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Holistic review of *Jaluka* – A Natural Surgical Tool in the Management of *Arsha* (Haemorrhoids)

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ABSTRACT

The word Leech is taken from the old English word ‘Laece’ eventually becoming synonymous with ‘Physician’ whose significance is also expressed by the Lord Dhanwantari, Symbol of Surgical Expertise, who has *Jaluka* in one of his hand.

In the present era, Anorectal disorders are becoming more prevalent in which *Arshas* are quite common in the society. *Arshas*, which are associated with swelling, hardness and pain, is a condition resembling to thrombotic pile. Surgery is contraindicated if Haemorrhoids are associated with complications like thrombosis. In such conditions, *Jaluka* is indicated to remove the stagnated blood. Leeches are indicated in surgery whenever there is venous stasis. The saliva of leeches contain more than 100 bioactive substances which have bacteriostatic, analgesic, anti oedematous properties and lead to elimination of micro circulation disorder, restores permeability of tissues and organs.

The leech therapy proves to be less expensive, effective in the treatment of *Arshas* or Thrombotic pile mass.

KEYWORDS

Jaluka, Leech, Arsha, Prolapsed Haemorrhoids, Thrombotic Haemorrhoids, Venous stasis.



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INTRODUCTION

Lord Dhanwantari, symbol of surgical treatise, having *jaluka* in one of his hand reflects the significance of *jaluka* in medical field. Medicinal leech known as *Hirudino medicinalis* where *Hirudo* means leech and *medicinalis* once more indicates same under Hirudotherapy or Biotherapy. *Acharya Sushruta*, father of surgery was the first person to describe leeches in detail. It is one of the *anushastra* (Parasurgical) used for *raktamokshana* (Blood Letting) in various disorders like *galaganda*, *kantha roga*, *vidradhi*, *gulma*, *kushta*, *vatarakta*, *netra roga*, *visha*, *visarpa*¹ whereas in modern science Leeches are generally useful on areas where there is good arterial inflow but no venous outflow². Before the decision to use leeches is made, it is recommended that **consideration to be** given to other methods for improving circulation. It is very important that leeches only be used in conditions of venous congestion with good arterial inflow. Leeches will not be helpful in cases of insufficient arterial inflow. Insufficient arterial supply could lead to infection from any source including the leech.

In *Ayurveda*, the disease *Arsha* found its traces from Vedic period. As the name suggests, *Arsha* is a disease which haunts

the person like an enemy throughout his life by causing several disturbances and irritation so that the person cannot utilize his time creatively. To state the severity of disease, *Ayurveda* describes it under the heading of *Ashta Mahagada*, as it is *dirghakalanubandhi*, *duschikitysa* in nature, a *tridoshaja vyadhi* which involves the *marma*.

Since the dawn of civilization this problematic disease is not uncommon. If not treated properly or neglected, it may lead to complications such as strangulation, thrombosis, portal pyaemia, fibrosis, suppuration, haemorrhage etc. Amongst these complications thrombosis needs special attention since it causes maximum stress to patient and also due to the limitations of surgical maneuvers as well as failure of palliative therapeutic measures which produce ulceration, gangrene, fibrosis etc.

Importance of study

1) This disease is generally not a threat to life, but causes a considerable discomfort, enforced bed rest, absence from work with consequent economic strain and the long term effects of this disease are induced weakness and finally saps the energy and enthusiasm of the patient.



2) *Sushruta*, the father of surgery mentions this disease as ‘surgical domain’, since the final resort of the treatment is surgery. But, even surgery sometimes does not give gratifying results at the hands of experienced surgeons and recurrences established. Since, haemorrhoidal problem is not a threat to life the least invasive treatment is the most desirable.

AIM

“Surgery is always second best. If you can do something else, it’s better. Surgery is limited. It is operating on someone who has no place else to go.”

— John W. Kirklin

Despite careful techniques many subjects experience pain and discomfort, therefore any pharmacological agents leading to effective and rapid non invasive control of sign and symptom is of immense clinical value.

OBJECTIVES

1. To study and compile all the literature w.s.r. to *jalukavacharana* in *Arsha*.
2. To prove *Jaluka* to be superior blood letting therapy in the management of *Arsha*.
3. To study mode of action of *jaluka* in *Arsha* in light of *Ayurvedic* and modern science.

MATERIALS AND METHODS

All literatures like *brihatrayi*, *laghutrayi*, other *samhitas* like *Vangsen* etc., modern texts, latest information from internet are churned out to compile the subtle part for the study presented here.

