www.ijacare.in ISSN: 2457-0443

INTERNATIONAL JOURNAL OF AYUSH CASE REPORTS (IJA-CARE)

Management of Non-Healing Ulcer with topical application of *Marham-i-'Asal* - A case study

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Abstract:

The wounds which fail to progress through a timely sequence of repair or that proceed through the wound healing process without restoring anatomic and functional integrity are referred to as chronic non-healing wounds. This study was conducted on a 50-year old male patient with a painful non-healing ulcer on the medial malleolus of the left lower limb caused by the use of hot water bag during harsh winter in Srinagar. The size of the wound was 2x2 cm on assessing the wound profile. The wound was treated with the application of an ointment made with the combination of powder of *Astragalus sarcocolla* and Honey in equal amounts. The ointment was applied twice a day on the wound for 20 days. After 7 days of daily application, there was a considerable reduction in the size of wound and significant improvement in other symptoms like pain and tenderness. The ulcer was completely healed in a time period of 21 days. The present case reports that, the ointment prepared with *Astragalus sarcocolla* and Honey is a cost effective treatment for chronic non-healing wound.

Key words: *Astragalus sarcocolla*, Honey, *Marham-i-'Asal*, Non-healing ulcer, Unani medicine.

Received: 16.04.2021 Revised: 04.05.2021 Accepted: 10.06.2021 Published: 28.06.2021

Quick Response code

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Introduction:

Wound is a breach in the normal tissue continuum, resulting in a variety of cellular and molecular sequelae. The term generally applies to more superficial forms of tissue damage, whereas the term injury is used for damage to deeper structures.[1] When the process of healing does not take its normal course, the problems of under healing or over healing occur. The wounds which fail to progress through a timely sequence of repair over a period of three months or the wounds that proceed through the wound healing process without restoring anatomical and functional integrity are referred to as chronic non-healing wounds.[2]

In Unani System of Medicine *Jarahat* (wound) is defined as breach in the continuity of the soft tissue that after healing leaves *Khatam* (scar) for life.[3] This resembles closely with the modern definition (i.e., the scar is made up of a cellular connective tissue devoid of inflammatory infiltrate, covered by intact epidermis. The drug or agent, that heals or dries the wound, used in the Unani system of medicine are entitled under the terms of *Mudammil-i-Quruh* and *Mumbit-i-Leham*, *Qabiz* and *Mujaffif-i-Quruh*.[4-5] For the management of the wounds, animal products, minerals and plants and their extracts having styptic property in nature, have immense potential of wound healing e.g. *Aloe barbadensis* L., *Commiphora myrrha* Engl, *Quercus infectoria* Olive, *Dracaena cinnabari* Ball, *Dorema ammoniacum*, allum, *Pinus longifolia*, *Shorea robusta*, hydrated magnesium Silicate, honey, *Boswellia serrata* Roxb, *Astragalus sarcacola* Dymoc, Zinc Oxide.[6-8] Over the years many remedies have been used to facilitate and promote normal wound healing process. There are a number of ointments (*Marham*) having wound healing property like *Marham-i-Ushaq*, *Marham-i-Misri*, *Marham-i-Safeda Kafoori*, *Marham-i-'Asal* etc. which are mentioned in classical Unani literature. *Marham-i-'Asal* prepared with *Asal* (honey) and *Anzaroot* (*Astragalus sarcocolla*) gum resin, has been selected for wound healing property in the management of a chronic non-healing wound, caused by excess use of hot water bag during harsh winter in Srinagar, Kashmir.[9]

Case History:

A 50-year old male patient was approached in OPD, RRIUM, Srinagar, in the month of July 2020 with the chief complaint of painful non-healing ulcer on the medial malleolar region of left lower limb from 5 months. According to the history given by the patient, during the harsh 40-day winter period of Kashmir, starting from December 21st to January 31st, he had suddenly developed a bulla in the medial malleolar region because of the excessive use of a hot water bag (commonly used in this region to combat cold) which subsequently ruptured and resulted in the formation of an open wound. The ulcer was associated with pain which increased with the movement of ankle joint and on walking, thereby affecting the day to day activities of the patient. Before visiting the OPD with chronic non-healing ulcer, the patient had received various topical and oral antibiotics for above five months with no satisfactory result. There was no history of discharge from the wound. The patient had no history of hypertension, metabolic disease, tuberculosis etc. The past medical and surgical history was non-significant. The patient had no relevant family history of any kind of chronic ulcer.

Examination of patient:

On examination general condition of the patient was stable. Vitals were within normal limit, with BP: 124/80 mmHg, heart rate: 76/min, respiratory rate; 18/min and no abnormality was detected through systemic examination. The local examination of the ulcer was done to elucidate the wound profile (Table-1.) Before starting the procedure

patient underwent through some precautionary lab investigations like complete blood count (CBC), erythrocyte sedimentation rate (ESR), fasting blood sugar (FBS), Blood Urea, Serum Creatinine (Table- 2.)

