaya, Syrup Khataka Khadiradi Kashaya along with Allopathic medications like Tablet Chymoral Forte,Tablet Linid 600mg, Tablet Zincovit, Tablet Ciplox 500mg, Tablet Orofer XT, Tablet Triglycilarc SR 1mg internally.

The external treatments were done to enhance the blood circulation to the affected part, vaso dilatation with local steam therapy, wound cleansing, auto debridement and to initiate the wound healing thereby reducing the swelling of foreleg. Patient's regular medications for diabetes were allowed to continue. To keep the wound site free from excessive slouging, discharge and soaking which would otherwise hamper the Wound healing. Leech therapy was done on the discoloured site around the ulcer for 5 days, maggot debridement therapy was done for 7 days. After ensuring proper approximation of the wound with healthy granulation maggot therapy was stopped after 7 days. After this course *Vrana shodhana* (wound cleansing) [7] and vrana ropana (wound healing) [8] drugs were used for wound dressing. Patient was advised to continue the same internal medications for a period of 1 month along with daily dressing with Vranaharin taila until the complete healing.

5. FOLLOW-UP AND OUTCOMES

Patient was followed twice a month for 2 months. Maximum reduction in both swelling and blackish discolouration observed. There was no complaints of pain, discharge or any fresh wound.

6. DISCUSSION

The case was managed according to Ayurveda guidelines on different types of wound management along with the use of conventional medicine. Both Ayurvedic and Allopathy science have advantages and disadvantages. Best of each science has been adopted for the better outcome in an integrative manner; hence the disadvantages of each science are left out from the discussion. Confederate Surgeon Joseph Jones, for example, reported that "a gangrenous wound which had been thoroughly cleansed by maggots, healed more rapidly than if it had been left by itself" [9]. In this case therapies done externally along with maggot debridement therapy helped in reducing microbial load as maggots are having Antimicrobial, Anti-inflammatory properties. Further regular dressings with medications has helped to liberally and adequately handle the tissues without compromising the necessities for a healthy wound healing. Absence of discharge and maintenance of wound in a dry state consistently is of prime importance in wound healing [10]. Among the internal medications Triphala Guggulu removes the slough from the suppurated wound along with the foul smell. It also helps in reduction of swelling and pain [11]. Gandhaka rasayana helps in removal of the slough, cleansing and healing of the wound. It is indicated in kaphaja vrana , kushta (skin conditions), prameha (diabetic ulcers) [12]. Khataka Khadiradi kashayam and manjishtadi Kashaya, both contributing the actions of deepana, pachana, lekhana, pakahara, shophahara (anti-inflammatory properties) and rakta prasadana (promotes blood supply) [13]. Allopathy medications like Antibiotics, Anti-inflammatory drugs along with multivitamins helped in reducing the microbial load and swelling there by increasing the ability of wound healing. Thus, the combination of internal and external management was adequate in helping the wound to heal well.

7. CONCLUSION

Management of chronic wounds still poses a huge challenge and many chronic wounds require other unconventional therapies in order to achieve healing. The current integrative approach of adopting both Ayurvedic and Allopathy science along with advanced technique for maintaining the dry state of wound was helpful in managing the diabetic foot ulcer. This poses an interest in further evaluating whether this kind of integrative approaches could give new ray of hope for managing different types of chronic non-healing diabetic foot ulcers.

PATIENT PERSPECTIVE

Patient was satisfied to have improved without undergoing cellulitis complications.