OBSERVATION AND DISCUSSION

Historical review of bloodletting in Arsha

Bloodletting in *Arsha* is indicated in all the *Brihatrayi* whereas in *laghutrayi* like *Sharangdhar*³ it is contraindicated but indicated the use of leech in *attyayik avastha*. *Acharya Vangsen* has also mentioned the *raktamokshana* in the management of *Arsha*⁴. Scientific evidence of first use of leech is in Napoleons Haemorrhoids, by Phil Mason, says that the French emperor was suffering from an acute attack of piles that stopped him riding his horse and supervising the troops during the battle of Waterloo. Two days before the battle, Napoleons doctors lost the leeches that they used to relieve his agony and accidentally overdosed him with the pain killer Laudanum⁵.

Disease Review

While describing the pathology of *Arsha*, *Acharya Sushruta* has given immense importance to the *rakta*. As it is stated that



doshas singly, dually or all associated with *rakta* are aggravated and through *Dhamani* spreads to downward, reach *guda vali* (anal folds) and after vitiating them produce fleshy growths⁶.

Here, it is only mentioned the word *dhamani*.

Table 1 “*Srotas* involved in *samprapti* of *Arshas*”

<i>Srotas</i>	<i>Mulasthanas</i>	<i>Srotoviddha Lakshana</i>
<i>Raktavaha Srotas</i>	<i>Yakrit, Pliha, Raktavahidhamani</i>	<i>Shyavangata, Jvara, Daha, Pandu, Shonitagaman, Raktneetrata</i>
<i>Mamsvaha Srotas</i>	<i>Snayu, Tvacha, Raktvahidhamani</i>	<i>Shyavthu, Mamsasosha, Siragranthi, Marana</i>

Dhamani are said to 24 in numbers originating from *nabhi*. The 10 *adhogami dhamanis* in the region between *amashaya* and *pakvashaya* divides into three, thus 30 in total. Of them, 2 each carry *vata*, *pitta*, *kapha*, *rakta* and *rasa*⁷. From the above stated pathology the *dushya* are *rakta* and *mamsa* and thus the *srotas* involved are *Rakta* and *Mamsavaha srotas*. **Table 1**

These *srotoviddha lakshana* are in accordance with the clinical features of *Arsha* and proves the involvement of *rakta vahi dhamani* mainly in pathology of *Arsha*.

Haemorrhoids are pathological term to describe the abnormal downward displacement of anal cushions causing

S. No.
1.

Condition



Figure 1 “Prolapsed mass”⁹

2.



Figure 2 “Thrombotic pile”¹⁰

venous dilatation. The pathological changes can be interrelated in *Ayurveda*. **Table 2** These pathological changes emphasizes on *pitta* and *rakta dosha*⁸ predominance in haemorrhoidal mass. If not treated leads to suppuration (*paka*) and gangrene (*kotha*).

Indication of blood letting

Bloodletting is stated in *samhitas* demonstrated in **Figure 1 & 2**. Thrombotic haemorrhoids presents with a history of prolapsed complicated mass having intense pain and swelling. There is an obvious prolapsed internal haemorrhoids with surrounding oedema and pile itself is hard as a result of venous thrombosis.

Contraindication of blood letting in *Arsha* is when it is associated with *sarvanga shopha*¹¹.



S.No	PATHOLOGICAL CHANGES	AYURVEDIC TERM
1.	Abnormal venous dilatation	<i>Shonita kleda</i>
2.	Vascular thrombosis	<i>Grathita rakta</i>
3.	Degenerative process in collagen fiber and fibroelastic tissue	<i>Twakavadarana / charnavadarana</i>
4.	Distorsion and rupture of anal subepithelial muscle	<i>Mamsakleda</i>

Table 2 “Pathological changes in *Arshas*”

Why leeches to be prefer over other methods of blood letting¹²

In *Arsha*, it is stated that the *doshas* get localized in *raktavahini dhamani* and site is *mamsadhara tvaka*, “the seat of *pitta dosha*¹³”. In such conditions when *vatadi dosha* get vitiated from their place to other, then the *sthanika dosha* is first to be treated¹⁴. Here the *sthanika dosha* are *pitta* and *rakta*. In different modes of bloodletting like *shringa*, *jaluka*, *alabu*, *ghati*, *siravedhana*, *prachana* especially *jaluka* is indicated for *pitta* and *rakta vikara*¹⁵. Thus, following reasons can be summarized:

1. *Sthanika avagadha dosha*
2. *Grathita rakta*
3. *Pitta and rakta vikara*
4. *Sukumara* (delicate method)
5. *Marmasthana*

Pre operative procedure: Non poisonous Leeches were identified and collected from fresh water sources; they were stored in mud pots. On the day of application, the patient was placed on proper position according to

the site of lesion. Leeches (no. as required) were kept in turmeric water to make them active, increase appetite and free from natural urges, after keeping the leeches for 45 minutes they were put in fresh water.

