

Clinical Efficacy of Leech Therapy in Non-Healing Bed Sore: A Case Study

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Abstract

Introduction - A Bedsore refers to damage to the skin, muscle, and subcutaneous tissue caused by pressure, shear, or friction. It often occurs in the bony protuberance. It is the most common complication of long-term bedridden patients such as those suffering from coma & paraplegia.

Method - The study was an observational single-case design wherein a female patient of 60 years K/C/O Diabetes mellitus for 10 years and with ongoing medication presented with complaints of right hemiplegia for 7 months and loss of speech. She also complained of bedsores in the Right gluteal region since 3 months.

Result – *Jalukawacharana* (Leech therapy) was applied upon the bedsore for the duration of 7 days. The Patient has undergone six sittings of leech therapy. *Jalukawacharana* was done in a standard protocol as described by Acharya Sushruta. A substantial reduction in the size of the ulcer was reported following the therapy.

Conclusion - The results in terms of change in the healing of bedsores were evaluated with the help of photographs following every treatment session to mark the level of granulation of tissues and healing of the ulcer. This study aims to evaluate the effectiveness of *Jalukawacharana* in promoting healing processes in *Dushta Vrana* (non-healing ulcers).

Keywords : *Dushta Vrana* , Bed sore, *Jalukawacharana* , Leech therapy

Introduction

Prolonged nonhealing wounds are those which does not improve within three months or stay in the inflammatory state for a long time and may never heal or may take years⁽¹⁾. A pressure ulcer is a condition caused by pressure or sheer stress applied to the body surface for the certain period of time, resulting in cutaneous necrosis due to blood flow insufficiency. In Ayurveda, these non-healing wounds are termed as *Dusta Vrana*. It presents with symptoms such as excessive foul odor, putrid blood and pus discharge, and continuous oozing of discharge. *Dushta Vranas* also have a cadaverous look and are noticed by extreme pain and burning sensation. Besides these swelling, redness, itching, and pustules are seen around the wound. There will be amorphous secretion of impure blood. The *Varna* will remain unhealed for a prolonged period⁽²⁾. One of the popular treatments for *Dusta Vrana* is *Jalukawacharana*. The procedure of *Jalukawacharana* has is described by Sushruta which is used even in present time^(3,4). *Raktamokshana* is the main panchakarma procedure advised in *Raktaja Vikara* to throw out the impure blood. *Jalukawacharana* (leech therapy) is best due to its high efficacy, safety and considered most unique and effective method of *Raktamokshana*. In Modern science, *Jalukawacharana* is termed Hirudotherapy. It is a medicinal leech therapy, which is one of the conventional methods to treat various kinds of diseases. Hirudo medicinalis species is used among all the species of leeches⁽⁵⁾. This study was an observational single-case design wherein a

female patient of 60 years was treated with *Jalukawacharana* in a standard protocol as described by Acharya Sushruta. A substantial reduction in the size of the ulcer was reported following the therapy.

Case presentation

A female patient of 60 years approached with complaints of right hemiplegia for 7 months and loss of speech. She also complained of bedsores in the Right gluteal region for 3 months. The patient was a known case of Diabetes mellitus for 10 years and with ongoing medication.

On physical examination Patient was found immobile and was not able to perform her daily activities, vitals were stable. The patient was catheterized due to loss of bladder hold.

On examination, a non-healing ulcer was present above the right buttock beside the lane of spine at Gluteal region. The size of the ulcer was approximately 15cm×5cm×4cm in size and was oval having regular margins. The floor was covered with offensive slough, and unhealthy tissue, and the base was slightly indurated. The surrounding area around the wound was also indurated. A slight blackish discoloration with purulent discharge was present. The ulcer was painful.







