



AYURVEDIC MANAGEMENT OF CELLULITIS WITH SPECIAL REFERENCE TO *VRANA SHOPHA* – A CASE REPORT

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ABSTRACT:

Vranasopha is *Raktapradoshaja vyadhi* characterized by spreading, nodular, equal or unequal elevation, seated in *Twacha* or *Mamsa Dhatu* with vitiated *Doshas* present in one part of body¹ which resembles to features of Cellulitis in modern science.

Cellulitis is spreading type of inflammation of subcutaneous tissue generally associated with bacterial infection. Characteristic features of inflammation i.e., Pain, Redness, Tenderness, Swelling are landmarks of Cellulitis².

Varnasopha is also premonitory *Avastha of Vrana* (wound) and if left untreated leads to formation of *Vrana*. *Achaarya Sushruta* has given prime importance to the concept of *Vrana* and for its management in effective way he has mentioned *Shasti Upakarma*. From *Apatarpana* (fasting) to *Virechana* for management of *Vranasopha* and remaining for *Vrana*. Among them one important parasurgical procedure is *Rakta mokshana* (bloodletting) and of them one is *Jalaukavacharana* (Leech therapy), which is most effective therapy because for its medicinal values. *Jalaukavacharana* is gentle method for removal of blood vitiated by *Pitta dosha*. *Jalauka* is known as “*Hirudo Medicinalis*”.

A case of 80 years/male patient came to OPD with complaints of *Vedana* (pain), *Pada Sopha* (swelling on left leg) *Kandu* (itching) at left foot region since 15 days and was diagnosed as *Vrana Shopha* and treatment planned was *Pada Avagaha* and *Jaloukavacharana* with *Samana Aushadhis* which showed marked improvement in treating the disease.

KEYWORDS: - *Vrana Sopha*, *Jalaukavacharana*, *Pada Avagaha*, Cellulitis, Leech Therapy.

INTRODUCTION:

Vrana Shopha (Cellulitis) is the premonitory stage of *Vrana* (wound)³, *Acharya Sushruta* defined *Sopha* as localized swelling involving the skin and the underlying flesh which may be even or uneven, massive and knotty or nodular in consistency and described about its classification, symptoms, complications and management by explaining the surgical aspects of *Shopha* (an inflammatory condition/ localized swelling) and *Vrana* (wound)⁴. Pathogenesis is described as initially the vitiated *Vata Dosh* displaces *Kapha*, *Pitta* and *Rakta* to different *Shrotas* of the body. Further, these morbid *Doshas* obstruct the

path of *Vayu* and causes accumulation of *Kapha*, *Pitta* and *Rakta* in between *Twak* (skin) and *Mamsa* (muscle) which results in a *Shopha*⁵.

Vrana Shopha is been classified into 3 progressive stages:-

1. *Amawastha* (just early stage of inflammatory process),
2. *Pachyamanawasth* (true inflammatory stage) and
3. *Pakwawastha* (suppurative stage) respectively.⁶

Acharya Sushruta has described *Vrana Shopha* into 6 types based on the vitiation of *Dosha* - *Vatika*, *Paittika*, *Kaphaja*, *Shonita*, *Sannipattaja* and *Agantuja*. *Acharyas* has differentiated them based on their *Lakshanas* (symptoms), such as colour, pain etc. *Acharya Sushruta* explained the concept of *Shatkriyakala* (six stages of disease manifestation) for the first time⁷. *Charaka* has mentioned three types of *Shopha* *Vataja*, *Pittaja* and *Kaphaja*⁸.

Cellulitis is spreading type of inflammation of subcutaneous tissue generally associated with bacterial infection. Characteristic features of inflammation i.e., Pain, Redness, Tenderness, Swelling are landmarks of Cellulitis⁹.

Inflammation, it is a part of the complex biological response of body tissue to harmful stimuli, such as pathogens, damaged cells or irritants and is a protective response involving immune cells, blood vessels and molecular mediators¹⁰. The function of inflammation is to eliminate or dilute the cause of injury, to remove the necrosed cells and tissues to pave the way for repair by bringing more blood supply to injured area. Management of cellulitis should be aimed to give quick relief and avoid further complication. In contemporary medicine appropriate Anti-inflammatory and antibiotic drugs are used to control this condition. Sign and symptoms of *Vranashopha* are similar to cellulitis¹¹.

