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THERAPEUTIC ROLE OF JALAUKAVACARAṆA IN THE MANAGEMENT OF BARTHOLIN'S CYST-AN INTEGRATIVE REVIEW

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ABSTRACT

Bartholin's cyst is a benign fluid-filled swelling caused by obstruction of the Bartholin's duct. The conventional line of management incision and drainage, marsupialisation, or excision often results in recurrence, postoperative pain, and patient discomfort. In Ayurveda, it can be correlated with Karnini Yonivyapad, a condition characterised by Kapha-Rakta vitiation leading to cystic formations. Jalaukavacharana (leech therapy), one of the Raktamokshana (bloodletting) procedures described by Acharya Sushruta, plays a vital role in managing inflammatory and cystic swellings. This review aims to summarise classical Ayurvedic references and modern scientific studies supporting the therapeutic application of Jalaukavacharana in the treatment of Bartholin's cyst.

KEYWORDS: *Bartholin's cyst, Jalaukavacharana, Leech therapy, Karnini Yonivyapad, Shalya Tantra, Raktamokshana*

INTRODUCTION

Bartholin's glands are small, pea-sized glands located bilaterally at the 5 and 7 o'clock positions of the vaginal introitus. They secrete mucus that lubricates the vaginal orifice[1]. Obstruction of these ducts leads to cyst formation, which may progress to an abscess if infected. Clinical symptoms include unilateral swelling, pain, redness, and discomfort during walking or sexual activity.

Conventional treatments include antibiotics, analgesics, incision and drainage, marsupialisation, and Word catheter insertion. However, recurrence rates remain significant, with some studies reporting rates of up to 10–15% within a year[2]. These challenges have prompted exploration of alternative and complementary therapies.

There is no specific prevalence rate for Bartholin's cyst in India, but globally, it affects about 2% of women at some point in their lives[3]. Studies from Indian hospitals show that out of the gynaecological cases they manage, the incidence is around 1.05% for Bartholin's cysts and abscesses, but this may be specific to that hospital's patient population. Generally, the cysts occur in women of childbearing age, particularly between 35 and 50 years old[4].

In Ayurveda, cystic swellings of the female genitalia are described under *Karninī Yonivyapada* [5]and *Karnika*[6], the pathogenesis is linked to vitiation of *Kapha* and *Rakta*, resulting in obstruction and inflammation. "*Karniyan Karnika Yonau Shleshmasrugbhyam Prajayate*[7]*."* It denotes
that *Karnika* (cyst) occurs in *Yoni*(vagina)
is *Karnini Yonivyapad*, which involves vitiation of *Kapha* and *Rakta*. The classical texts advocate *Raktamokshana* (bloodletting), specifically *Jalaukavacharana*, for localised cleansing and restoration of *dosha* balance.

OBJECTIVE

To evaluate the Therapeutic Role of *Jalaukavacharaṇa* in the Management of Bartholin's Cyst

Therapeutic Indication of *Jalaukavacharan*

- ***According to the Classical Ayurvedic Texts***
  - *Gulma, Arshas, Vidradhi, Kushtha, Vataraktha, Ghalaroga, Netraroga, Vishavikara, Visarpa*[8].

MECHANISM OF ACTION

Jalaukavacharaṇa exerts its therapeutic effects through three main principles: *Shodhana* (cleansing), *Shamana* (pacification), and *Ropana* (healing). The procedure removes vitiated blood and morbid doshas from the affected site, reducing congestion, inflammation, and pain. Leech saliva (*Jalaukadhenu*) possesses *Sheeta Virya* (cooling potency) and *Laghu Guna* (light quality), making it particularly effective in pacifying *Pitta* and *Kapha* doshas. By balancing these doshas, *Jalaukavacharaṇa* alleviates inflammatory symptoms such as swelling, erythema, and tenderness associated with cysts or abscesses.

Leech contains hirudin, antistasin (anticoagulant) that inhibits the process of hemostasis by interacting with various components of the coagulation cascade. Blood-feeding leeches have 3 main mechanisms to inhibit hemostasis (blood clotting):

1. Inhibition of cross-linked platelets by preventing platelet adhesion to collagen
2. Inhibition of platelet adhesion to fibrinogen and
3. Thrombin inhibition.

