

## Comparative clinical study to evaluate the efficacy of Jalaukavcharan and Standard Conservative Treatment in the pain management of Perianal Abscess - A Case Study

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DOI:10.21760/jaims.10.9.40

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**Background:** A perianal abscess, also known as an anal or rectal abscess, is a common acute surgical condition characterized by a pus-filled cavity near the anal canal. Approximately 90% of cases are cryptoglandular in origin, caused by obstruction and infection of anal glands located within the intersphincteric space. Other etiologies include inflammatory bowel diseases. In Ayurvedic literature, Acharya Sushruta - revered as the Father of Indian Surgery - has described such abscesses under the broad category of Vidradhi. Jalaukavacharana (leech therapy), a form of Raktamokshana (bloodletting), is a unique Ayurvedic approach with potent anti-inflammatory, analgesic, thrombolytic, anticoagulant, vasodilatory, and circulation-enhancing properties, attributed to bioactive molecules in leech saliva. Acharya Vagbhata has advocated its use in inflammatory conditions like Vranashopha, a Raktapradoshaja Vyadhi characterized by localized swelling, discoloration, burning sensation, and pain.

**Materials and Methods:** This is a comparative case study involving two patients:

**Standard Case:** A 42-year-old male presented with severe throbbing pain in the perianal region, aggravated post-defecation, burning during defecation, inability to sit or sleep due to pain, and fever for two days. He was managed with conventional modern medical treatment.


**Experimental case:** A 50-year-old male with similar complaints persisting for 5-6 days and fever for 3 days was treated using Ayurvedic principles, including Jalaukavacharana and internal medications.

**Results:** Significant symptomatic relief was observed in the Ayurvedic case, including complete resolution of pain and associated symptoms. The outcome was superior in comparison to conservative modern treatment, which provided only partial relief over a period.

**Discussion:** The successful outcome with Jalaukavacharana can be attributed to the synergistic effects of leech saliva, which contains bioactive compounds with anti-inflammatory, analgesic, and thrombolytic properties. Its role in improving local blood circulation and reducing localized inflammation likely contributed to rapid symptom resolution.

**Conclusion:** Jalaukavacharana, when combined with internal Ayurvedic medications, provides a safe and effective alternative in the management of pain in perianal abscess. This case study demonstrates the potential of integrative Ayurvedic approaches in addressing inflammatory anorectal disorders.

**Keywords:** Ayurveda, Jalaukavacharana, Perianal Abscess, Vidradhi, Leech Therapy, Raktamokshana

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Manuscript Received  
2025-07-10

Review Round 1  
2025-07-26

Review Round 2  
2025-08-06

Review Round 3  
2025-08-16

Accepted  
2025-08-26

Conflict of Interest  
None

Funding  
Nil

Ethical Approval  
Not required

Plagiarism X-checker  
12.63

Note



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## Introduction

A perianal abscess is an acute inflammatory condition that results from infection of the anal glands located in the intersphincteric space, leading to a localized collection of pus in the perianal or ischiorectal region. It is a frequently encountered surgical condition, especially in emergency settings, and accounts for nearly 30–40% of anorectal infections globally.[1] Most cases originate from cryptoglandular infection, though secondary causes include inflammatory bowel disease (IBD), trauma, tuberculosis, HIV/AIDS, and diabetes mellitus.[2,3] Patients often present with severe throbbing perianal pain, swelling, fever, difficulty during defecation, and inability to sit or sleep comfortably due to pain. The standard management in modern medicine involves incision and drainage (I&D), often supported with broad-spectrum antibiotics and pain management. However, there are limitations such as recurrence, chronic fistula formation, and postoperative morbidity.[4,5] From an *Ayurvedic* standpoint, such clinical features resemble conditions described under *Vidradhi* (deep abscess) and *Vranashopha* (inflammatory swelling). *Acharya Sushruta*, the father of Indian surgery, defines **Vidrādhī** is a deep-seated inflammatory swelling described in *Ayurveda*, which can progress to form an abscess if not treated early. It is caused by the vitiation of *Doshas*, especially affecting *Rakta*, *Mamsa*, and *Meda dhatus*. In the **Apakva (immature)** stage, *Vidradhi* presents as a hard, painful, and inflamed mass without pus formation. This stage requires prompt treatment to reduce inflammation and prevent suppuration.[6] *Vranashopha* is described by *Acharya Vagbhata* as a *Raktapradoshaja Vyadhi* (blood-borne disorder),