Acharya Sushruta described Sixty procedures (*Shasti Upakarma*) for management of *Vrana Shopha* and *Vrana* (wound), from *Apatarpana* (fasting) to *Virechana* were mentioned for management of *Vranashopha* and remaining for *Vrana*¹². *Avasechana* i.e., *Rakta mokshana* (bloodletting) is one amongst them which eliminates the vitiated doshas and leads to early reduction in the disease, *Jalaukavacharana* (Leech therapy) is considered as most effective therapy for the removal of *Pitta Dosha* vitiated blood¹³.

Jalaukavacharana is used to treat a variety of inflammatory conditions. Its mode of action depends on the injection of leech saliva into patient's tissues during the process of blood sucking. It contains various bioactive constituent which possesses anti-inflammatory, analgesic, antioxidant, thrombolytic, anti-coagulant, vasodilator and blood circulation enhancing properties. Hirudotherapy is an ancient bloodletting technique firstly described in Ayurveda by the name of *Jalaukavacharana*¹⁴. It is necessary to remove vitiated *Rakta* for complete cure of the disease¹⁵.

So, for this study *Raktamokshana* with *Jaloukavacharana* and *Pada Avagaha* with *Panchvalkala Kashaya* is used to analyse the therapeutic effect in the management of *Vrana Shopha* (Cellulitis).

AIMS AND OBJECTIVES:

To evaluate the efficacy of Ayurvedic management i.e, *Jaloukavachara* in *Vrana Shopa* w.s.r. to cellulitis

MATERIALS AND METHODS:

CASE HISTORY: -

An 80 yrs. old male patient presented with the chief complaints of pain (*Vedana*), swelling on left leg, (*Pada Sopa*), burning sensation (*Daha*), itching (*Kandu*) at left foot region since 15 days. According to the patient before 1 month swelling and roughness of left foot started and later on after 10 days itching and pain developed in left lower limb, later on scaling appeared with discolouration and swelling increased.

Patient consulted family physician and took Tab Augmentin 625 mg, Tab Zerodol-SP but had no relief so he approached our hospital for further management.

Patient was examined; both systemic and local examination was done.

Vital parameters: - Pulse: -86/min, Respiratory rate: - 20/min, Bp: -130/70 mm of Hg Temperature: -98.2 F.

Local inspection (Left lower limb): -

1. Swelling over dorsum, lateral of foot and lower 1/3 of leg.
2. Discolouration over dorsum, lateral of foot and lower 1/3 of leg (Blackishness).
3. On palpation – mild raise in temperature present.
4. Tenderness - Present.

PAST HISTORY: Patient is K/C/O - H.T.N, N/K/C/O D.M-2, COPD.

INVESTIGATIONS:

Blood Investigations:

Complete Blood count - TLC = 16000 cells/cmm

RBS - 114 mg %

Sr. Creatinine - 1.4 mg %

Sr. Electrolytes – (Na - 136 mmol/L, K - 3.8 mEq/L, Ca - 1.14 mmol/L)

Urine routine and microscopic: All parameters are under normal limits.

2D Echocardiography: Concentric LVH, LEEF - 60%, Mitral annular calcification with GR-I MR, Sclerotic AVD with GR-I AR, Dilated PA, Mild PAH, Mild pericardial effusion.

Venous doppler left lower limb: Multiple dilated torturous varicosities at medial and lateral aspect of leg with two incompetent perforators.

METHODOLOGY TREATMENT GIVEN:

Pada Avagaha and *Jalaukavacharana* (Leech Therapy) was done followed by dressing. The oral medication was administered for 28 days as follow: -

Oral Medications

Sr. No.	Oral medication	Dosage	Anupana
1.	<i>Triphala Guggulu</i>	TID	<i>Ushnodaka</i>
2.	<i>Cap Grab</i>	TID	<i>Ushnodaka</i>
3.	<i>Manjisthadi Kadha</i>	20 ML BD	<i>Ushnodaka</i>

Patient was advised to have normal diet and regimen. Assessment on the subjective and objective changes with the treatment was made on every sitting 0th, 7th, 14th, 21st day. Follow up observation of 7 days for noticing any recurrence of sign and symptoms.