Operative procedure: Lesion is cleaned by water and dried. The activated leeches were applied over the lesion site. Leeches become elevated like a horse shoe or raised in arched position from its neck which indicates that they are sucking the blood vigorously or strength fully. After catching the site, leeches were covered by wet cotton pad and regularly sprinkled with cold water. The leeches usually detach from the site after sucking the vitiated blood or have to be removed by sprinkling salt over it when the patient complains pain or itching. **Figure 3**



Figure 3 Leech application

Post operative procedure: After detachment of leeches, wound was cleaned



with antiseptic solution and after that tight bandage was applied for prevention of secondary hemorrhage. After falling off, the leeches were dusted with rice powder and turmeric powder was applied on the mouth to make it vomit the sucked blood (otherwise it may cause death of leeches). Leeches after vomiting were put in fresh water and when they move freely without sinking down were considered as properly vomited. Used leeches were kept in a separate pot containing pure water and used for the same patient after a gap of 7 days. The frequency of leech application will vary according to the severity of disease. Leeches should be reserved for a particular patient to avoid cross infection.

Contra indication of leech therapy

1. Blood clotting disorder.
2. Severe anemia.
3. Allergic reaction to active substances of the leech such as hirudin, hyaluronidase, egline, apyrase, destabilase, etc.
4. Pregnancy.

Precautions during leech application

1. Bleeding and clotting time of the patient should be normal.
2. Gentle handling of the leech.
3. Cover the leech with wet cotton and to prevent leech wandering, form a barrier by cutting a 1 cm hole in the midline of the

dampened gauze square and locating the hole in close contact with the area to be treated.

Mode of Action of *Jaluka*

According to *Vagbhata*, *jaluka* when applied to diseased area sucks only the *dushita rakta* as *Hans* differentiates milk and water¹⁶. With the removal of *dushita rakta*, patient gets relief from pain, swelling, redness¹⁷.

According to various studies, it is now scientifically proved that leeches sucks venous blood which is also basis of its use in other diseases like varicose vein, venous ulcer, Plastic surgery, Eczema etc.

Mode of action of leeches

The leech's main therapeutic benefits are not derived from the average 5 ml of blood removed during biting, but from the anticoagulant and vasodilators contained in the leech saliva. These properties permit the wound to ooze up to 50 ml of blood for up to 48 hours. Leech bites will bleed an average of six hours. The goal then is to produce an adequate venous outflow from the tissue by adjusting the number of leech applications and thereby bite wounds to suit the clinical applications.

When the leech bites various glands present in its buccal cavity secrete several biologically active substances into the prolapsed pile mass. **Table 3**

**Table 3** Enzyme secreted and its action

Enzymes	Action
Hirudin	Inhibits blood coagulation by binding to thrombin
Calin	Inhibits blood coagulation by blocking the binding of von Willebrand factor to collagen. Inhibits collagen- mediated platelet aggregation
Destabilase	Monomerizing activity. Dissolves fibrin. Thrombolytic effects
Hirustasin	Inhibits kallikrein, trypsin, chymotrypsin, neutrophilic cathepsin G
Bdellins	Anti-inflammatory. Inhibits trypsin, plasmin, acrosin
Hyaluronidase	Increases interstitial viscosity. Antibiotic
Tryptase inhibitor	Inhibits proteolytic enzymes of host mast cells
Eglins	Anti-inflammatory. Inhibit the activity of alpha-chymotrypsin, chymase, substilisin, elastase, cathepsin G
Factor Xa inhibitor	Inhibits the activity of coagulation factor xa by forming equimolar complexes
Complement inhibitors	May possibly replace natural complement inhibitors if they are deficient

RESULT

Sushruta, considered *Rakta* as fourth *dosha* and it has got an important role in disease formation. In such cases *Rakta- mokshana* is indicated as a para-surgical measure. Among the different types of *Raktamokshana* indicated in the treatment of prolapsed piles, *Jalukavacharana* is a noticeable one. This method is simple, safe, harmless, easy to administer, economic and devoid of any complications. The *Arshas* which are

swollen, prolapsed and containing more quantum of stagnated blood inside are significantly managed by leech therapy.

CONCLUSION

“If you have to use them”, said Friedman “Don’t waste time. Despite our advanced surgical techniques and therapies, there is still nothing better than leeches to solve the problem of venous congestion.”

In a world where medical advances are dominated by developments in drugs and surgery it seems that in certain fields these humble creatures cannot be beaten.



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