Predominantly caused by vitiation of *Pitta* and *Rakta* leading to discoloration (*Vaivarnyata*), burning sensation (*Daha*), pain (*Toda*), and swelling (*Shotha*).[7] A classical *Ayurvedic* therapeutic intervention for such conditions is *Jalaukavacharana* (leech therapy) - a technique of biological bloodletting (*Raktamokshana*) indicated specifically in *Pitta-Rakta* vitiated disorders. *Acharya Sushruta* categorizes *Jalaukavacharana* under *Anushastra Karma* (para-surgical measures), describing its efficacy in various inflammatory, ischemic, and painful conditions.[8] Leech therapy has gained scientific recognition in recent years due to the discovery of bioactive components in leech saliva, including hirudin (anticoagulant), calin (platelet aggregation inhibitor), bdellins and eglins (protease inhibitors with anti-inflammatory activity), and hyaluronidase (spreading factor). These compounds exhibit anti-inflammatory, analgesic, thrombolytic, antimicrobial, and microcirculation-enhancing effects.[9,10] These properties align closely with the pathophysiology of perianal abscess, making leech therapy a potentially effective non-surgical approach to reduce pain, inflammation, and prevent recurrence.

## Case Report

**Standard Case:** A 42-year-old male presented with severe throbbing pain in perianal region, aggravated post-defecation, burning during defecation, inability to sit or sleep due to pain, and fever for two days. He was managed with conventional modern medical treatment. **Experimental case:** A 50-year-old male with similar complaints persisting for 5–6 days and fever for 3 days was treated using *Ayurvedic* principles, including *Jalaukavacharana* and internal medications.

**Details of Chief & Associated Complaints with duration are given in Tables 1.**

**Table 1: Details of chief complaints with duration**

SN	Standard Case			SN	Experimental case		
	Nature of Chief complaint	Severity	Duration		Nature of Chief complaint	Severity	Duration
1.	Severe Throbbing pain at left perianal region.	4+	3-4 days	1.	Severe Throbbing pain at left perianal region	4+	5-6 days
2.	Pain during defecation at anal region.	4+	3-4 days	2.	Pain during defecation at anal region,	4+	5-6 days
3.	PAIN and difficulty while sitting.	4+	3-4 days	3.	Increased after defecation, PAIN and difficulty while sitting,	4+	5-6 days
4.	Unable to sleep and even seat properly due to pain	4+	3-4 days	4.	Unable to sleep and even seat properly due to pain,	4+	5-6 days
5.	Burning sensation during defecation.	4+	3-4 days	5.	Burning sensation during defecation	4+	5-6 days
6.	Fever	2+	2 days	6.	Fever	2+	3 days

**Progress of Disease:** Both patients are well before then they gradually developed symptoms such as Severe Throbbing pain at perianal region, Pain during defecation at anal region, increased after defecation, PAIN & difficulty while sitting, Unable to sleep & even seat properly due to pain, Burning sensation during defecation & Fever.

## Patient's History

Details of patient's history are given in Table no.2.