INFORMED CONSENT

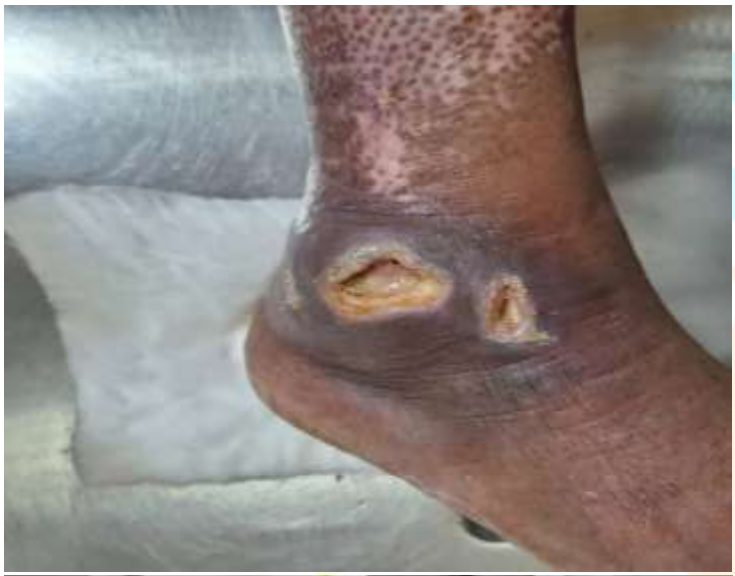
Written permission for publication of this case study had been obtained from the patient.

SOURCES OF FUNDING

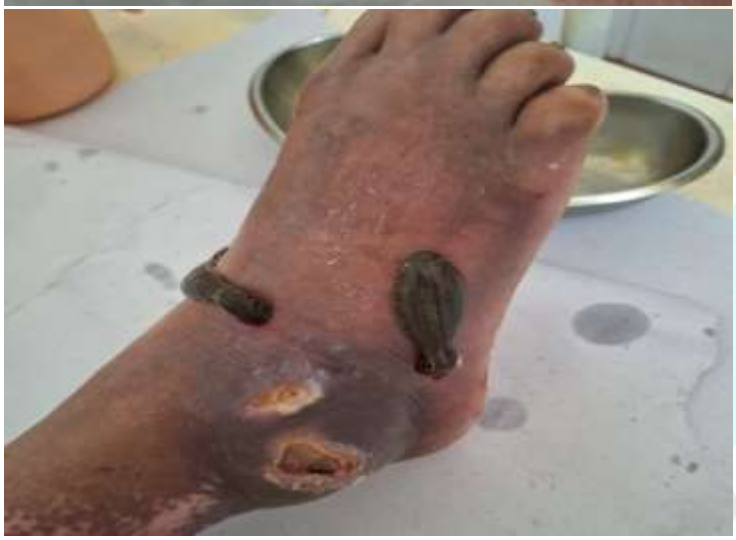
Not declared.