The patient was diagnosed to have *Pakshagata* along with *Dusta Vrana* and the *Vrana* was treated with *Jalukawacharana* and along with oral medications having *Vranashodhan*, *Vranaropan*, *Raktashodak*, *Raktaprasdak* properties, *Mahamanjishtadi Kwatha* 40 ml BD empty stomach, *Arogyavardhini Vati* 2 BD and *Triphala Guggul* 2

Case Report

BD was given. After regular *Jalukawacharana* and with oral medication, discharge was significantly reduced and the wound healed significantly. The patient has undergone six sittings of *Jalukawacharana* on the gluteal region. A photograph was taken every time after the completion of one treatment session.

The consecutive photographs taken after the treatment session were compared with the previous treatment session and the status was able to demonstrate the reductions in the size of bedsore and granulation started within. This marked a substantial improvement of the wound (bedsore) following leech therapy compared to the before treatment session.

Follow-up and observations

Sr. No.	Photo	Edge	Size	Discharge	Bleeding	Description
Fig.1 29 August 2022		Undermined	More than 10 cm	Profuse and continuous	No bleeding	Deep with granulation tissues were absent. Continuous pain, burning and itching were present.
Fig.2 4 Sept. 2022		Undermined	More than 10 cm	Profuse and noncontinuous	No bleeding	Deep with granulation tissues were absent. Continuous pain, burning and itching were present.
Fig.3 15 September 2022		Sloping edge	Decreased upto 8 cm	Less discharge	No bleeding	Granulation tissues present. More localized and often burning sensation
Fig.4 22 Sept 2022		Sloping edge	Decreased upto 8 cm	Less discharge	No bleeding	25 - 50 % wound surface covered with granulation tissue Little Localized and sometime felling of burning
Fig.5 1 October 2022		Sloping edge	Decreased upto 6 cm	No discharge	No bleeding	More than 50% wound surface covered with granulation tissue Upto 25% wound surface covered with slough tissue
Fig.6 8 October 2022		Sloping edge	Decreased upto 6 cm	No discharge	No bleeding	More than 50% wound surface covered with granulation tissue No discharge No slough tissue

Discussion:

With the help of *Jalukawacharana*, the expulsion of toxic blood takes place, and local vitiated doshas are removed. This provides fresh blood & boosts wound healing by the formation of newer tissues. *Jalukawacharana* has peripheral vasodilation effects, which improves blood circulation and corrects ischemia, thus encouraging wound healing.

The leech saliva contains unique properties, including anticoagulants such as hirudin, calin, kallikrein, hyaluronidase inhibitors, histamine-like vasodilators, collagenase, and poorly described anesthetic and analgesic compounds⁽⁶⁾. These properties of leech saliva help in reducing the size of ulcers and promote healing. In this study initially, bedsores had irregular margins, and the floor was unhealthy, filled with exudates (Figure 1). After *Jalukawacharana* the wound bed had reduced ulcer size, the edges were uneven, and the floor was unhealthy, with little granulation tissue visible at the wound margins. (Figure 2). The ulcer demonstrated an apparent healing process by the fourth month, culminating in a smaller ulcer with regular edges and a smooth and granulated floor. Finally, a non-healing bedsore was properly healed by the end of two months. The sloping edge appeared as the ulcer started healing progressively (Figure 3). The bedsore in (Figure-4) had a sloping edge, which was decreased up to 8cm. There was no discharge and the pressure ulcer healed up to 55%. In (Figure 5) the size of the ulcer was reduced to 6 cm and the ulcer healed up to 60%. In (Figure 6) the healing of the ulcer was up to 70% and observed the space was filled with new tissues. Ayurvedic Classics described the treatment protocol for *Dushta Vrana* indicating that it should be treated by *Raktamokshana* (Bloodletting)⁽⁷⁾. This Case shows that *Jalukawacharana* is highly effective in the treatment of bedsores (non-healing ulcers).

Conclusion -

Ayurveda has explained in detail the causes and presentation of *Dusta Vrana* where of amongst the treated for it was *Raktamokshana* in the form of *Jalukawacharana*.

Jalukawacharana is a noninvasive procedure that ensures quicker recovery of wounds and is economically effective for patients as well. *Jalukawacharana* when followed with proper technique is effective as we see a positive result in this case. It is a simple method for treating non-healing wounds.

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Conflict of Interest: Nil

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