

## Role of Jaloukacharan in the Management of Various Anorectal Disorders As A Minimal Access Method in Surgery

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### Abstract:

Today surgeons are constantly looking out for minimal trauma, less tissue loss, minimal bleeding, less hospital stay, minimal scar, minimal frequent dressing required & low recurrence rate. But time comes when modern techniques fail to give results by using sophisticated surgical techniques and delay the treatment period. At such time one has to look back and see what methods were used by our ancient physicians & surgeons to treat such diseases.

Leech application is one of the methods of bloodletting used since ancient time all over the world. We applied leeches in various Anorectal conditions like perianal hematoma, thrombosed piles, traumatic haematoma, acute inflammation and swelling, abscesses. Saliva of leech contains Anti-thrombin (Hirudin), Hyaluronidase, Fibrinogenolysin, Plasminogen activation, Inhibition of platelets aggregation, Anesthetic agent, Antibacterial agent. Thus when applied on local affected parts, they actively remove the blood & secrete the numerous clots dissolving properties.

When the leech being fed they injects salivary component that inhibit both the platelet aggregation and the coagulation cascade, thus as producing venous decongestion, analgesic and anti-inflammatory effects, increase the micro capillaries circulation, improves wound healing. Patients were monitored closely for decrease in pain, swelling, local temperature, debriment action and improvement in venous circulation. Thus conclusion of study is that the leech helps in decreasing swelling and inflammatory process, improve the wound healing and can be used as an effective minimal access in the management of various Anorectal conditions.

(keywords :- Jaloukacharan, Anorectal Disorders, Minimal Access Method)

### Introduction

In today's modern era, surgery is developing towards as minimal access with development of newer techniques and instruments. All efforts are being made towards to make all procedures as minimal invasive with fewer complications. Surgeons are constantly looking out for minimal trauma, less tissue loss, minimal bleeding, less hospital stay, minimal scar, minimal frequent dressing required & low recurrence rate. But time comes when modern techniques fail to give results by using sophisticated surgical techniques and delay the treatment period and surgery is becoming very expensive day by day. People around the world spend billions of dollars searching for something original, unusual, something totally new. But most of time we forgot about the things already available to us.

At such time one has to look back and see what methods were used by our ancient physicians & surgeons to treat such diseases. Leech application

is one of the methods of bloodletting used since ancient time all over the world. Leech treatments are simple, inexpensive, and can be conducted in hospitals, as an outpatient procedure or at home. It can be used as a sole approach to healing, as well as in combination with other treatments. We applied leeches in various Anorectal conditions like perianal hematoma, inflamed and thrombosed piles, traumatic haematoma, acute inflammation and swelling, abscess. Saliva of leech contains Anti-thrombin (Hirudin), Hyaluronidase, Fibrinogenolysin, Plasminogen activation, Inhibition of platelets aggregation, Anesthetic agent, Antibacterial agent. Thus when applied on local affected parts, they actively remove the blood & secrete the numerous clots dissolving properties.

It is proved that, it's not a local but as a whole body treatment, as it impacts on vascular and lymphatic system and gives a biochemical reaction that results in strengthening of the organism. When leech bites biological substance reaches into blood stream. Saliva of leech contains Anti-thrombin (Hirudin), Hyaluronidase, Fibrinogenolysin, Plasminogen activation, Inhibition of platelets

aggregation, Anesthetic agent, Antibacterial agent. Thus when applied on local affected parts, they actively remove the blood & secrete the numerous clots dissolving properties .

When the leech being fed they injects salivary component that inhibit both the platelet aggregation and the coagulation cascade thus releasing the venous congestion and induces neo-vascularization, thus as producing venous decongestion, analgesic and anti-inflammatory effects, reducing hyper pigmentation, increase the micro capillaries circulation, improves wound healing. Patients were monitored closely for decrease in pain, swelling, local temperature, debriment action and improvement in venous circulation. So it is helpful in many medico-surgical condition as easy, amiable, low cost, minimum instrumentation, less complication, less hospital stay, and fulfil other all requirement of minimal access and invasive techniques of surgery like minimal trauma, bleeding, tissue loss etc. . Thus conclusion of study is that the leech helps in decreasing swelling and inflammatory process, improve the wound healing and can be used as an effective minimal access in the management of various medico-surgical conditions.

