



## “A Case study on jalaukavacharan in dustvrana”

**Dr Anju Yadav<sup>1</sup>, Dr. Amit Singh<sup>2</sup>, Dr. Mandakini Dwivedi<sup>3</sup>**

**1. Assistant Professor, Department of Shalya tantra, Chandra Shekhar Singh Ayurvedic Sansthan, Kaushambi, Near Prayagraj , U.P.**

**2. Associate Professor, Department of Balroga, Chandra Shekhar Singh Ayurvedic Sansthan, Kaushambi, Near Prayagraj , U.P.**

**3. Assistant Professor, Department of Shalya tantra, Chandra Shekhar Singh Ayurvedic Sansthan, Kaushambi, Near Prayagraj , U.P.**

**Corresponding Author- Dr Anju Yadav, Assistant Professor, Department of Shalya tantra, Chandra Shekhar Singh Ayurvedic Sansthan, Kaushambi, Near Prayagraj , U.P.**

### **Abstract:**

Chronic wounds (Dustavrana) are challenging to treat due to their prolonged nature and resistance to conventional treatments. Chronic wounds, known as "Dustavrana" in traditional Ayurvedic literature, pose a serious health risk since they take a long time to heal and are difficult to cure. These wounds, which are frequently brought on by underlying illnesses like diabetes, venous insufficiency, or pressure ulcers, are distinguished by their inability to heal through the typical phases. Chronic wounds are characterized pathophysiologically by a higher microbial load, poor angiogenesis, and ongoing inflammation. According to Ayurveda, dustavrana refers to wounds that do not heal even after proper treatment because of Dosha (Pitta, Kapha, and Vata) imbalances, persistent infections, or inadequate wound care. The use of herbal compositions with antibacterial and regenerative qualities, including Jatyadi Taila and honey, as well as Shodhana (cleaning) and Ropana (healing) are examples of therapeutic techniques. An Ayurvedic bloodletting treatment called jalaukavacharan (leech therapy) has been used successfully to treat these wounds. The effectiveness of Jalaukavacharan in wound healing, infection management, and pain reduction is demonstrated in this case study, which looks at a patient with Dustavrana who received the treatment.

**Keywords:** Ayurveda, Dustavrana, Chronic wounds, Jalaukavacharan (leech therapy).

## Introduction:

In Ayurveda, chronic wounds known as Dustavrana are defined as wounds that either do not heal in a timely and orderly fashion or do not show any discernible healing process within the anticipated time frame, which is normally 4-6 weeks. Chronic wounds are frequently characterized by ongoing inflammation, tissue deterioration, and an inability to restore normal skin integrity, in contrast to acute wounds, which heal in a predictable manner.<sup>1</sup> The word "Dustavrana" in Ayurveda is a combination of the words "Dusta" (vitiated or unclean) and "Vrana" (wound or ulcer). It represents a wound that has grown challenging to treat as a result of internal or external circumstances interfering with the body's natural healing process. Numerous underlying disorders, including infections, systemic diseases, or recurrent trauma, can result in chronic wounds.

Vrana is the breakdown, rupture, breakage, or discontinuity of bodily tissue or a body portion. One problem that is commonly observed in surgical practice is Dushta Vrana.<sup>2</sup> A non-healing ulcer, or Dushta Vrana, can impair a patient's condition and result in a number of consequences, including death. Infection, foreign substances, and slough are all potential causes of delayed wound healing. A healthy wound heals more quickly than an infected one. Therefore, keeping the wound clean during the healing process is essential.<sup>3</sup> Achieving good wound healing with little pain and scarring is the primary objective of any surgeon. The treatment of Dushta Vrana involves a range of drugs that are generally categorized as Vrana Shodhana and Vrana Ropana. Acharya Sushruta has elaborately described six types of Dushta Vrana. For Vrana Chikitsa, Sushruta has made reference to Shashti Upakrama (60 wound management techniques).<sup>4</sup>

## Characteristics of Chronic Wounds:<sup>5</sup>

1. **Delayed Healing:** Healing takes longer than expected.
2. **Infection Prone:** often accompanied by illness or microbial contamination.
3. **Necrosis and Slough:** Exudates and dead tissue that impede healing are present.
4. **Underlying Causes:** frequently linked to systemic conditions such as immunological deficits, diabetes, or venous insufficiency.
5. **Recurrence:** high probability of reoccurring if the root problem is left untreated.

