Traditional Therapeutic Approach for the Management of Non-Healing, Chronic Diabetic Ulcer – A Case Report

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INTRODUCTION

Diabetic ulcer is an outcome of the combined effect of diabetes related vascular disease and neuropathy.[1] People prone to diabetes mellitus across the world were estimated to be 131 million in 2000; it is expected to increase to 366 million by 2030.[2] According to several studies, about 25 - 50 % of diabetic patients receive instantaneous amputation at the first visit due to the infection.[3] Slight injury to glucose laden tissue will cause infection which is progressed by an ulcer and it tends to a state of non-healing which has been shown to precede amputation up to 85 % of cases.[4,5]

Diabetic ulcer management in the contemporary science includes drainage of pus, debridement of dead tissue, local amputation of necrotic digits and antibiotics.[6] Siddha system of medicine also has 64 unique categories of internal and external medicines including 32 in each.[7] Both these ends have their own strengths and limitations too. Though treating a non-healing diabetic ulcer is a very big challenge in the current scenario, an integrated approach will give a light on the path of successful management.

PRESENTATION OF CASE

A 27-year-old male patient approached our clinic, on 28. 03. 2017 presented with complaints of foul smelling, necrotizing, and non-healing oozing ulcer in the ventral aspect of the middle finger of the left hand since 2 months. Patient was apparently healthy about 2 months back, but gradually developed pustules since then which appeared over the ventral aspect of the middle finger of left hand. As the pus collection increased, he went to a physician, where they did an incision to drain the pus. Even after incision, pus collection extended to the whole finger. So, he again visited the same physician where the whole finger was incised for drainage of pus. This later became a non-healing ulcer in spite of medication. There was no history of injury before the onset of ulcer. As the wound showed no signs of improvement, he was referred to a vascular surgeon where he was advised to undergo skin grafting.

He came to Siddha hospital for management because of his unwillingness to do that. He was a newly diagnosed known case of Type - II Diabetes Mellitus and presently on insulin Inj. Human Mixtard (15 – 0 – 15 units). He was not a known case of other systemic diseases.

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CLINICAL DIAGNOSIS

Examination of ulcer revealed that its location was ventral aspect of the left middle finger, Size – 8 * 2 ½ cm, Floor – sloughed, pallor in which almost 2 cm of the the skin got necrosed and started forming gangrene, Number - 1, Shape - Irregular and ill-defined, Discharge - purulent and foul smelling, Edges - Undetermined edge, Surroundings - Red and oedematous with black discolouration, Touch to bleed - Absent, Granulation tissue - Absent. General examination revealed that Appearance – Distressed, Body Built – Moderate, Conjunctiva – Normal, Icterus – absent, Lymph Nodes – 1 - 2 axillary lymph nodes were palpable & Non Tender, Temperature – 98.60 F, Pulse – 70 bpm, B. P – 120 / 70 mm of Hg, Respiration –17cycles / min, Height – 169 cm, Weight – 60 kg, BMI – 21 Siddha Envagai Thervu (Examination) revealed that Naa (Tongue examination): Pale, Coated tongue, Niram (Colour of body): Moderate Brown, Mozhi (Speech Examination): Normal, Vizhi (Eye Examination): Normal, Malam (Stool Examination): Pale brown, Soft, Well informed consistency, NeerKuri (Urine Examination): Normal, Straw coloured urine, NeiKuri (Urine Examination with oil immersion): Oil on urine stood like Pearl indicating Kabakuttram, Naadi (Pulse Diagnosis): Kabavaadham.

Systematic examination revealed that cardiovascular system – Audible S1, S2, no added sounds; Central nervous system – Normal mental status, sensory, motor neurological functions were normal; Glasgow Coma scale – Score was 15 with normal level of consciousness, well oriented to time, place and person; Respiratory system – Normal vesicular and bronchial breathing; Abdomen Examination – non-tender, soft. Lab investigations on his first visit revealed that FBS (Fasting Blood Sugar) – 218 mg / dl, PPG (postprandial blood glucose) – 387 mg / dl, HbA1c – 10.5 %.

