



Efficacy of *Jalaukavacharana* in Arthritis of Left *Carpometacarpal* joint

w. s. r. to *Sandhigatavata* - Case Report

Vinay Sonambekar¹, Pankaj Dixit², Santosh Pathak³, Nilam Kisan Bahiram*⁴

1. Professor, HOD & Guide,
2. Associate Professor,
3. Assistant Professor,
4. PG Scholar,

Shalyatantra Dept., A.S.S Ayurved College, Nasik, Maharashtra.

Corresponding author: neelambahiram13@gmail.com

Abstract :

Osteoarthritis is also known as Degenerative Arthritis. It results from breakdown of joint cartilage and underlying bones. A joint where two bones come together, the ends of these bones covered with protective tissue called cartilage. In osteoarthritis, this cartilage breaks down, causing the bones within the joint to rub together. This causes pain, stiffness and other symptoms.

We hereby report a case of 50 year old female patient complaining of Pain, swelling and restricted movements of 1st *carpometacarpal* joint of left hand. She was being diagnosed as a case of osteoarthritis (*Sandhigata vata*). Treatment was planned as *jalaukavacharan* and oral medicines. Visual Analogue Scale for Pain, Swelling score, for assessing daily routine work ability were used to evaluate the efficacy of the treatment.

There was a significant improvement in the Visual analogue scale of pain, Range of movements and daily routine work ability. The Quality of life of patient improved significantly by the proper application of internal and external treatment. Aim of study is to evaluate the effect of *jalaukavacharana* in Osteoarthritis¹².

Keywords: Osteoarthritis, leech therapy, *jalaukavacharan*, bloodletting, *antiinflammatory*, analgesic.

Introduction :

In our day to day life, changing lifestyle, variety of trauma and injuries happen in number of patients. Such type of injuries causes localized swelling and stiffness around affected area which is a long term side effect of traumatic injuries. Sometimes it requires surgical intervention or long term NSAIDs still the symptoms not relieved completely. As we all know,

Osteoarthritis most prevalent form of Arthritis, with risk of mobility, disability of the part. Osteoarthritis is multifactorial process in which mechanical factors have a central role and it is characterized by changes in structure and function of whole joint.

In present era, there is not specific drug or therapeutic in present to treat osteoarthritis completely. In Ayurveda, the disease *sandhivata* resembles with osteoarthritis which is described under *Vatavyadhi*. The NSAID's are main drug of choice in modern medicine have lots of side effects and hence not useful for long term therapy.

While seeking the treatment for osteoarthritis, even though people are usually motivated towards new advanced medical science and technology. *Ayurveda*, offers better cure without any complication. like *jalaaukavacharan* i.e. leech therapy. its included in ayurveda parasurgical procedures. it reduces localized symptoms in chronic diseases.

Raktamokshan is indicated in various type of diseases. *Jalaukavacharana* is the ancient technique used for *Raktmokshana*, here *Jalauka* means leeches and *avcharana* means application. *Jalauka* is one of the tool for *Raktmokshana*, among *Shrung*, *Alabu* and *Prachhana*, where *Jalauka*, *Shrung*, *Alabu* are used for *Pitta*, *Vata*, *Kahpa Dosh* *Vyadhi* respectively. *Jalaukavacharana* (leech therapy) is a non-surgical type of *Raktmokshana* and considered as the most unique and effective method of bloodletting.

Case Report :

A 50 years old female with complaints of severe pain, tenderness, stiffness around

1st carpo-metacarpal joint i.e. at base of left thumb region since 8 months. She had almost completely loss of movement and flexibility of that joint along with severe pain and spasm. With medical history of Koch's along with suppurative arthritis before 30 years at wrist joint of left hand. She had undergone tubal ligation SA before 25 years. Was came to OPD of *Shalyatantra* department of our hospital.

In local examination she had mild swelling at base of left thumb region, range of motion at left wrist joint was < 20% .local temperature was mildly raised. We advised her basic investigations like CBC, random BSL, along with MRI of left hand.

