



**JALAUKAVACHARNA (MEDICINAL LEECH THERAPY) IN DUSHTA VRANA W. S. R.
DIABETIC FOOT ULCER - A CASE STUDY**

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ABSTRACT

Ancient Indian medicine has a long and wide history but modern medicine has just recently emerged with focusing on their possible modes of action. Jalaukavacharna or Medicinal Leech Therapy or Hirudotherapy is an old technique of bloodletting and is being widely studied by many researchers for possible effects on numerous diseases as Dushta Vrana Ropana, inflammatory diseases, osteoarthritis, various diseases according to different Doshas etc. Detailed description of the Jalaukavacharna and Jalauka is given in Sushruta Sutra Sthana Thirteen. Researchers have described various properties of leech therapy like anti-inflammatory, analgesics, platelet inhibitory, anticoagulant etc. A 42 years old male patient with history of Type 2 DM since 5 years came to Arogyashala Rughalaya and ASS Ayurvedic College Nashik, with the complaints of wound over left foot with pustular discharge and smell accompanied by fever. After thorough debridement, leech therapy was done for 4 weeks, twice per week followed by once every week for 6 weeks. Strict limb elevation was advised along with strict diabetic management. The treatment followed may be adopted in the future for various cases.

KEYWORDS: Wound, Dushta Vrana, Leech therapy, Jalaukavacharna.

INTRODUCTION

In this scenario, modern medicine is on its peak, but nothing can beat Indian Ancient Medicine. Vrana is considered one of the major surgical entities in Ayurveda, and Acharya Sushruta has described detailed principles regarding its etiology, classification, and management under Vrana Chikitsa. A wound which fails to heal properly and develops features such as excessive discharge, foul smell, pain, discoloration, slough, and unhealthy granulation tissue is termed as Dushta Vrana.

Acharya Sushruta described the features of Dushta Vrana as:

“दीर्घकालानुबन्धि पूतिमांससिरायुतम् ।

उत्सन्नमति संकृष्टं दुर्गन्धि च विवर्णकम् ॥”

(Sushruta Samhita, Sutrasthana)^[1]

This indicates a chronic wound associated with slough, unhealthy tissue, discoloration, foul smell, and delayed healing. Dushta Vrana can be correlated with chronic

non-healing ulcers in modern medicine, which commonly arise due to infection, poor vascularity, venous congestion, trauma, diabetes, or chronic inflammation. Such wounds are difficult to manage and significantly affect the patient's quality of life.^[2]

Among the various treatment modalities described in Ayurveda, Jalaukavacharna (medicinal leech therapy) is considered one of the most effective para-surgical procedures for Rakta Dushti and Pitta predominant disorders. Acharya Sushruta included Jalaukavacharna under Raktamokshana Chikitsa and described it as a gentle and safe method of bloodletting, especially suitable for delicate, debilitated, and inflamed patients.

“रक्तमोक्षणानां श्रेष्ठं जलौका”

(Sushruta Samhita, Sutrasthana 13)

Leech therapy helps by removing vitiated blood, reducing local congestion, improving microcirculation, relieving inflammation, and promoting healthy

granulation tissue formation. Modern studies reveal that leech saliva contains biologically active substances such as hirudin, calin, hyaluronidase, and destabilase, which possess anticoagulant, anti-inflammatory, analgesic, and vasodilatory properties.

Therefore, Jalaukavacharana offers an integrative and cost-effective approach in the management of Dushta Vrana. The present case study aims to evaluate the clinical efficacy of Jalaukavacharana in a patient suffering from chronic non-healing ulcer with significant improvement in wound healing and symptomatic relief.

CASE REPORT

A 54-year-old male presented with a chronic non-healing ulcer over the left lower limb associated with pain, discharge, foul smell, and slough formation for 2 months. Jalaukavacharana was performed weekly for 4 sittings along with Ayurvedic internal medicines and local wound care. History of previous treatment at regional medical College was also given by the patient.

