



Case Study

ROLE OF LEECH APPLICATION WITH AYURVEDIC MEDICATION IN THE MANAGEMENT OF NON-HEALING WOUND

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<p>Article info</p>	<p>ABSTRACT</p>
<p>Article History: Received: 19-02-2022 Revised: 28-02-2022 Accepted: 09-03-2022</p>	<p>Wound is breaking in the continuity of any bodily tissue due to external action, by cut, bruise, or hematoma. From the time of <i>Vedas</i> wound and its management is one of the challenging task with which health science is dealing. A chronic wound is the wound that does not heal in an orderly set of stages and in a predictable amount of time or wounds that do not heal within three months are often considered chronic. There are many factors involve in healing of any wound. All factors should present at correct time to heal any wound but absence of any factors leads to delayed wound healing or non-healing wound. Modern science has explained in wound healing it involves Multiple cell actions and extracellular matrix and soluble mediators such as growth factors and cytokines. According to science wound dressings are conventionally only applied to shield the wound from external contamination so they don't have any involvement in wound healing. In advanced era technology related to wound healing is developing rapidly. In Ayurveda <i>Acharya Sushruta</i> described various therapies for wound management i.e., <i>Shashti Upakrama</i>. One of them is <i>Jalaukavacharan</i>, leech application on the wound site. As leech contains various chemicals in their saliva, this chemical helps in reducing the blockage in the capillaries and improves micro- circulation. Here is a case study of patient suffering from non-healing wound treated with leech application.</p>
<p>KEYWORDS: Wound, Leech, <i>Jalauka</i>, Dressing, Debridement, Graft</p>	

INTRODUCTION

Ayurveda is a science which has explained 8 different branches in which there are different managements. Shalyatantra is one of the 8 branches.

Shalyatantra is one of the important branches of Ayurveda in which surgical and para surgical techniques has described for management of various diseases. Surgery (*Shalyatantra*) branch of *Ashtang Ayurveda* revolves around 'wound'. Surgeon either has to create the wound during surgical procedure or treat the wound occurred due to trauma, vitiated *Dosha*. Wound may be acute or chronic.

Wound healing is a mechanism whereby the body attempts to restore the integrity of the injured part.

There are many factors that have effect on wound healing such as site of wound, certain medications, bacterial infection and nutritional deficiency. A chronic wound may be defined as one that failed to heal in the expected time for a wound of that type, which is less than 3 weeks.

Acharya Sushruta has explained sixty different procedures for the management of wound along with herbal drugs which he has used for local application, and different *Anushastra* is also explained by them. *Jalukavachran* is one of important *Anushastra* explained by Acharya Sushruta. Leech application is a non-invasive para surgical procedure commonly used in medico- surgical condition. US FDA has granted leeches as parasurgical tool to remove congested blood in plastic surgeries and skin graft. Saliva of leeches contains anti-thrombin (hirudin), hyaluronidase, fibrinogen, plasminogen activator, inhibition of platelet aggregation, anaesthetic agents.

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Role of *Jalaukavacharan* in Management of Wounds

Jalaukavachran is one of the important *Anushastra* involve in management of wound. *Jalaukavachran* is a method of *Raktamokshan* (blood-letting). *Raktamokshan* have 2 methods with *Shastra* and without *Shastra*. In *Shastrakrita* it has 2 types- *Siravedha* and *Pracchana*.

Ashastrakrita having *Shringa*, *Jalauka*, *Alabu* and *Ghati*. *Jalaukavachran* is generally applied in initial phase of wound healing.

Raktamokshan suppress inflammatory process and reduces pain at the site of wound. Wound with inflammation, hardness, slough, reddish blackish in colour, tenderness and uneven surface are treated by *raktamokshan*.

Component of Leech Saliva and Their Role

Hirudin- Inhibits blood coagulation by binding through thrombin and it acts as bactericidal also.

Acetylcholine- Vasodilator

Hirustatin- Inhibits trypsin and chymotrypsin

Calin- Inhibits collagen mediated platelet aggregation.

Histamine like Substance- Vasodilator, increases the inflow of blood at the bite site.

Hyaluronidase- That enhances the viscosity of the interstitial fluid for vasodilation effect.

Aesthetics substance- Anaesthetic action.

Case Study Report

AIM AND OBJECTIVES

To study role of *Jalaukavachran* in chronic non-healing wound

Objective

To study probable mechanism of *Jalaukavacharan* in management of non-healing wound.

Study centre

M.A. Podar Medical (Ayu) College and Hospital, Worli, Mumbai-18.

Duration of Treatment: 12 weeks

Study Details

Age: 35 years

Gender: Male

Religion: Hindu

Occupation- Scientist

Diet- Mixed

Chief Complaints

Chronic non-healing wound over left lower leg anterior aspect with seropurulent discharge, slough and foul smell, pain and swelling

Brief History

A 35 year old male patient with case of chronic non-healing wound came to surgical OPD. He had a history of cat bite at left lower leg, which later turned

into infected wound. So, surgical debridement was done for the same. After that, skin grafting was done. But, skin graft was rejected. Then patient came to our hospital for Ayurvedic treatment. Proper cleaning and debridement was done and leech application was done. Leech application was done once a week for 12 weeks, with Ayurvedic medications- Tab. *Sukshma triphala* 2 tab twice a day and *Curcuma longa*.

Local Examination

Site- Left lower leg over anterior aspect foot

Shape- Irregular

Edge: Irregular and fibrous tissue

Floor- Unhealthy with less granulation tissue and slough

Discharge- Seropurulent discharge

State of *Vrana*- *Dushta Vrana*

Treatment Plan

After the assessment of the wound proper cleaning and debridement of wound was done. Leeches were applied. When leeches left the site by their own wound was cleaned and dressing was done and bandaging done. Dressing was done alternate day and leeches were applied once a week. Patient was advised Ayurvedic oral medicines as described in material and methods.

MATERIAL AND METHODOLOGY

Medicines Used for Dressing

Normal saline used for cleaning the wound then *Vrana ropak tail* was applied and wound is closed. *Jalaukavachran* done once a week for 12 weeks.

Medicines Given Orally

Tab. *Sukhma Triphala* 2 Tab BD

Curcuma longa BD

RESULTS

It was observed that wound was healed completely within 20 weeks.

DISCUSSION

Medicinal leeches used for this study. These leeches are thin and tiny hairs emerald colored.

When the leech being fed, they inject salivary component that inhibit both the platelet aggregation and the coagulation cascade, thus releases the congestion and induces neo-vascularization.

Leeches injects powerful anesthetic and anti-inflammatory enzymes while sucking the blood so that, patient doesn't feel pain.

Leeches secretes hirudin in its saliva which has anti coagulant property and powerful blood thinner which break up pooled blood for better extraction from the affected part. It clears blockage and slowly improves regeneration of tissue. It improves macro and micro circulation.

CONCLUSION

There was significant relief in pain and swelling. Healthy granulation tissue was formed. Wound was completely healed without any local complication.

No any adverse effect noted during treatment.

So, the present study shows that leech application and Ayurvedic medication is a safe, effective and non-invasive modality for management of non-healing wound.

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