**Aims & Objectives**

- 1) To study the clinical effect of jaloukacharan in the Management of various Anorectal disorders
- 2) To prove that jaloukacharan as simple, amble, safe and minimal access and minimal invasive techniques of medicine & surgery
- 3) To review the literature about jalouka & its various properties

**Leech:-**

**Scientific Nomenclature:-**

Kingdom:- Animalia

Phylum:- Annelida

Class:- Clitellata

Order :- Hirudinida

Family:- Hirudinidae

Genus:- Hirudo

Species:- H. medicinalis

**Binomial name:- Hirudo medicinalis**

Ayurvedic Review of Jalouka The term Jalouka(leech) may be ethymologically interpreted to mean creatures whose life(ayu) or whose longevity is in, or depends upon water whereas the derivative meaning of term Jalouka is based upon the fact of their dwelling („Oka“-dwelling place) in water(Jalam).

(sushrutha.sutra.13/9) Jalouka dwelling in water & having soothing (madhura) properties should be used in sucking the blood vitiated by pitta dosha.

(sushrutha.sutra.13/6)

Jalouka may be divided into 12 distinct species of which 6 are venomous & 6 are nonvenomous. Venomous species are Krishna, karbura, alagarda, indrayudha, samudrika, gochandana & non-venomous species are kapila, pingala, shankumukhi, mushika, pundarikmukhi, savarika. Non-venomous jalouka should be used for medicinal purpose. (sushrutha.sutra.13/11-12)

According to Acharya Vagbhata, the length of Jalouka for medicinal purpose should be 4,5 & 6 anguli long, though they can be of 18 anguli. He has not mentioned the types of Jalouka but he has only described the male & female classification. The Jalouka which is small in size, thin skin, small head, broad lower end is female and the Jalouka which is bigger in size, thick skin, both ends are broad should be considered as male. (Vagbhata.sutra.25/50) Jalouka should be caught hold of with a piece of wet leather or by some similar article ie. a piece of wet leather rubbed with ghee, milk or butter and then put into a large sized new pitcher filled with the water.

Pulverised zoophytes and powder of dried meat and aquatic bulbs should be thrown into the pitcher as their food, and blades of grass and leaves of water plants should be put into it for them to lie upon. The water & the edibles should be changed every second or third day and the pitchers should be changed each week. (Sushrutha.sutra.13/16-17)



Modern Review of Leeches Leeches are segmented worms that belongs to the Phylum Annelida & comprise the Subclass Hirudinea like other Oligochaetes, such as earthworm. Leeches share a clitellum & are hermaphrodites. Nevertheless, they differ from other Oligochaetes in significant ways. The majority of leeches live in freshwater environment, while some species can be found in terrestrial & marine environment as well. Most leeches are hermatophagous, as they predominantly blood suckers that feed on blood from vertebrates & invertebrates animals. Almost 700 species of leeches are currently recognised, of which some 100 are marine, 90 terrestrial & the remainder freshwater taxa. For over 2000yrs, leeches were needlessly applied for many ailments as an adjacent to bloodletting.

Their use in Europe peaked between 1830 & 1850 but subsequent shortage & improvement in medical diagnostic skill lead to decline in their use. Today there is a real clinical application in that they are of great value to many medical branches. Physicians realised that patients who were leeches did not often recover more fully than those who were not. Medicinal leeches have been found to secrete saliva containing about 60 different proteins. These achieve a wide variety of goals useful to the leech as it feed, helping to keep the blood in liquid form & increasing blood flow in the affected area. Several of these secreted proteins serve as anticoagulants (such as hirudin), platelet aggregation inhibitors, vasodilators & proteinase inhibitors. It is also thought that the saliva contains an anaesthetic, as leech bites are generally not painful. Leeches use their anterior sucker to connect hosts for feeding. Once attached, leeches use a combination of mucus & suction to stay attached & secrete an anticoagulant enzyme, hirudin into the host's blood stream. A leech attaches itself when it bites and it will stay attached until it becomes full at which point it falls off to digest. Due to the hirudin secreted, bites may bleed more than a normal wound after the leech is removed. Leeches normally carry parasites in their digestive tracts, which cannot survive in humans & do not pose a threat.

## Materials & Methods

### Detail Plan and Protocol -

**Centre of Study** - Department of Shalya Tantra, Yashwant Rao Chavhan Ayurved Medical college and Hospital, Nipani-Bhalgaon, Beed Road, Aurangabad, Maharashtra.

**No. of Patients** - 5 Patient of each disease

**Selection of patients** - Diagnosed patients of various Anorectal diseases at Yashwant Rao Chavhan Ayurved Medical college and Hospital O.P.D. and I.P.D.

**Consent** - A well informed written consent has been taken before starting the treatment.

### **Procedure :-**

The method of Jaloukavacharan is done according to ancient method as described by Acharya Sushruta. Jaloukas are preserved in fish pot. Water is changed frequently i.e. after 5-7 days. Pot is kept in cold climates. Jaloukavacharan is a parasurgical measure & the procedure is divided into 3 parts.