Table-1: Wound profile:

Characteristic	Findings
Inspection	
Site	Medial malleolar region of left lower limb.
No. of wounds	One
Size of wound(measured using scale)	2 x 2 cm^2
Edges	Sloping
Floor	Yellowish slough with unhealthy granulation tissue.
Discharge	Discharge absent
Surroundings	Normal
Palpation	
Local temperature	Not raised
Tenderness	Present
Margins	Normal
Base	Malleolus
Bleeding on touch	Absent
Pulsations	Pulsations present (posterior tibial artery pulse and dorsalis pedis artery pulse)
Ankle-Brachial Index	1.2

Table-2: Laboratory Investigations:

Laboratory Test	Observed Value	Reference range
WBC	4.4	4.8-10.8 KmcL
RBC	4.58	4.7-6.1M/mcL
HgB	14.6	14-18 g/dL
HCT	44.5	42-52%
MCV	96	80-100fL
MCH	29.8	27.0-32.0pg
MCHC	33.5	32.0-36.0g/dl
RDW	12.6	11.5-14.5%
PLT	160	150-450K/mcL
Neutrophil	50	33-73%
Lymphocytes	27.5	13-52%
Monocyte	8	0-10%
Eosinophil	2	0-5%
Basophil	1	0-2%
ESR	21	0-22mm/hr
FBS	89	70-110mg/dL

Blood urea	15.6	10-20mg/dL
Serum creatinine	0.8	0.6-1.2mg/dL
Sr. cholesterol	188	< 200 mg/dL
Sr. Triglycerides	139	<150 mg/dL
Sr. HDL	45	40 mg/dL or higher
Sr. LDL	90	<100 mg/dL

Therapeutic intervention:

Collection of materials:

50 gm *Anzaroot* (*Astragalus sarcocolla*) was obtained from Unani Medicine Market in Srinagar and honey (50gm) was obtained from an apiculture vender.

Method of Preparation:

The 50 ml honey was boiled after adding some water and filtered. The 50gm of *Anzaroot* (*Astragalus sarcocolla*) was pulverized into a fine powder and then mixed with filtered honey to make an ointment like consistency.[9]

Procedure:

The treatment was commenced on the first visit to the OPD. No oral medications were prescribed. The wound was cleaned by normal saline, followed by application of the mixture of '*Asal* and *Anzaroot* on the wound using a sterile applicator, which was then covered with thin sterile gauze pad and patient was advised to do the same twice a day, in the morning and evening for 20 days. On every follow-up visit, which was done after every 7 days, a photograph of the wound was taken. (Fig- 1.)

Result and Discussion:

In this study Honey and *Anzaroot* was used to prepare ointment (*Marham-i-'Asal*). Honey has been used since ancient times as an agent that hastens wound healing process due to its potent antimicrobial activity. It also has anti-oxidant, anti-inflammatory properties. Besides this, the viscosity of honey provides a protective barrier to prevent infection.[10] There are many report of honey being very effective as dressing of wounds, burns, skin ulcers and inflammations. The anti-bacterial properties of honey speeds up the growth of new tissue to heal the wound.[11] *Anzaroot* is a reddish yellow, bitter gum resin, obtained from *Astragalus sarcocolla* Dymok, which has desiccant, wound healing and anti-inflammatory properties and is used to treat wounds and inflammations.[6] A study conducted on the *Astragalus sarcocolla* also demonstrated the antimicrobial activity against Gram-positive and Gram-negative bacteria.[12] There was a visible effect of this ointment (*Marham-i-'Asal*) on the wound healing process. After 7 days of treatment, there was a considerable reduction in the size of the wound and significant improvement in the other symptoms like pain and tenderness. The wound was completely healed by the anti-bacterial and wound healing properties of honey and *Anzaroot* in a time period of 21 days without leaving any scar.

Fig-1: Showing chronic Non-healing ulcer and its recovery at different stages of treatment

Conclusion:

Medicinal plants are being used since times immemorial, as a first line of treatment for trauma, infection, injuries etc. This case study demonstrates successful treatment of a non-healing wound with the topical ointment made with *Astragalus sarcocolla* and Honey without any adverse reactions. The results revealed promising wound healing property of *Astragalus sarcocolla* and Honey because of their potent antimicrobial activity. This might prove to be an efficacious wound healing ointment in case of chronic wounds of different genesis. Further case studies / trails need to be done in future to elaborate the activity of this ointment.

Acknowledgement:

Authors duly acknowledge the Assistant Director In charge, clinical and non-clinical staff of RRIUM, Srinagar, for their continued cooperation throughout the study.

Consent of the patient:

The consent of the patient was taken on a written consent form, after duly explaining the procedure of the study to the patient.

Limitation of Study:

The study was not carried out in an inpatient setting, moreover the results cannot be generalised.

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Conflict of interest: Author declares that there is no conflict of interest.

Guarantor: Corresponding author is guarantor of this article and its contents.

Source of support: None

How to cite this article:
Kalam MA, Alam MT, Farooq F. Management of Non-Healing Ulcer with topical application of *Marham-i-'Asal* Ointment - A case study. Int. J. AYUSH CaRe. 2021; 5(2):78-83.