CONFLICT OF INTEREST

None

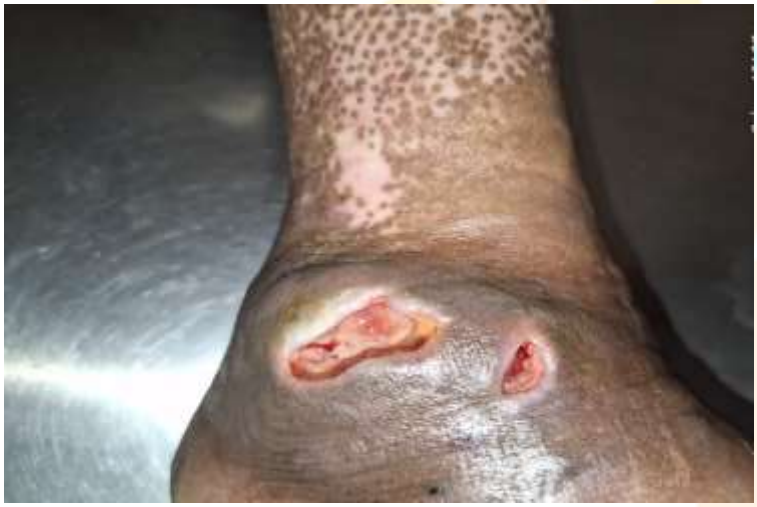


SLOUGHED ULCERS

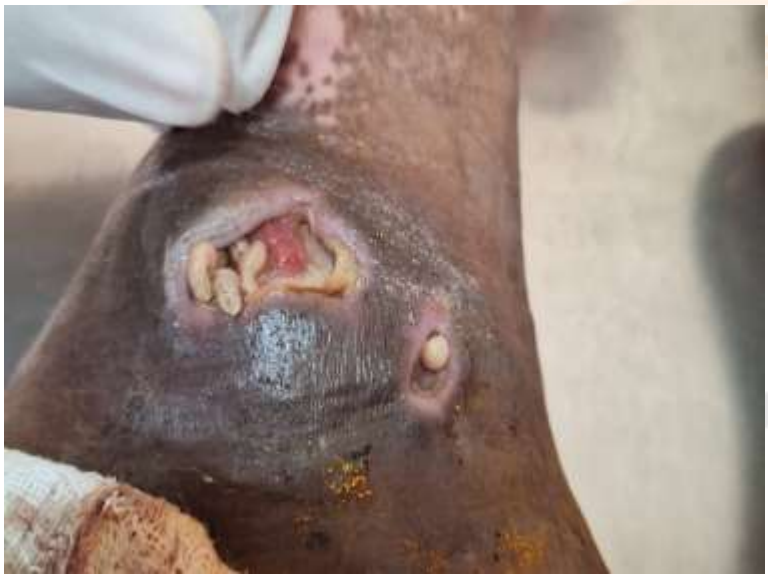


LEECH APPLICATION ON DISCOLOURED SITE

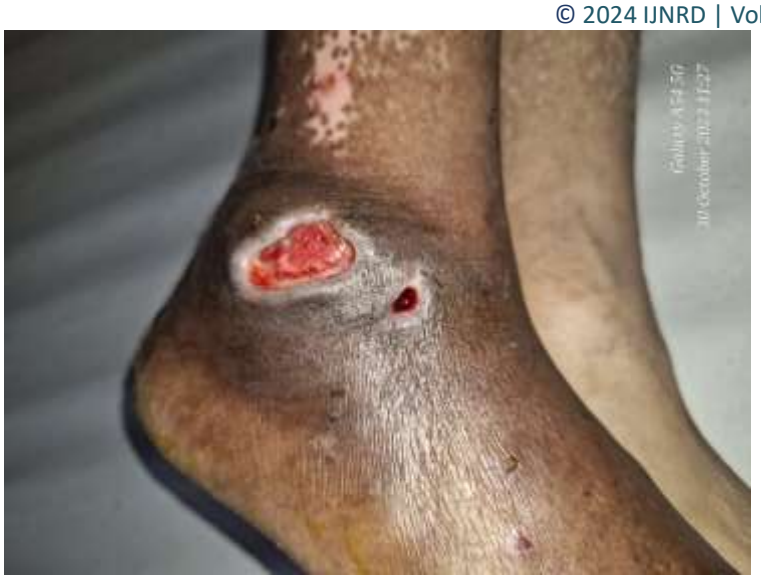
MAGGOT DEBRIDEMENT THERAPY 1ST SITTING



ULCER AFTER 1ST SITTING OF MAGGOTS

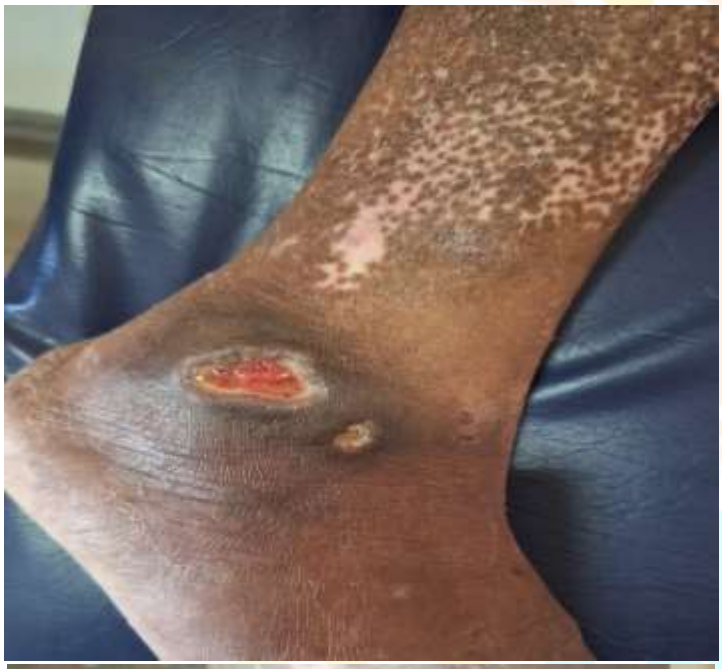