1. Purvakarma (pre-operative) :- Jaloukas are kept in mixture of turmeric powder & water for 2 minutes to make them active & then in fresh water. These Jaloukas are ready for application. Patient should be in lying down position.
2. Pradhankarma (operative) :- The number of Jaloukas to be applied, varies according to severity of the condition. If Jalouka does not stuck, then it is applied after making a puncture by sterile needle. Even after this, if it does not stuck, another Jalouka is tried. The Jalouka sucks blood by its anterior sucker which is attached to the base by posterior sucker.
  1. In mild condition, Jaloukavacharan was done for 1-3 days & later on after 7 days if required.
  2. In moderate condition, Jaloukavacharan was done for 3-5 days & later on after 7 days if required.
  3. In severe condition, Jaloukavacharan was done for 5-7 days & later on after 7 days if required.
3. Pashchatkarma (post-operative) :- The Jalouka is removed from the site by sprinkling turmeric powder or otherwise Jalouka left the site on its own when completely swollen. Dressing of site application is done by haridra churna (turmeric powder). Patient has been given idea of oozing of blood from the site about 6-8 hrs. and hence advised to must attend the OPD on next day.

Blood from Jalouka is removed by sprinkling haridra churna on its mouth and by slowly & gently squeezing from tail to mouth & then kept in fresh water. If blood is not removed from Jalouka after application, the Jalouka will die.

Acharya has already described “Indramad Vyadhi” of Jalouka which occurs if blood is not removed properly. Reuse of Jalouka was strictly avoided.

**Inclusion criteria-**

- 1) patients with above diagnosed disease
- 2) the patient of either sex , male or female
- 3) Patients of age group 18 to 60 years old.

**Exclusion criteria :-**

- 1) Patient with any complicated systemic disease
- 2) Thrombosed Haemorrhoids, Haemorrhoids with ulcerative colitis, Fissure in Ano, Fistula in Ano, Rectal-Polyps, Solitary Rectal Ulcer and Prolapse of rectum.
- 3) HIV, HBsAg Positive Patients.
- 4) Threatened or any complicated disease where there is patient at risk
- 5) Patients with Hepatic Disorders, uncontrolled Diabetes and hypertention, Pulmonary & Intestinal Tuberculosis, Carcinomatous conditions of Anorectal region and Syphilis.

**Disease wise criteria**

**5)PERIANAL HAEMATOMA**

- Pain :- as per visual analogue scale
- Tenderness :-
  - Grade 0 - Nil
  - Grade 1 – Mild
  - Grade 2 – Moderate
  - Grade 3 – Severe
- Swelling :-
  - 0 – Complete Reduction.
  - 1 – Size Reduction by 25 %.
  - 2 – Size Reduction by 50 %.
  - 3 – No Change in Size.

**6)INFLAMMED & THROMBOSED PILES**

- Pain :- as per visual analogue scale
- Tenderness :-
  - Grade 0 - Nil
  - Grade 1 – Mild
  - Grade 2 – Moderate

Grade 3 – Severe

- Swelling :-
  - 0 – Complete Reduction.
  - 1 – Size Reduction by 25 %.
  - 2 – Size Reduction by 50 %.
  - 3 – No Change in Size.

**Investigations**

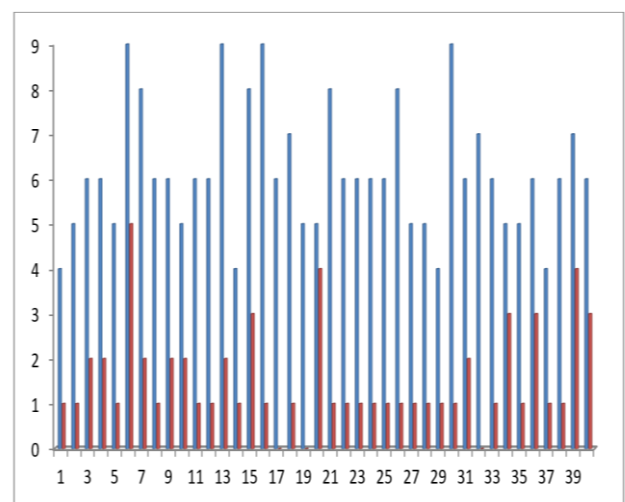
Routine investigations before treatment -

- Blood:- CBC
  - ESR
  - BT
  - CT
- BSL a) Fasting & b) Post prandial
- LFT
- RFT
- Urine a) Routine & b) Microscopic
- HBsAg
- HIV I and II