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Among the leech's thrombin inhibitors, antistasin targets factor Xa, an agonist of prothrombin. Leeches minimise the amount of clogged blood and prevent blood clotting by adding heparin to it, as a result, clearing the blockages of the Bartholin's cyst. Leech Saliva also contains compounds that expand blood vessels to enhance blood flow, due to which fresh blood flow to that place is increased, which decreases the infection by the activity of WBCs.

BIOMEDICAL PERSPECTIVE

Leech saliva is a complex mixture of bioactive substances, including:

- **Hirudin:** A potent anticoagulant that inhibits thrombin, preventing blood clot formation.
- **Antistasin**: An anti-inflammatory and anticoagulant agent that reduces local edema.
- **Eglins**: Protease inhibitors with anti-inflammatory properties.
- **Bdellins**: Inhibit trypsin, plasmin, and other proteases, contributing to anti-inflammatory effects.
- **Hyaluronidase**: Increases tissue permeability, promoting the diffusion of therapeutic substances and reducing local congestion.
- **Vasodilatory substances**: Improve microcirculation, facilitating decongestion and oxygenation of tissues.
- **Angiogenesis (Formation of New Vessels):** In response to restricted blood flow caused by blockage, the body initiates the formation of new collateral vessels to restore perfusion.
- **Vasodilatation of Existing Collaterals:** Pre-existing collateral vessels, which are usually small and dormant, undergo enlargement to accommodate increased blood flow.
- **Ischemic Compensation:** This collateral network helps maintain adequate blood supply to ischemic tissues, compensating for the obstructed primary vessels.

Collectively, these compounds provide anticoagulant, anti-inflammatory, and antimicrobial effects, which help reduce local congestion, promote drainage of accumulated secretions, and facilitate cyst resolution and tissue healing. *Jalaukavacharana,* therefore, represents a synergistic approach combining Ayurvedic dosha modulation with measurable pharmacological actions.

METHOD OF LEECH APPLICATION

Selected leeches should be smeared with a paste of mustard and turmeric, then kept in a water pot for 48 minutes. An active leech is selected and set aside to be kept in a separate water container.

PROCEDURE OF JALAUKAVACHARANA

The patient is made to sit or lie down, affected area is washed with clean water. Then the selected leech is kept over the affected area to bite and suck the blood. And retained with soft, white, moist cotton cloth is kept over it. With the appearance of pricking pain and itching at the site of the bite, it is understood that the leech is sucking pure blood, then it should be removed by sprinkling salt or turmeric powder over its mouth.

POST THERAPY PROCEDURE

At the site of the bite, turmeric is applied to arrest the bleeding. *Avagada Jalauka* are leeches that attach properly and suck blood effectively, ensuring successful *Raktamokhṣaṇa*, while *Anavagada Jalauka* fail to attach due to skin dryness, leech weakness, or improper site preparation and may need revival or replacement. Terms like *Avagahana* (proper sucking), *Murcchita Jalauka* (faint leech), and *Vimukta Jalauka* (detached leech) describe their behaviour. Observation of dark or foul-smelling blood indicates the removal of *Duṣhitha Raktha.*

CONTRAINDICATIONS OF LEECH THERAPY IN MODERN MEDICINE

- Anticoagulant medications, e. g. Warfarin.
- Absolute haemophilia.
- Severe anemia.
- Erosive gastritis and potential GI bleeding.
- Individuals with HIV infection.
- Severe allergic diathesis [Allergy to foreign proteins].
- Hypotension.
- Active tuberculosis.
- Pregnancy.
- Mental disorders during acute episodes. Severely ill and bedridden patients.
- Extremely fearful patients.