## Common Types of Chronic Wounds<sup>6</sup>

1. Foot ulcers caused by diabetes.
2. Bed sores, or pressure ulcers.
3. Leg Ulcers in the Venous.
4. Ulcers in the Arteries.
5. Surgical Wounds That Don't Heal.

According to Ayurvedic principles, systemic disorders, poor diet, poor cleanliness, and imbalances in the Tridosha (Vata, Pitta, and Kapha) are frequently associated with persistent wounds. In order to treat the wound locally and address systemic imbalances, management entails a comprehensive strategy. Do you want to learn more about the pathophysiology<sup>7</sup> Ayurvedic remedies or contemporary Dustavrana management techniques. With a focus on a comprehensive, patient-centered approach, modern wound management incorporates cutting-edge therapies like debridement, negative pressure wound therapy (NPWT), and biologics. Research on plant-based substances and bioactive molecules, which bridge traditional and modern medicine, presents encouraging opportunities to improve the treatment of chronic wounds. To create efficient, integrative methods for treating Dustavrana and enhancing patient outcomes, more multidisciplinary research is necessary.<sup>9</sup>

### **Jalaukavacharan (leech therapy):**

The old Indian medical system included the traditional Ayurvedic practice of jalaukavacharan, or leech therapy. In order to promote healing and equilibrium, therapeutic leeches are applied to the body to remove poisons or impure blood.<sup>9</sup> This technique falls under Raktamokshana (bloodletting), which is a component of Panchakarma, a purification therapy in Ayurveda. The first description of Jalaukavacharana (leech therapy) is documented in Sushruta Samhita published in 800 B.C. Numerous studies conducted recently have demonstrated that leech saliva contains a range of bioactive substances, such as factor Xa inhibitors, anti-platelet (calin), anti-thrombin (Hirudin, bufrudin), antimicrobial, and other properties. An ancient Ayurvedic bloodletting method called leech therapy, also known as jalaukavacharan, has the ability to treat a wide range of infectious, ischemic, and inflammatory illnesses.<sup>10</sup>

### **Purpose and Benefits:**

Conditions involving blood stagnation, inflammation, or toxicity are treated with jalaukavacharan. Typical signals consist of:<sup>11</sup>

- Skin conditions: acne, boils, eczema, and psoriasis.
- Chronic wounds: Diabetic foot issues or ulcers that don't heal.
- Varicose veins: To ease discomfort and increase circulation.
- Joint pain: gout, rheumatoid arthritis, or osteoarthritis.
- Headaches and migraines: When linked to inflammatory or vascular conditions.

### **The therapy is believed to:**

1. Make circulation better.
2. Diminish inflammation in specific areas.

3. Clean the blood.
4. Reduce edema and soreness.

### **Type of Jaluaka:<sup>12</sup>**

Jaluka (leeches) are divided into two primary categories in Ayurveda: Savisha (poisonous) and Nirvisha (non-poisonous or therapeutic) according to their habitat and characteristics. This categorization guarantees that only appropriate varieties are employed for medicinal objectives.

#### **1. Savisha Jaluka (Poisonous Leeches)**

The detrimental consequences of these leeches make them poisonous and unfit for therapeutic usage. They can discharge harmful compounds when they bite, and they are usually found in contaminated or unclean water sources.

##### **Characteristics:**

found in stagnant or unclean water. darker, frequently brownish or blackish in hue. Look sick and move slowly. When applied to humans, it may result in negative side effects as discomfort, inflammation, or edema.

##### **Examples:**

**Krishna:** Leech with a black hue.

**Karbura:** Multicolored spotted leech.

**Alagarda:** Heavy and slow to move.

**Indrayudha:** A multicolored leech that resembles a rainbow.

**Samasarpa:** Has patterns on its body and resembles a snake.

**Gochandana:** Small and shaped like a cow's horn.

#### **2. Nirvisha Jaluka (Non-Poisonous or Medicinal Leeches)**

These leeches are specifically employed in Jalaukavacharan and are safe for medicinal use. Because their saliva contains bioactive components, they are free of toxins and offer therapeutic benefits.

##### **Characteristics:**

found in freshwater bodies such as rivers, streams, and ponds. Olive or greenish in hue. More energetic and smaller. During therapy, cause as little discomfort as possible.