DISCUSSION OF MANAGEMENT

Intervention		Dose	Adjuvant	Duration
	Day - 1Chukku oil	50 ml	Oil bath	Weekly once
	Day – 2 Vellai ennai	25 ml	Warm water / before food / for purgation	Once (Prior to start of Internal Medicine)
Day 3: Drug holiday	Day – 4 Navakiragavellai	65 mg [bd]	Palm jiggery / after food [salt, tamarind restricted diet] only milk rice, milk kanji, palm jaggery water, pepper water]	3 days
Day - 70 mapaal bath	Day – 8 Chukku oil	50 ml	Oil bath	1 day
Day 9: Drug holiday	Day - 10 1.Tab. madhumega chooranam	2 [tds]	Warm water (before food)	Followed for 3 months
	2. Aavarai kudineer	60 ml [bd]	Before food	

Table 1. Treatment Plan

- Primarily, the patient was prepared for purgation by following the protocol
- Patient was given oleation with 'ChukkuThailam'.
- The next day purgation medicine 'Vellai ennai was given with warm water for purgation
- Third day, the patient was allowed to take rest
- From day 4, 'Navagraha vellai' and internal medicine were administered twice a day with palm jaggery for 3 consecutive days.
- On Day 7, patient was advised to take Omapaal *(Trachyspermum ammi*) head bath.
- On day 8, Oleation with Chukku thailam followed by one-day rest.
- In the meantime, patient was allowed to take his regular medication for diabetes.
- Dressing of wound was carried out with Purai ennai which was preceded by Padigara neer wash from 17th day until the complete healing on 42th day.
- Later the patient was advised to follow tablet Madhumega Chooranam and Aavaarai Kudineer for the next 2 months along with daily dressing until the complete healing.

Date	Findings	Intervention	Outcome
28.3.2017	Patient visited and diagnosed as kabavathavirenam [diabetic ulcer]	Allopathic internal and external treatment given started with oral antibiotics and plus insulin	No improvement in wound and in blood sugar level
29.3.2017 to 31.3.2017	Patient was constantly febrile, blood sugar levels and RFT, LFT, CBC were monitored	Siddha internal and external treatment were started along with antibiotics and anti-diabetic drugs continued	Pain and pus discharge slightly controlled
31.3.2017 to 4.4.2017	Decision for sterile dressing daily to reduce wound discharge and for quick healing	Dressing with puraiennai [traditional Siddha preparation]	Blood sugar level well controlled, no discharge and foul smell in the wound
4.4.2017 to 15.4.2017	Satisfactory wound healing, nails in all fingers were removed safely	Siddha internal medication and external dressing	Flickering movement present, slightly able to flex the finger
15.4.2017 to 20.4.2017	He came with complaints of giddiness throughout the day	On 20.4.2017,10.00 am we gave Siddha medication elathychooranam 2gm [od]	After 15 minutes he relieved from giddiness
21.4.2017, 22.4.2017	We advised to take blood sugar levels	F: 60 mg / dl Advice the patient to go to KMC and consult diabetologist to reduce the dose of insulin	He went to KMC and diabetologist tapered the insulin 7 units, now he took 8 units of insulin [bd]
23.4.2017 to 28.4.2017	Wound with healthy granulation tissue filling from below	Siddha internal medication and external dressing done	Wound margins and floor healthy, no discharge and pain get reduced well
28.4.2017 to 5.5.2017	Wound healthy	Siddha internal and puraiennai dressing done	Good skin growth up to 3 cm of left middle finger
5.5.2017 to 10.5.2017	Wound margins and floor were healthy with healthy granulomatous tissue	Siddha internal and external medication given	Pain got fully reduced, no pus discharge, new eukaryotic cells started forming, necrosed tissue got reduced after 3 months the patient was received, wound was completely healed, and there was good healthy skin. He was following siddha medication for diabetes, till date he is following medication for diabetes, for every three months F, PP, HbA1C were monitored Now he is taking only Siddha medication for diabetes, and has completely stopped allopathic medication.

Table 2. Prognosis of Chronic Diabetic Ulcer with Timeline

Figure 1.
1st day Localized Deep Ulcer with Gangrene and Abscess Crosses the Second Palmar Flexion Crease

Figure 2.
45th Day Ulcer Size is Reduced Nearly to First Palmar Flexion Crease with Decreased Exudates