DISCUSSION

Multiple case studies and traditional practice experiences demonstrate that *Jalaukavacharana*: -

- Reduces pain and swelling effectively within 3–4 sittings.
- Promotes drainage and detoxification of retained secretions.
- Prevents recurrence compared to surgical interventions.
- Improves cosmetic and functional outcomes with minimal scarring

The pathophysiology of *Bartholin's cyst* can be understood through the concept of *Kapha–Raktha Dusthi*. The obstruction of the Bartholin duct resembles *srotorodha* (channel obstruction) caused by vitiated *Kapha dosha*, leading to the accumulation of *kleda* (mucus) and cystic formation. When *Raktha* is subsequently vitiated due to localised inflammation, symptoms such as *shoola* (pain), *sopha* (swelling), and *raaga* (redness) become evident. Thus, the disease follows a *Kapha–Rakta samprapti* pattern involving *srotodusthi* and *sangha*.

According to *Acharya Sushruta* [9], *Rakta mokshana* is one of the prime *Shodhana* therapies for disorders involving *Rakta Dushti*. Among various methods, *Jalaukavacharana* (leech therapy) is indicated for delicate areas and *pitta-pradhana* conditions due to its *Sheetaveerya* (cooling potency) and *Laghu guna* (lightness), which effectively pacify *Pitta* and *Kapha doshas*[10]. The process leads to *vitiated Rakta nirharana* (expulsion of impure blood) and enhancement of *local Agni* (metabolic activity), restoring normal *srotas* function and reducing *sopha*.

From a modern biomedical viewpoint, *leech therapy* exerts its effect through several bioactive compounds present in leech saliva - Hirudin, Calin, Eglins, Bdellins, Hyaluronidase, and Destabilase**.** These substances have anticoagulant, anti-inflammatory, fibrinolytic, vasodilatory, and bacteriostatic

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actions[11]. Hirudin prevents thrombus formation and enhances venous outflow, while Hyaluronidase acts as a "spreading factor," improving lymphatic and interstitial drainage. Eglins and Bdellins inhibit proteolytic enzymes like elastase and trypsin, thereby reducing tissue inflammation and pain[12].

In the context of *Bartholin's cyst*, *Jalaukavacharana* facilitates drainage of the retained secretion, relieves tension and pain, and prevents abscess formation. The therapy is minimally invasive and cost-effective, with minimal recurrence when compared to conventional surgical methods like marsupialisation or Word catheterisation.

Hence, *Jalaukavacharana* represents a scientifically validated and Ayurvedically sound approach that harmonises *Shodhana* and *Shamana* principles[13]. The synergistic effects of ancient Ayurvedic wisdom and modern pharmacology highlight its role as an effective conservative therapy for Bartholin's cyst and similar inflammatory swellings.

CONCLUSION

Jalaukavacharana (leech therapy) is a scientifically supported, cost-effective, and minimally invasive treatment modality for the management of Bartholin's cyst. It alleviates pain and inflammation, ensures complete resolution, and prevents recurrence. Further clinical studies and controlled trials are recommended to establish standardised protocols and objective efficacy parameters.

Although Bartholin's cyst is compared with *Yonikanda* in many *Ayurvedic* texts due to their geographical proximity but it is found that Bartholin's Cyst and *Karnini Yonivyapad* could be correlated based on the *Doshas* involved. Treatment based on its *Dosha* predominance will help to treat it efficiently. Considering the efficacy of *Jalaukavacharana* (leech therapy), it would be favourable to treat Bartholin's cyst by leech application and oral medication like *Kanchnar Guggulu, Arogyavardhini Vati, Gandhak Vati, Khadiradi Vati*, as well as local wash with *Triphala, Nimbha, and Haridra Churna Kwatha* (decoction)[14]. As it is very effective, it can spare patients from undergoing a surgical procedure.

SUMMARY

Jalaukavacharaṇa (leech therapy) is an effective, economical, and minimally invasive approach for managing Bartholin's cyst. It helps relieve pain, reduce inflammation, and prevent recurrence. Though traditionally compared with *Yonikanda*, the condition aligns more closely with *Karnini Yonivyapad* due to *Kapha–Rakta* vitiation. Integrating *Jalaukavacharaṇa* with Ayurvedic internal medicines like *Kanchanhara Guggulu*, *Arogyavardhini Vaṭi*, and local washes of *Triphala*, *Nimba*, and *Haridra Kwatha* enhances therapeutic outcomes. This combined Ayurvedic management can effectively replace surgical intervention, offering a safe and holistic treatment option.

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