Radiographic MRI findings are-

Moderate to severe changes of Osteoarthritis in 1stmetacarpocarpal joint. With loss of articular cartilage, irregularity of *subchondral* bone, *subchondral* marrow edema, *subchondral* cyst, prominent marginal *osteophytes*, with mild *subluxation* of 1stcarpo metacarpal joint.

Materials and methods:

Jalaukavacharan has important role as thrombolytic and anti-inflammatory activity, by removing the local impurities and toxins⁷. Its type of bloodletting helps to eliminate vitiated *doshas* mainly *pittadosha*. There are two species of therapeutic medicinal leeches- *hirudo-medicinalis* and *hirudo-mychaelseni*. This is a segmented worm of phylum- *Annelida*. It has two suckers, one at each end, caudal (back end) and *rostral* (front end). Front end with three sharp jaws that leaves a `Y` shaped bite. During feeding it can suck around³.

Saliva of *jalauka* contains more than 80 bioactive substances which acts in

different ways at affected sites¹². *Hirudo* medicinal leech, which is indicated for medical use was applied locally at base of left thumb. Procedure was divided in 3 parts⁴.

1. **Purva karma**- Purification of leech by pouring the leech in water mixed with turmeric powder. Cleaning of part of body to which *jalauka* should be applied .
2. **Pradhan karma**-Before application of leech, prick the skin with sterile and sharp needle so drop of blood
 - Along with oral medications as follows-

comes out and then apply leech through its front end and cover the leech through wet cotton.

3. **Pachhat karma**- After 30 minutes leech should be removed by itself or apply turmeric powder on mouth of leech . *Vaman* should be done after that leech should be kept inside clean water. Do not use the leech for further 7 days .

This procedure was done on patient once in week for subsequent 3 week

Sr. No.	Drug Given	Dose	Probable Mode Of Action	Duration
1.	<i>Tab. Amruta Guggulu</i>	1 gm BD	Balances <i>tridosha</i> and reduces inflammation in joints.	15 days
2.	<i>Tab. Vatari Forte</i>	1 gm BD	Reduces joint pain, stiffness, inflammation.	15 days
3.	<i>Tab. Ekangavir Rasa</i>	500 mg BD	Balances tridosha	15 days
4.	<i>NSAID's</i>	500 mg BD	Reduces joint pain, stiffness, inflammation	15 days

Dashang lepa is used for local application once in a day.

Assessment Criteria

During local examination at our OPD, there was intense pain at 1st carpo metacarpal joint of left hand, which was measured up to 8th grade according VAS scale. Localized tenderness present which got elicited on application of moderate pressure and range of motion of affected joint was reduced less than 20%. restriction of movement of that joint was present.

LEECH THERAPY-

Only six types of non-poisonous leeches are used for medicinal purposes, out of a

total of twelve. Because of its quick blood sucking capacity, the *shankumukhi* kind of leech is preferred for medical uses. According to *Ayurveda's* classical description, the leech should be neither too long nor too little for therapeutic purposes.

For appropriate aeration, leech should be stored in a well-labeled container with numerous apertures on the top. The temperature should be kept between 5 - 27 degrees. The container's water should be *dechlorinated* and replaced every 5 to 6 days. It is preferable to keep the leeches out of direct sunlight.

Observation Table-table

<i>Title</i>	<i>Before treatment</i>	<i>1st sitting (day 1st)</i>	<i>2nd sitting (7th Day)</i>	<i>3rd sitting (14th Day)</i>
<i>Pain (VAS Scale)</i>	8	2	1	0
<i>Tenderness</i>	3	2	2	1
<i>ROM</i>	<i>Less than 20 %</i>	<i>Up to 40%</i>	<i>Up to 50%</i>	<i>Up to 90%</i>

• **Result :**

<i>Title</i>	<i>Score before treatment</i>	<i>Score after treatment</i>
<i>Pain (VAS Scale)</i>	8	0
<i>tenderness</i>	3	0
<i>Range of Motion</i>	<i><20 degree</i>	<i>Upto 90 degrees</i>

• **Image (jalaukavacharan on affected site)-**



Observation & Result-

During the whole study period it was observed that pain and stiffness started decreasing after first sitting of leech therapy and after the last follow ups there was significant decrease in symptoms including pain, tenderness, swelling etc. The marks of leech bite is present on affected area of patient. We advised *Tiktakshirbasti* after our treatment for further treatment along with Physiotherapy.