Procedure:

1. *Padavagaha (Panchavalkala kashaya)* for left lower limb.
2. *Jalaukavacharana (Leech Application)*

Procedure was carried out in following 3 steps: -

Purva Karma (Pre-Procedure Preparation):

Material used for the procedures were; surgical gloves, kidney tray, bowls, *Haridra Churna*, gauze piece, bandage, disposable needle were kept ready. *Padavagaha (Panchavalkala Kashaya)* for left lower limb given to make the scaliness loose and gentle rubbing was done to debride the scaliness over left foot. *Jalauka* (Leech) were placed in the water mixed with *Haridra Churna* (turmeric powder) for two to three minutes for activation of leeches. The affected region was cleaned then dried up and rubbed with dry gauze piece. *Jalauka* (leech) was held nearer to the anterior sucker with the help of gauze piece.

Pradhan Karma (Procedure of leech application):

Leech was applied at the site of *Vrana Shopha*. Leech bite the affected area spontaneously and sucked the blood. Once leech started to suck the blood, its neck part looks elevated that indicates that sucking was well and in progress. During suckling wavy movement was visible throughout its body. The body part was covered with a wet swab except his mouth to create a natural atmosphere and it was maintained throughout the process by pouring of some water on it.

Paschat Karma (post procedure):

Immediately after removal of leech *Haridra churna* (turmeric powder) was applied and was bandaged tightly. When *Jalauka* give up automatically, then it was kept in a kidney tray and *Haridra churna* was sprinkled on to its mouth. *Jalauka* (leech) automatically vomit the ingested blood. Leech was squeezed smoothly to remove all the remnant part of ingested blood. It is very important to remove all ingested blood otherwise leech will suffer from *Indramadha* and die. *Jalauka* (leech) were kept in container having clean water separately.

	0 th day	7 th day	14 th day	21 st day	28 th day
Number of <i>Jalauka</i> (leech) used	1	4	1	4	0

**CRITERIA
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RESULT:**Subjective parameters**

- Pain
- Burning sensation

Objective parameters

- Oedema

Subjective Parameters

Pain

Sr. No.	Assessment Criteria	Grade
1	Absence of pain is considered as nil	1
2	Pain which was tolerable, negligible considered as mild	2
3	Constant, tolerable pain was considered as moderate	3
4	Pain which was intolerable, constant and makes to seek medical help as early possible was considered as severe	4

Burning sensation

Sr. No.	Assessment Criteria	Grade
1	Absence of burning sensation is considered as nil	1
2	Burning sensation which was tolerable, negligible considered as mild	2
3	Constant, tolerable burning sensation was considered as moderate	3
4	Burning sensation which was intolerable, constant and makes to seek medical help as early possible was considered as severe	4

Objective parameters

Oedema – Oedema will be assessed on the basis of circumference measured at foot, ankle and lower 1/3 of leg respectively and taking measurement of Right lower limb (healthy) of same patient as standard.

OBSERVATION AND RESULT

Sign and Symptoms	0 th day		7 th day		14 th day		21 st day		28 th day		%
Pain	3		3		2		1		0		100
Burning sensation	3		2		2		1		0		100
Oedema (cm)	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Rt.	Lt.	Lt. (%)
	27.4	31.3	27.4	30.9	27.4	29.3	27.4	28.3	27.4	28.1	89.7
	36.1	39.5	36.1	38.8	36.1	37.9	36.1	37.1	36.1	36.8	93.1
	25.3	26.7	25.3	26.5	25.3	26.3	25.3	26.1	25.3	25.9	97



Fig.1: Before treatment (0th Day)



Fig 2: During *Jalauka* application (7th Day)



Fig 3 : 14nd Day – *Jalauka* Application



Fig 4: 21st Day –*Pada avagaha, Lekhana Karma* with *Jalauka* application.