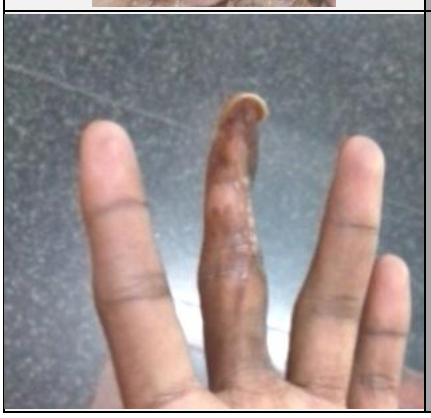


Figure 3.
90th Day Healed Ulcer with Brownish Discoloration of Skin

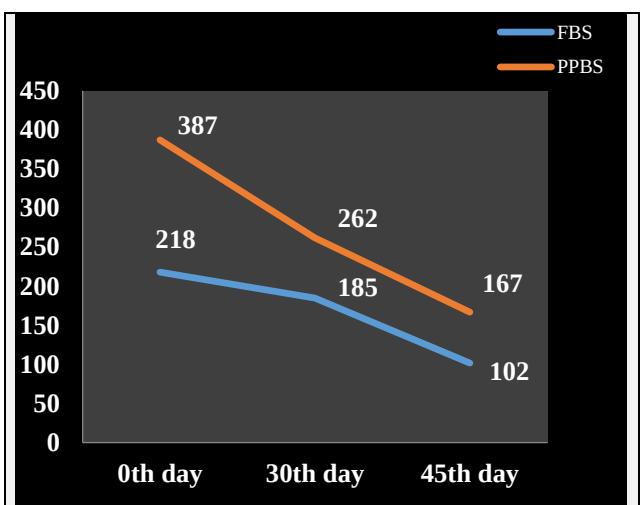
DISCUSSION

Diabetic ulcers are caused by predisposing factors, triggering factors, and aggravating factors. These factors lead to neuropathy and angiopathy finally ischemia, oedema, abnormal immunity and infection. The mechanism of diabetic ulcer is a complicated one. In developing countries, absence of educational training on diabetes and lower financial status contribute to diabetic ulcers, ultimately prompting amputation. The fundamental reasons for neuropathy and angiopathy are hyperglycaemic conditions and other metabolic issues. Thus, keeping up homeostasis of the internal condition and controlling blood glucose are the need of the hour.

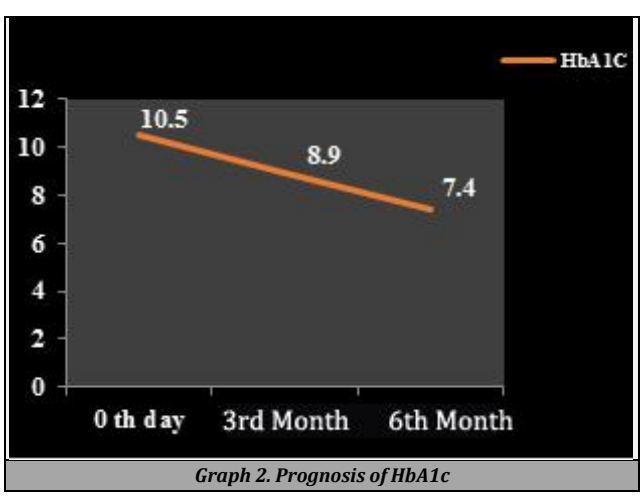
By following this protocol, hyperglycaemias were corrected and HbA1c was 7.4 %, Fasting blood sugar was 102 mg / dl, postprandial blood sugar was 167 mg / dl which was gradually achieved. Oleation therapy and purgation are preparatory procedures which help in strengthening the spiritual energy and maintenance of uyirthathukkal (vatham, pitham, kabham) in its proportion.

Navagrahavellai is a siddha proprietary medicine for stabbing pain and wounds. By using this medicine and repeated dressing with puraiennai which was preceded with padigaraneer the ulcer had undergone transformation from inflammatory phase to granulation phase within 6 days of siddha medication (28. 3. 2017 - 04. 04. 2017). Scabs began to form on the 6th day. Madhumegachooranam, a avaraikudineer boosts the maintenance of homeostatic condition. So granulation became evident which then gradually grew and covered the wound bed. On follow ups, there was no relapse of ulcer and the finger had maintained the mobility.

According to the literature, deranged pitha humour leads to incidence of Madhumegam. (Diabetes mellitus). In this case affects to Siddha scenario, increased pitha humour affects kabhahumour which in turn vatha humour. Since, the humour derangement changes from pitham to kabavatham, diabetes develops its complication in due course. Ennai Muzhukku (Oleation therapy) was a preparatory procedure which helped in strengthening the spiritual energy and maintenance of Tridosha in its proportion.[8]



Graph 1. Prognosis of Blood Sugar



Graph 2. Prognosis of HbA1c

As mentioned in "VaithiyaSaaraSangraham", Purgative medicine was included in the protocol next to oil bath for the purpose of balancing vitiated vatha humour which prevented the spreading nature of wound and enhanced its healing

reaction. Herbo-mineral drugs have many advantages like more efficacy in minimum dose, quick action, prolonged shelf life and palatability.[9]

Hence, we prefer "NavagrahaVellai" as our primary drug for wound healing. According to the literature, astringent based drug promotes the wound healing property. Our external drug of choice "PuraiEnnai" has many ingredients with astringent and wound healing properties; this plays a vital role in good prognosis. Thus, the combined therapy of both internal and external medicines will help in good prognosis of diabetic ulcer.

CONCLUSIONS

This current study shows a good prognosis in a chronic non-healing diabetic ulcer treated with both internal and external integrated medicines. This also creates an interest in treating non-healing ulcers with the other higher order medicines meant for wound healing.

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