Discussion-

Acharya Sushruta has elaborated leech application under the topic *Jalaukavacharan*⁴. There were so many references found in our samhitas that *Acharya Charak* and *Sushruta* used leech therapy in treatment of many incurable wounds and other medical conditions such as *Kushta*², *Shwitra*⁶, *Vatarakta*, *Sandhigatavata* etc.

The main symptom in osteoarthritis is pain, stiffness and swelling around affected joint. Pain can be range from mild to severe. Bloodletting by *jalauka*

is used in variety of inflammatory conditions especially when *pitta dosha* is vitiated and gets lodged in blood. Its mode of action depends upon the injection of leech saliva into patients tissue during the process of blood sucking .Leech saliva contains bioactive substances which possess constituents anti-inflammatory,analgesic,thrombolytic,vasodilator,anticoagulant and blood circulation enhancing properties .

Reduction in pain after *jalaukavacharan* is highly significant . In our patient also, *jalaukavacharan* had significantly reduced the pain, inflammation

Component and effects of leech saliva⁷

Sr. no.	Component of leech saliva	Probable mode of action
1.	<i>Hirudin</i>	Inhibits blood coagulation by binding to thrombin
2.	<i>Calin</i>	Inhibits blood coagulation.
3.	<i>Hirustasin inhibits kallikrein</i>	Responsible for normal level of blood pressure in intrinsic coagulation.
4.	<i>Hyaluronidase</i>	Increases interstitial viscosity, antibiotic effect
5.	<i>Eglins</i>	Anti inflammatory ,inhibits the activity of <i>chymotrypsin, subtilism, cathepsin G chymase, elastase.</i>
6.	<i>Bdellins</i>	Ant-inflammatory, inhibits <i>plasmin, acrosin, trypsin.</i>
7.	<i>Factor Xa Inhibitor</i>	Inhibits the activity of coagulation factor Xa – conversion of <i>prothrombin</i> to thrombin .
8.	<i>Histamin</i>	Vasodilators increases the inflow of blood flow at the bite site .
9.	<i>Carboxypeptidase A inhibitor</i>	Increases the inflow of blood flow at the bite site.
10.	<i>Collagenase</i>	Facilitate tissue penetration.

In our case, we observed clinically reduction in localized symptoms and improvement of range of motion in joint movement. According to *Yogaratanakara*

and tenderness. According to *Ayurveda*, inflammation is because of vitiation of *vata* and *raktadosha (Pitta)*. Hence by applying *jalauka* there is reduction of inflammation as it is well versed that leeches first suck the vitiated blood resulting in reduction in *Rakta dushti* and also there is removal of *strotorodh* of *vata dosha*. This both changes reduced the pain and inflammation⁶.

As per modern science ,leech application not only remove blood from that affected sites but also injects biologically active substances which help to manage various ailments.

mode of action of leech at affected site described as

गृह्णाति शोणितं शृंगं दशांगुलमित्तबलात्।

जलौका हस्तमात्रं तु तुम्बीच द्वादशांगुलम्।।

पदमंगुलमात्रं स्याच्छिरा सर्वांगशोधिनी।¹⁶

(यो.र.भा.ग.पान २९२)

As per *shloka*, *prachchhan karma* is used for localized pain as it has an impact up to 1 *anguli* area from its site. Bloodletting by *Alabu* has an impact up to the 12 *anguli* area of site. *Jalauka* are used for deep seated pain and their mode of action extends upto "*hasta pramana*" [*Palm size of the patient*]. Thus *jalaukavacharan* shows more efficacy by covering large area through its mode of action¹⁵.