**Table 2: history of patient**

SN	Head	Standard Case	Experimental Case
1.	Past History	No H/o similar episode No any Major illness No allergy No drug history No previous operation done No history of any trauma/tuberculosis (TB)	No H/o similar episode No any Major illness No allergy No drug history No previous operation done No history of any trauma/tuberculosis (TB)
2.	History of present illness:	Onset - Before 5-6 days Duration - In the last 5-6 days Progress - Gradual	Onset - Before 3-4 days Duration - Since 3-4 days Progress - Gradual
3.	Family History	Mother - K/C/O/ DM) HTN and IHD Father - HTN, IHD, and osteoarthritis (knee) Siblings - one brother - K/C/O/HTN.	Mother - NAD Father - NAD
4.	Personal History	Diet: vegetarian, Daily intake of oily, sweet food items despite being diabetic nature Sleep: interrupted due to burning sensations and pain overwound No history of any addiction	Diet: vegetarian, Daily intake of oily, sweet food items despite being diabetic nature Sleep: interrupted due to burning sensations and pain overwound No history of any addiction

## Examinations



**Figure 1: Local examination of the affected part (Standard Case)**



**Figure 2: Local examination of the affected part (Experimental Case)**

Local examinations of patient are given in Table No. 3

**Table 3: Local examinations of patient**

SN	Standard Case	Experimental Case
1.	<b>Inspection</b>  Inflammation (unripen Perianal abscess) present at perianal region. About 1 cm away from anal verge at 3 o'clock position. Redness (erythema) present. Induration present	<b>Inspection</b>  Inflammation (unripen Perianal abscess) present at perianal region. About 2 cm away from anal verge at 5 o'clock position. Redness (erythema) present. Induration present
2.	<b>Palpation</b>  Tenderness- +++ Localized temperature- Raised No pus discharge No Active Bleeding	<b>Palpation</b>  Tenderness- +++ Localized temperature- Raised No pus discharge No Active Bleeding
3.	<b>P/R Done with lox 2%</b>  Spasm + Tenderness + <b>P/S Done with lox 2 %</b>	<b>P/R Done with lox 2%</b>  Spasm + Tenderness + <b>P/S Done with lox 2 %</b>
4.	There is no internal opening or external opening found.	There is no internal opening or external opening found.

## Diagnosis:

**Standard Case:** Left side Perianal Abscess (Vidradhi)

**Experimental case:** Left side Perianal Abscess (Vidradhi)

## Therapeutic Intervention:

The line of treatment adopted for **Standard Case** (Conservative Management), as shown in Table 4.

**Table 4: Line of treatment**

Injectable Medication: For 3 Days	Oral Medication: For 4 Days	Oral Medication: For 15 Days
Inj. Taxim 1 gm BD IV In 100ml NS.	Tab. Pan 20 mg 1 BD AF	Triphala Guggulu 500mg 2 BD AF
Inj. Metro 500 mg TDS IV	Tab. Enzoftam 1 BD AF	Gandhak Rasayan 240mg 2 BD AF
Inj. Dynapar 75 AQ IV in 100 ml NS SOS	Tab. Chymoral forte 1 BD AF	Gandharva Haritaki Churna 3gm HS AF.

The line of treatment adopted for **Experimental case** (Ayurvedic Management), as shown in Table 5.



**Table 5: Line of treatment**

Injectable Medication: For 3 Days	Oral Medication: For 4 Days	Oral Medication: For 30 Days
Inj. Taxim 1 gm BD IV In 100ml NS.	Tab. Pan 20 mg 1 BD AF	Triphala Guggulu 500mg 2 BD AF
Inj. Metro 500 mg TDS IV		Gandhak Rasayan 240mg 2 BD AF
		Gandharva Haritaki Churna 3gm HS AF.

**Treatment Protocol (Experimental case):  
Jalaukavcharan**
**Method of Application**
**Pre-Procedure / Purva Karma**

- Purification and activation of leech by pouring the leech in water mixed with *Haridra*.
- Part preparation:
- Cleaning of the part of the body was done with normal saline and dried; to which leech was to be applied.