Local Examination

Parameter	Findings
Site	Left lower leg
Size	6 × 4 cm
Shape	Irregular
Edge	Inflamed
Floor	Slough present
Discharge	Seropurulent
Tenderness	Present
Smell	Foul smell present

Investigation

Hemoglobin-11.2 g/dL
 Total WBC Count- 14,800 cells/mm³
 Differential Count
 Neutrophils – 76%
 Platelet Count-3.1 lakh/mm³
 ESR-42 mm/hr
 Fasting Blood Sugar- 166 mg/dL
 Postprandial Blood Sugar- 214 mg/dL
 HbA1c- 7.4%
 Renal Function Tests
 Serum Creatinine-0.9 mg/dL
 Blood Urea- 26 mg/dL
 Liver Function Tests
 Total Bilirubin-0.8 mg/dL
 SGOT-28 IU/L
 SGPT-32 IU/L

PAST HISTORY

History of Past Illness: Patient has type II Diabetes Mellitus since 2 years and on continuous medication. No H/O hypertension. No H/O tuberculosis

Personal History

Appetite- Reduced
 Sleep- Disturbed
 Bowel- Regular
 Addiction -Nil

On examination

General Examination

Pulse -78/min
 BP-120/80 mmHg
 Temperature-Afebrile
 Pallor- Absent

Radiological Investigation

X-ray Left Leg S/O No osteomyelitis or bony involvement

Vascular Assessment

Peripheral Pulses-Palpable
 Capillary Refill Time <2 seconds

Treatment

After thorough debridement of the wound on The very first day, leech therapy was followed weekly once for 4 weeks. Along with daily dressing of the wound with Jatyadi Taila. Anti-hyperglycemic drugs were given and Previously with continuous monitoring on blood glucose Level and other blood investigations.



Wound Photos Before and After treatment of Jalukaavcharn and Supportive Management.

OBSERVATION AND RESULT

Wound was because of diabetic foot wound. Thus irregular in shape, with discoloration, slough, Swelling, purulent discharge and smell and unhygienic In nature. After use of leech therapy new healthy Granulation tissue started appearing, wound margins Contracted in healthy manner and there was reduction In slough formation, discharge, smell and discoloration Around the wound. Leech attached with the initial usually painless Bite, and sucked between 5-15ml of blood in the Attachment of 25 to 45 minutes.

DISCUSSION

Sushruta mentioned Raktavisravana in the Cases of Dushtarakta. Jalaukavacharna is the type of Rakta Visravana hence helps to remove Dushta Rakta Which is responsible for various inflammatory Conditions. Sushruta in Chikitsa Sthana Sadhyovrana Chikitsa Adhyaya mentioned Raktamokshana in Prameha and Kushtha Dushta Vrana.^[9] With the advancements of science and Technology the mechanism of leech how it work have Started to be clarified. After the leech bite, the tissues And blood vessels allow access to the hyaluronidase And collagenase enzymes; action of histamine like Molecules leads to vasodilatation; platelet inhibition. Its therapeutic benefits are not from blood removed During the bite but from the saliva which contain Anticoagulants and vasodilators.^[10] Leech saliva includes various bioactive Substances like hyaluronidase which is a spreading Factor and has antibiotic properties. Hirudin a potent Anticoagulant, enables the blood flow by inhibiting Blood coagulation by binding to thrombin. Callin Inhibits blood coagulation by blocking the binding of Von willebrand factor to collagen. Destabilase dissolves Fibrin and has thrombolytic effects. Bdelins has anti-Inflammatory effect and inhibits trypsin, plasmin Acrocin. Acetylcholine is a vasodilator. Eglins are anti- Inflammatory, inhibits activity of alpha-chymotrisin, Chymase, elastase, substilisin and cathepsin G. Factor Xa inhibitors inhibits the activity of coagulation factor Xa. Collagenase reduces collagen. Carboxypeptidase-A Inhibitor increases the inflow of blood.

CONCLUSION

This leech therapy which has been used by our Acharyas since ages, now getting tremendous Recognition because of its quality of removing venous Insufficiency, restoration of venous outflows, pain Management, wound healing in infected-noninfected Chronic wounds etc. Jalaukavacharna is a safe, effective, and economical para-surgical procedure for management of Dushta Vrana. It reduces pain, discharge, inflammation, and promotes healthy wound healing. Detailed study is needed to Evaluate the elaborated effect of leech therapy on Wound healing.

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