**Examples:**

**Kapila:** Leech with an olive or green hue.

**Reddish-brown** leech, or pingala.

**Shankhamukhi:** Has a nose that resembles a conch.

**Mushika:** Small and like a rat.

**Pundarikamukhi:** Has a mouth that resembles a lotus.

**Saubhruka:** Found in tiny streams and pristine ponds.

**Selection for Therapy<sup>13</sup>**

For Jalaukavacharan, only Nirvisha jalukas are utilized. To verify their fitness, practitioners look at the appearance and behavior of the leeches. The quality and safety of leeches are greatly influenced by the conditions in which they are harvested.

**Procedure**

1. **Preparation:** The patient is examined to assess dosha imbalance and confirm suitability for leech therapy.
2. **Leech Selection:** Medicinal leeches (non-poisonous varieties such as *Hirudo medicinalis*) are selected.
3. **Application:** The leeches are placed on the affected area, where they latch onto the skin and draw out blood.
4. **Duration:** Each session may last 30-60 minutes, depending on the condition.
5. **Post-Therapy Care:** The leeches are gently removed using turmeric or saline. The wound is cleaned and dressed to prevent infection.

**Mechanism of Action<sup>14</sup>** Medicinal leeches secrete biologically active compounds in their saliva, such as:

**Hirudin:** An anticoagulant that stops blood clotting is called hirudin.

**Calin:** A substance that reduces inflammation.

**Substances that resemble histamine:** To enhance local blood flow.

These substances help enhance circulation, reduce inflammation, and accelerate healing.

## Safety and Precautions

- Conducted by a qualified professional in a sterile environment; anemia, hemophilia, pregnancy, and specific immune-compromised disorders are among the contraindications. Improper management can lead to infections or allergic responses.

## Case Details

A 45-year-old man from Bharvari presented to Shalya Tantra OPD on November 23. He had a non-healing ulcer over the dorsum of his right foot, which was accompanied by pus, pain, numbness, and a foul-smelling, bloody discharge. He suffered an ulcer over his right foot in a traffic accident fifteen years ago.

### Patient Information:

- **Age:** 45 years
- **Gender:** Male
- **Chief Complaint:** Six months of a chronic, non-healing ulcer on the left lower leg
- **Associated Symptoms:** Pain, an unpleasant-smelling discharge, and some wound swelling.
- **Medical History:** Ten years of type 2 diabetes mellitus (managed with medication)

### Examination Findings:

- **Wound Characteristics:**
- Dimensions: 6 cm x 4 cm
- Depth: 0.5 cm
- Base: Granulation tissue combined with slough
- Edges: indurated and uneven
- Discharge: purulent with an unpleasant smell

**Local Symptoms:** Tenderness, erythema, and mild edema

**Diagnosis:** Dustavrana, or persistent non-healing ulcer, is based on clinical assessment and Ayurvedic principles.

## Treatment Protocol

### Initial Preparation:

1. To maximize recovery, the patient received Panchakarma preparation along with internal Snehana (oleation) and minor dietary changes.
2. Before beginning leech therapy, the wound was washed with sterile saline and dressed every day.

### Jalaukavacharan Procedure:

1. **Leech Selection:** Leeches (Jalauka) that were fresh, healthful, and therapeutic were selected.
2. **Application:**

In order to prevent direct contact with necrotic tissue, two leeches were put around the wound. Leeches were given 30 to 45 minutes to cling and draw blood spontaneously. Throughout the session, bloodletting (the elimination of the Kapha-Pitta dosha) was evident.

3. **Post-Procedure Care:**

The leeches were cleaned by immersing them in turmeric water after detaching. Herbal decoctions, such as Panchavalkala kwatha, were used to clean the wound before an ointment with a honey base was applied.

**Frequency:** Jalaukavacharan was performed twice weekly for 4 weeks.

## Observations

1. **Week 1:**

- A decrease in purulent discharge and unpleasant odor.
- Slight decrease in pain and erythema.

2. **Week 2:**

- A discernible decrease in the size of the wound (5 cm x 3.5 cm).
- Slough is decreased in granulation tissue that has improved.



### 3. Week 3:

- Significant wound contraction (3 cm x 2 cm).
- Pain and swelling resolved completely.
- Healthy granulation tissue and clean wound bed.

### 4. Week 4:

- The pain and swelling went away entirely.
- The wound bed is clean and the granulation tissue is healthy.

## Outcome

- After 6 weeks of treatment, the wound fully healed, and during the 3-month follow-up, no recurrence was noticed.
- The patient claimed that the therapy had no negative effects and that their quality of life had improved.