**Figure 3: Activation of Jalauka**
**Procedure / Pradhan Karma**

- Patient was placed in left lateral position.
- Subsequently leeches were applied at perianal region or at swelling region. When it acquires a horse shoe shape along with signs of active peristalsis the leech was covered by wet cotton.


**Figure 4: Application of Leech**
**Characteristics of Leech Application**

- Gradual distention in the central portion of body.
- Itching and burning sensation at the site of bite.
- Pulsation of the body of the leech was visible.

**Removal of Leech**

- After 40-60 minutes leech detached by itself.


**Figure 5: Characteristics of leech application**
**Post Procedure / Paschat Karma**

- After detachment of leech there was a triangular wound created by the mouth of the leech. The blood came out from the wound.
- Bleeding from wound was checked by application of *Haridra* powder & pack bandaging.


**Figure 6: Vamana of Leech**
**Induction of Emesis**

- The leech that was applied to the lesion underwent the process of *Vamana* so that the same leech could be applied next time to the same patient.
- For the emesis of leech turmeric powder was applied over the mouth of the leech.
- Sometimes pressing of the leech from caudal to front end was required for proper emesis.
- After proper emesis leeches were put in the fresh water, where it swam swiftly and then settled down. The leeches were replaced in a clean jar or aquarium.

**Contraindication of Leech Therapy**

- Blood clotting disorder
- Severe anemia
- Allergic reaction to active substance of the leech such as hirudin, calin, hyaluronidase, etc.
- Asthenic individuals
- Pregnancy

**Observation**

All post treatment observations are given in table 6.

**Table 6: Showing observation of patient post treatment.**

In standard case with conservative care with modern medications.	In experimental case with parasurgical procedure (Jalaukavcharan).
1. Suppression of pain sensation 20-30 min after taking medication (Tab. Enzoform / inj. Dynapar 75 AQ SOS).	1. Instant relief from the intense throbbing pain caused by inflammation of perianal region
2. Recurrent episodes of pain occurred after the medication's effectiveness wore off.	2. Patient was able to sit properly
3. Patient was able to sit properly only after medications.	3. Relief from pain during defecation.
4. Relief from pain during defecation after medication.	



**Figure 7: Release of clot from the abscess post Jalaukavcharan.**

**Follow-up after Jalaukavcharan was given in table no 7:**

**Table 7: Follow up after Jalaukavcharan**

Sign and symptoms	Right gluteal region			
	Day 0	Day 1	Day 7	Day 14
Severe Throbbing pain at left perianal region.	4+	+	-	-
Pain during defecation at anal region.	4+	+	-	-
Pain and difficulty while sitting.	4+	+	-	-
Unable to sleep and even seat properly due to pain	4+	+	-	-
Burning sensation during defecation.	4+	+	-	-

**Discussion**

**Table 8: Mechanism of Jalaukavcharana in Pain Relief**

Mechanism of Jalaukavcharana in Pain Relief	How?
Local Bloodletting and Decompression	The application of medicinal leeches causes removal of congested blood, which reduces tissue tension and pressure, leading to mechanical pain relief.[17] This is especially effective in Apakva Vidradhi, where no pus formation has yet occurred.
Vata-Pitta Shamaka Effect	By removing vitiated Rakta and alleviating Pitta-induced inflammation, Jalaukavcharana also addresses the underlying Vata vitiation responsible for pain (Shoola).[18]
Biomedical Perspective	Leech saliva contains over 100 pharmacologically active substances, many of which have been studied for their analgesic and anti-inflammatory properties[19]
Local Anesthetic-like Action	Leech saliva has compounds that block nerve conduction locally, providing immediate pain relief without the systemic side effects of opioids or NSAIDs.[20]
Anti-inflammatory Agents	Bdellins and eglyns inhibit proteolytic enzymes like trypsin and chymotrypsin, reducing inflammatory edema and associated pain.[21] These molecules prevent prostaglandin and bradykinin-mediated pain pathways, much like NSAIDs.[22]
Vasodilation and Improved Circulation	<ul style="list-style-type: none"> <li>▪ Compounds like histamine-like substances, acetylcholine, and nitric oxide enhancers improve local circulation, reducing ischemia-related pain.[23]</li> <li>▪ Hirudin prevents clot formation, thereby maintaining capillary blood flow in the inflamed region.[24]</li> </ul>
Immunomodulation	Leech saliva also modulates the immune response by inhibiting cytokine release, thereby preventing the pain-amplifying effects of chronic inflammation.[25]