3RD SITTING OF MAGGOTS

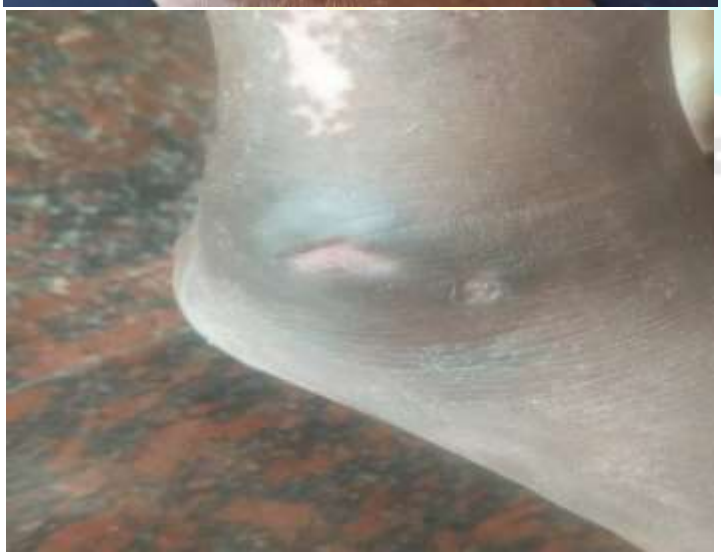


AFTER 3RD SITTING OF MAGGOTS WITH

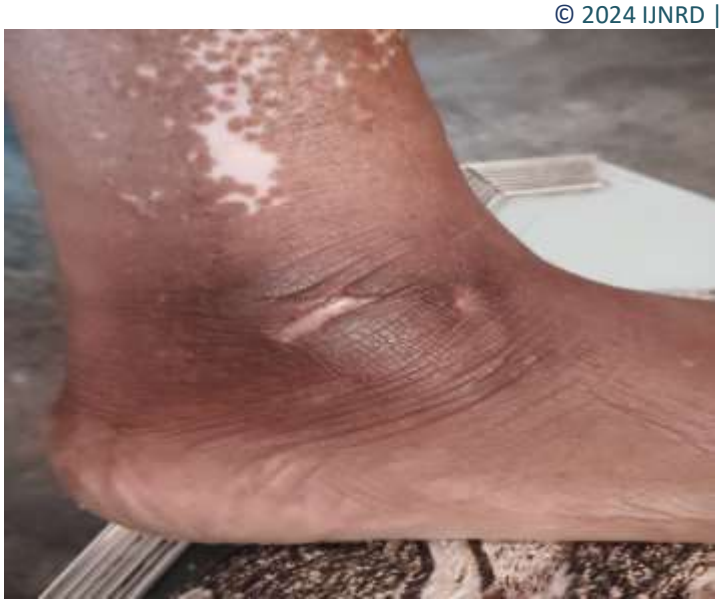
GRANULATION TISSUE



AFTER 1 MONTH



AFTER ONE AND HALF MONTH



HEALED ULCER AFTER 2 MONTHS

COMPLETE REDUCTION OF SWELLING OBSERVED

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