## Discussion

The use of Jalaukavacharan, or leech therapy, an Ayurvedic parasurgical technique, in the treatment of Dushta Vrana (chronic, non-healing wounds) is examined in this case study. It is addressed how leeches' anticoagulant, anti-inflammatory, and microcirculatory properties can be used therapeutically to promote wound healing. This strategy is contrasted with traditional techniques, highlighting how well it works to improve wound healing while lowering pain, inflammation, and infection. Jalaukavacharan's multifaceted activity makes it a very good treatment for Dustavrana.

1. **Detoxification:** eliminates poisons and tainted blood (Dosha shodhana).
2. **Anti-inflammatory Effect:** Leech saliva contains enzymes that lessen erythema, discomfort, and edema.
3. **Antimicrobial Action:** Infection is prevented by hirudin and other bioactive compounds.
4. **Enhanced Healing:** enhances oxygenation, blood flow, and the development of granulation tissue.
5. The treatment is in line with Ayurvedic principles and is backed by current research on leech saliva's therapeutic advantages.

## Conclusion

According to Ayurveda, persistent, infected wounds that include symptoms like pain, slough, discharge, and an unpleasant odor are referred to as Dushta Vrana. Such wounds are caused by vitiated doshas and need to be properly cleansed and managed, according to Sushruta Samhita. In Ayurveda, jalaukavacharan, or leech therapy, is advised for ailments involving infection, inflammation, and blood stagnation. Biologically active compounds like



hirudin and other enzymes are released by leeches, especially *Hirudo medicinalis*, and aid in reducing inflammation, enhancing blood flow, and accelerating wound healing. For Dustavrana, jalaukavacharan is a secure and efficient treatment. Without serious side effects, it improves overall recovery, speeds up wound healing, and lowers the chance of infection. Its potential as an integrative therapy approach in the management of chronic wounds is highlighted by this case.

**Conflict of interest –nil**

**Source of support –none**

## References-

1. Mac Donald John Global initiative for Wound and Lymphedema Care (GLWLC); Journal of Lymphoedema, 2009; 4: 92. ([http://www.woundsinternational.com/media/issues/850/files/content\\_11172.pdf](http://www.woundsinternational.com/media/issues/850/files/content_11172.pdf)).
2. Sushruta. Chi 1/6. In: Y T Acharya (eds.) Sushruta Samhita. Varanasi: Chaukhambha Publications; 2006. p396
3. Sushruta. Su 23/3-2, Su 23/18. In: Y T Acharya (eds.) Sushruta Samhita. Varanasi: Chaukhambha Publications; 2006. p111
4. Sushruta. Chi 1/13. In: Y T Acharya (eds.) Sushruta Samhita. Varanasi: Chaukhambha Publications; 2006. p400.
5. Kochunni thamburan, Prayoga samuchayam, Thrissur, Kerala: Sulabha books; thriteeyaparicheda, p-68
6. VM. Kuttikrishna menon, kriya Kaumudi a Malayalam treatise on ayurvedic Toxicology p-274
7. Mishr S. Sharangdhara Samhitha, Varanasi, Madhyama, ChaukhambaOrientalia, 2021.p.205
8. Vagbhata, Ashtangahrdaya, Sarvangasundara commentary of Arunadatta & Ayurvedarasayana of Hemadri, Annotated by Dr. Anna moreswar Kunte & Krishna Ramachandra Sastri Narve, Edited by Pt.
9. Sushrut Samhita, Ayurveda Tattva Sandeepika, Kaviraj Dr. Ambikadutta Shastri, Sutra Sthan, 13/09.
10. Sushrut Samhita, Ayurveda Tattva Sandeepika, Kaviraj Dr. Ambikadutta Shastri, Sutra Sthan, 13/22.
11. Sushrut Samhita, Ayurveda Tattva Sandeepika, Kaviraj Dr. Ambikadutta Shastri, Sutra Sthan, 13/23.
12. Sushrut Samhita, Ayurveda Tattva Sandeepika, Kaviraj Dr. Ambikadutta Shastri, Sutra Sthan, 13/24.
13. Sushrut Samhita, Ayurveda Tattva Sandeepika, Kaviraj Dr. Ambikadutta Shastri, Sutra Sthan, 13/10.
14. Sushrut Samhita, Ayurveda Tattva Sandeepika, Kaviraj Dr. Ambikadutta Shastri, Sutra Sthan, 13/18.