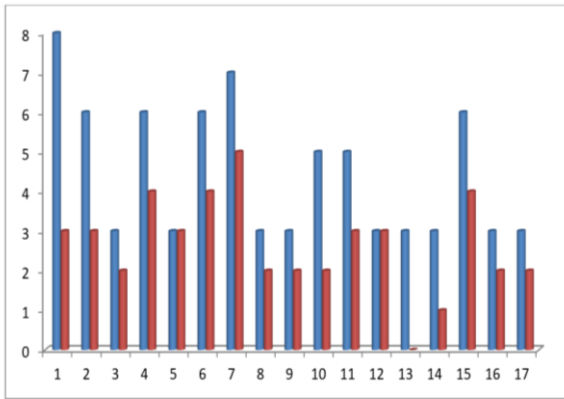
**Observation and Results**

Disease	BT	AT
<b>PERIANAL HAEMATOMA</b>		
<b>Pain</b>	1.9±0.70	0.17±0.44
<b>Tenderness</b>	1.97±0.57	0.12±0.40
<b>Swelling</b>	2.27±0.55	0.55±0.55
<b>INFLAMMED &amp; THROMBOSED PILES</b>		
<b>Pain</b>	0.71±0.17	0.48±0.11
<b>Tenderness</b>	1.41±0.5	0.7±0.46
<b>Swelling</b>	1.47±0.62	1.05±0.65

**1) PERIANAL HAEMATOMA**



**2) INFLAMMED & THROMBOSED PILES**



**LEECH THERAPY**



**Criteria for the Assessment of the Total Effect of Treatment:-**

For the assessment of the total effect of therapy, the following six categories were taken into consideration.

1. Cured: - 100% relief in symptoms & sign & clinical investigation.
2. Markedly Improved: - More than 75% relief in symptoms & sign.
3. Improved: - More than 50% relief in symptoms & sign.
4. Benefited: - More than 25% relief in symptom & sign.
5. Stable:- Checking of the progression of the disease without improvement in symptoms &
6. Deteriorated: - Worsening of the original symptoms & sign during treatment.



**AFTER TREATMENT**

**Thrombosed and Inflamed Haemorrhoids**

**PERIANAL HAEMATOMA BEFORE TREATMENT**



**During Leech Application**



**After Three settings**



**Result :-**

Observations and Result shows that there is markedly improvement in sign and symptoms of patients and patients get relief from pain tenderness and swelling, showing Leech can be used as a weapon for minimal invasive surgical procedure.

**Discussion:**

The pioneer of this therapy is Acharya Sushruta (2000 BC). He has elaborated leech application (Jalaukavacharana) under the topic of bloodletting (Raktamokshana). Similar treatment was also described as early as 200 BC for mental illness and headaches as reported by Adams and Lassen.

Recently in some western countries, plastic surgeons have tried leech therapy to increase the possibility of take of the grafts. The rationale for such use has been that greater capillary perfusion and hence better tissue healing occurs due to decreased venous congestion and oedema following bloodletting by leech therapy. When the leech being fed they injects salivary component that inhibit both

the platelet aggregation and the coagulation escalate thus releasing the venous congestion and induces neo-vascularization, thus as producing venous decongestion, analgesic and anti-inflammatory effects, reducing hyper pigmentation, increase the micro capillaries circulation, improves wound healing. Patients were monitored closely for decrease in pain, swelling, local temperature, dedebriement action and improvement in venous circulation. So it is helpfull in many Anorectal condition as easy, amiable, low cost, minimum instrumentation, less complication, less hospital stay, and fulfil other all requirement of minimal access and invasive techniques of surgery like minimal trauma, bleeding, tissue loss etc.

**Conclusion :-**

1. It can be concluded that LEECH Therapy has unique features that are early recognized & it can be used effectively in management of Inflamed & thrombosed piles, Hematoma.
2. It may be used for the restoration of normal health through the prophylactic & palliative action.
3. It may produce better result a singly & as an adjuvant therapy with drugs like inflamed thrombosed piles, Haematoma
4. However principal investigator suggests that there is need of present era to develop standard operative procedure (SOP) & scientific parameter with controlled clinical study to find out mode of action of leech therapy.
5. Leech therapy is contraindicated in treatment of medical condition like hemorrhagic diseases like hemophilia, severe Anemia, Hypotension Active Tuberculosis, High Fever, Immuno-compromised patient.
6. Doesn't required any antibiotic, anti-inflammatory & anti-viral drugs, but in some cases we can give antibiotic as per necessity.
7. It can be used in Rural area & in OPD basis.
8. It is very effective in the patient who are not fit for surgery, even though we can apply in pediatric patients.
9. There is no pain in Leech application as compared to surgical incision. The other symptoms of inflammation like redness,

tenderness were reduced & local temperature came to normal.

10. The treatment doesn't have any side effect, but I found during study blood oozes for 3-4 hours, local itching, scarring, slight fever, vasovagal attack, super infection allergy, sepsis transmission??

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