Fig 4: 28th Day (Follow up)

DISCUSSION:

The case reported to OPD was a clear case of *Vrana Sopha* (cellulitis) with vitiation of *Pitta Dosha* and *Rakta Dushti* and *Vata Avarodha*, so treatment planned for do *Pitta Shamana*, *Rakta Shuddi* and *Vatanulomana*. Keeping this in mind *Avasechana* i.e., *Rakta mokshana* (bloodletting) with the help of *Jalaukavacharana* (leech application) was selected as the treatment protocol, Leech therapy is considered as most unique and effective method of bloodletting in infected wounds and in abscess management. It can be done even in females, children, old and (*Sukumaras*) patients having poor threshold to pain. According to

Acharya Sushruta, Jalaukavacharana can be practiced in all inflammatory, suppurative and painful conditions to relieve pain & inhibit suppuration.

Here main complaints of patient were pain, burning sensation and oedema and as we know without *Vata* pain doesn't occur and without *Pitta* and *Rakta* burning sensation doesn't occur. *Jalaukavacharana* will remove vitiated *Rakta* and other *Dosha* from the site and leads to *Strotosodhana* and *Vata Anulomana*. Hence reduction in symptoms like pain and burning sensation was found and later reduction of oedema noticed.

Probable Mode of Action of Pada Avagaha

Padavagaha (*panchavalkala Kashaya*) loosens the scabiness, reduces local congestion and reduces inflammation and makes the local skin free from dirt and on gentle rubbing leads to shed of the scabiness. Slight high temperature then body temperature leads to vasodilation and profuse more blood to local tissue and pave the way for repair.

Probable Mode of Action of Jalaukavacharana (Leech Therapy)

The jaws of the leech pierce the skin so that the potent biologically active substances can penetrate into the deeper tissues. Leech saliva having many therapeutic contents like hirudin, bdellins, Hyaluronidase, etc; among them, Eglins and Bdelellins have anti-inflammatory properties. Release of histamines and acetylcholine act as vasodilators and anaesthetic substance anaesthetises the site and leads to more blood supply and reduces inflammation Hyaluronidase (spreading factor), an enzyme in leech saliva, further facilitates the penetration and diffusion of these pharmacologically active substances into the tissues¹⁶.

Tissue permeability, restored with the help of hyaluronidase, promotes the elimination of tissue and circulatory-hypoxia as well as local swelling. The persistent bleeding largely potentiates tissue decongestion and also relieve capillary network which decrease venous congestion. positive changes of local hemodynamic and improvement of hemorheology will increase oxygen supply, improve the tissue metabolism, and eliminates the tissue ischemia¹⁷.

Oral medication like *Triphala Guggulu* is indicated in *Vranasopha*¹⁸, *Bhagandara*, *Arsha* etc. diseases and ingredients of *Triphala Guggulu* are having *Tikta*, *Kashaya*, *Madhura rasa*, *Ushna Veerya*, *Katu Vipaka*, and possess *Deepaniya*, *Vatashamana*, anti-inflammatory, anti-microbial and analgesic properties¹⁹.

Cap. Grab is having *Vranapahari Rasa*, *Triphala Guggulu*, *Gandhaka Rasayana*, *Arogyavardhini vati*, *Guduchi* and *Manjistha* which are having anti-inflammatory, anti-microbial properties help in overcoming the inflammation in *Vranasopha*²⁰.

*Manjisthadi Kadha*²¹ is having *Manjistha*, *Triphala*, *Tikta*, *Vacha*, *Darunisha*, *Amrta* and *Nimba* which are having *Sothahara* property due to *Katu Vipaka*, *Kapha-pittahara karma*²².

CONCLUSION:

One should not under estimate the cellulitis, it can spread very quickly and may progress rapidly to necrotising fasciitis it should be treated aggressively and monitored on an on-going basis. Present study underlines the importance of *Jalaukavacharana* in management of *Vrana Sopha* (cellulitis) and even though higher generation antibiotics have evolved infection still dominates and play crucial role in morbidity and mortality rate, here *Jalaukavacharana* provided significant relief in the symptoms of *Vrana Sopha* (cellulitis) like *Vedana* (pain), *Daha* (burning sensation) and *Shopha* (swelling on left foot) and *Padavagaha* helped in debriding the scabiness. *Jalaukavacharana* is safest method among *Raktamokshana*. The aim of leech application was to avoid the need for surgical intervention. This leech therapy proves to be effective, time saving, affordable and acceptable treatment.

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