Patient perspective :

"I feel much better with my joint pain. I could able to stop completely taking pain killers. I am happy that I could look after my daily activities and other household work."

Informed consent :An informed written consent was obtained from the patient for reporting this case.

References -

1. Parikha Rasiklala J., editor. *Madhava, Madhava Nidana with Madhukosha, Kushthanidana, Adhyaya*. Vol. 49. Ahmadabad: Sastusahitya Vardhaka Karyalaya; 2003. p. 23. [[Google Scholar](#)]
2. Acharya Vaidya Yadavaji Trikamji., editor. Vol. 24. Varanasi: Chaukhamba Sanskrit Sansthan; 1990. Charaka, Charakasamhita, Sutrasthana, Vidhishonitiya Adhyaya; p. 12. [[Google Scholar](#)]
3. Acharya Vaidya Yadavaji Trikamji, Acharya Narayana Ram., editors. 2nd ed. Vol. 8. Varanasi: Chaukhamba Surbharti Prakashan; 1990. Susruta, Susrutasamhita, Sutrasthana,

Shastravacharniya Adhyaya; p. 23. [[Google Scholar](#)]

4. Susruta Samhita. *Sutra Sthana Jalaukavacharniya Adhyaya*. 13:4. [[Google Scholar](#)]
5. Susruta Samhita. *Sutra Sthana Jalaukavacharniya Adhyaya*. 13:40. [[Google Scholar](#)]
6. Susruta Samhita. *Sutra Sthana Shonitavarnaniya Adhyaya*. 14:24. [[Google Scholar](#)]
7. Niagara Medical Leeches (Verbana LLC) (c) 2005-2010. [Last accessed on 2011 Mar 01]. Available from: <http://www.leeches.biz/>
8. Auckland allergy Clinic Eczema. [Last updated on 2010 Jan 16; cited on 2002 Nov 10]. Available from: <http://www.allergyclinic.co.nz/guides/13.html> .
9. Acharya Vaidya Yadavaji Trikamji., editor. 2nd ed. Vol. 20. Varanasi: Chaukhamba Sanskrit Sansthan; 1990. Charaka, Charakasamhita, Sutrasthana, Maharoga Adhyaya; p. 18. [[Google Scholar](#)]
10. Ibidem Charaka Samhita. *Sutrasthana Maharoga Adhyaya*. 20:15. [[Google Scholar](#)]
11. Vol. 1. Mumbai: Nirnaya Sagar; 2006. Sharangadhara, Sharamgdharasamhita Purvakhanda, Roga
12. Ayu.article ;efficacy of leech therapy in management of osteoarthritis (sandhivata) P.K.Rai,a.k. Singh,a.k. Dwivedi .ayu :2011 ,apr-june :32 (2) 213-217
13. International research journal of pharmacy 2011,2(12):172-4.article-

Analgesic and antiinflammatory activity of leech therapy in management of arthritis. Singh A .K,Singh O.P.

14. kbobloch k,gohritz A,Busch K,spies m ,Vogt PM,hirudo -medicinalis leech application plastic & reconstruction micosurgery _A liturature review (Article in

German).handchir mikrochirplast chir 2007,39(2);103-7

15. Ashtang sangraha vagbhata.ed.varanasi ,Chaukhamba vishwabharati ,2006
16. Yogaratnakara by vaidya lakshmipati shashri, chaukhambha prakashan, varanasi, edition; 2010.

Conflict of Interest: Non

DOI:

Source of funding: Nil

<https://doi.org/10.52482/ayurlog.v9i03.889>

Cite this article:

Efficacy of Jalaukavacharana in Arthritis of Left Carpometacarpal joint w. s. r. to Sandhigatavata - Case Report | Vinay Sonambekar, Pankaj Dixit, Santosh Pathak, Nilam Kisan Bahiram

Ayurlog: National Journal of Research in Ayurved Science- 2021; (09) (03):01- 07