Perianal abscess is a common anorectal condition that presents with acute inflammation, severe localized pain, swelling, and sometimes systemic symptoms like fever. Pain, being the most prominent symptom, is due to both inflammatory processes and localized pressure from the abscess cavity. In *Ayurveda*, this condition is described under Vidradhi—a deep-seated inflammatory swelling.

In its *Apakva* stage (immature stage), it is characterized by *Toda* (pricking pain), *Daha* (burning), and *Shopha* (swelling), often located near the *Guda* (anus) region.[12] *Jalaukavacharana* (leech therapy), a form of *Raktamokshana* (bloodletting), is a classical *Ayurvedic* parasurgical technique described for conditions involving vitiated *Rakta* and *Pitta*, both of which are dominant in *Vidradhi*. [13] The unique mechanism of *Jalaukavacharana* allows it to alleviate pain, reduce inflammation, and promote wound healing in perianal abscesses, especially in the early stage (*Apakva Vidradhi*) or during post-drainage recovery. According to *Ayurvedic* texts, pain in *Vidradhi* arises from the vitiation of *Vata*, secondary to obstruction caused by *Pitta* and *Rakta Doshas*. [14] This results in *Srotorodha* (obstruction of body channels) and pressure buildup, leading to severe pain and discomfort. *Sushruta* classifies *Vidradhi* as a *Tridoshaja* condition, with *Pitta-Rakta* predominance in inflammatory types. [15] When the abscess is in the *Apakva* stage, *Sneha*, *Swedana*, and *Bhedana* are contraindicated. Instead, *Jalaukavacharana* is preferred for *Sukumara* patients and *Pitta-Rakta* dominant inflammatory swellings, such as perianal abscess. [16]

Mechanism of *Jalaukavacharana* in Pain Relief was given in table no. 8

**Comparison with Conventional Pain Management was given in table no. 9**

**Table 9: Comparison with Conventional Pain Management.**

Parameter	Jalaukavacharana	NSAIDs/Opioids
Local action	Direct & specific	Systemic
Onset of relief	Rapid	Moderate
Side effects	Minimal	Gastric upset, renal risk
Promotes healing	Yes	May delay healing
Safe in comorbidities	Yes	Risky in renal/hepatic patients

## Conclusion

*Jalaukavacharana* (leech therapy) offers a multifaceted and minimally invasive approach to managing pain and inflammation associated with perianal abscesses, especially during the *Apakva Vidradhi* stage and in the postoperative period. The therapeutic effects arise primarily from bioactive compounds in leech saliva, including anticoagulants, anti-inflammatory agents, vasodilators, and analgesics.

These substances work together to improve local blood flow, reduce venous congestion, minimize swelling, and provide effective pain relief. By facilitating detoxification and decompression of the affected tissues, *Jalaukavacharana* accelerates healing while reducing the need for systemic medications, which often have undesirable side effects. Its localized action makes it particularly useful in sensitive anorectal areas, where conventional treatments may be limited or invasive. With strong support from both classical *Ayurvedic* texts and emerging modern scientific research, *Jalaukavacharana* bridges traditional wisdom and contemporary medicine. It stands as a valuable complementary therapy in integrated pain management protocols, enhancing patient comfort, reducing inflammation, and promoting faster recovery in inflammatory anorectal conditions.

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