Leech Application in Varicose Ulcer: A Single Case Study

Zahidul Islam¹, Namita Baishya², Champak Medhi³, Binod Kalita⁴

¹Post Graduate Scholar, Dept. of Shalya Tantra, Govt. Ayurvedic College, Guwahati, Assam, India.
²Assistant Professor, Dept. of Shalya Tantra, Govt. Ayurvedic College, Guwahati, Assam, India.
³Associate Professor, Dept. of Shalya Tantra, Govt. Ayurvedic College, Guwahati, Assam, India.

ABSTRACT

A female patient aged 47 Years from Lankeswar, Guwahati, Assam approached Shalya OPD of Govt. Ayurvedic College and Hospital, Guwahati with complain of an ulcer over the left lower leg with pain and swelling since 6 months. Pain was very intense and whole foot was swollen. She was a diagnosed case of varicose veins since 1 year. On examination antero-posterior aspect of the ulcer was noticed. The ulcer was characteristically covered with unhealthy granulation tissue with slough, pus and foul smell. Color Doppler revealed partial SPJ incompetence in left leg. Case was diagnosed as a chronic unhealed varicose ulcer. After proper investigation the patient was planned for Jalukaavacharana to evaluate the efficacy of Jalukaavacharan in the management of Dushta Vrana. Total 4 settings of Jalukaavacharana was done.

Key words: Dusta Vrana, Venous Ulcer, Varicose Vein, Jaluka Avacharana

INTRODUCTION

A female patient 47 years came with complains of an ulcer over the left lower leg with pain and swelling since 6 months. Pain was very intense and whole foot was swollen. She was a diagnosed case of varicose veins since 1 year. On examination antero-posterior aspect of the ulcer was noticed. The ulcer was characteristically covered with unhealthy granulation tissue with slough, pus and foul smell. Family history was positive for varicose vein.

General examination

Pulse: 78/ min
Temp: 98.70 F

Address for correspondence:
Dr. Zahidul Islam
Post Graduate Scholar, Dept. of Shalya Tantra, Govt. Ayurvedic College, Guwahati, Assam, India.
E-mail: izahidul992@gmail.com
Submission Date: 13/06/2023 Accepted Date: 25/07/2023

BP: 130/90mmhg
R.R.: 21/ min.
Kshudha: Prakrut
Nidra: Swabika
Mala: Badha
Mutra: Samyak
Dosha: Vatapradhana Kapha
Dushya: Twak, Mamsa, Sira
Mala: Purisha
Srotas: Rasa, Rakta, Mamsa, Purisha and Manovaha Srotas

Colour Doppler

Primary varicose veins with left saphenopopliteal incompetence and incompetent perforators explain in the text
Sub-cutaneous edema on lower leg bilaterally
No evidence of DVT or Ischemia.
Diagnosis: Dushta Vrana (Varicose Ulcer)

Treatment given

Daily dressing with Triphala Kwatha and Ropan Tail.
Four settings of Jalauvacharan done keeping gap of 7 days.

In each setting Jalaukavacharan 3-4 Leech were applied.

**MATERIALS AND METHODS**

**Material used for Jalaukavacharana**

Jalauka, Haridra powder, sterilized gauze pieces, dressing pad, cotton, gloves, disposable syringe, kidney tray, distilled water.

**Method**

The following treatment schedule was executed:

Patient was undergone four settings of Jalauka Avacharan (once in a week) on OPD basis. Jalauka Avacharan was done in a standard protocol as described by Acharya Sushruta.

**Jalaukavacharana Vidhi**

The procedure can be briefed under three headings

1. Poorva Karma
2. Pradhana Karma
3. Paschat Karma

**Poorva Karma (preoperative procedure)**

This includes

a) Collection of required materials  
b) Preparation of patient  
c) Preparation of Jalauka

**Preparation of patient**

Indicated person for the Jalaukavacharana should be made to sit or sleep in supine position then rub with mud or cow dung over the affected area (non ulcerated area) where Jalaukavacharan is to be done. If Jalaukavacharana is planned at the site of wound one should not rub because it increases the pain, there Jalauka will be attracted by Gandh and Kledata of the Vrana.

**Preparation of Jalauka**

Jalauka body is smeared with a paste of Sarshapa and Rajani. Then Jalauka is kept in clean water for period of one Muhoortha (48 min). By this procedure leeches will get rid of exhaustion and become activated.

**Pradhana Karma (operative procedure)**

The patient is made to sit or lie on the bed. The area of the body where Raktamokshana is planned should be dried and allowed to bite by Jalauka. Jalauka will suck the blood by itself. If Jalauka does not bite or suck, a drop of milk or blood is to be shed on the surface or a small prick is to be made, in spite of all these if the Jalauka does not suck then another Jalauka is to be taken for Raktamokshana. If its face appears like the hoof of a horse and raises its neck (Ashvakhuravadanana) we can understand that it has started sucking blood. As soon as Jalauka starts sucking, wet white gauze should be covered on it, leaving its facial region.

After sucking enough amount of blood Jalauka leave the host by its own. If the Jalauka doesn’t leave and patient getting itching and pain at the site of Jalaukavacharana it is the indication of sucking pure blood and then Jalauka should be detached by sprinkling Saindhava Lavana Choorna at its mouth region.

**Identification of Shuddharakta Pana by Jalauka**

At the site of Jalauka bite if the person gets pain and itching sensation then it should be under stood that it is sucking pure blood then it should be removed. Jalauka sucks only Dushta Rakta from the site where Dushta and Shuddha Rakta are in combined form, like how the Hansa Pakshi drinks only pure milk even though it is mixed with water

**Paschat karma (postoperative procedure)**

a) Paschat Karma for Jalauka  
b) Paschat Karma for patient

**Paschat karma for Jalauka**

As soon as the Jalauka detaches from the patient body by itself or by force, a paste of Tandula Kandana (rice flour) is to be applied over its body and a mixture of Taila and Saindhava Lavana is smeared on its mouth. Then with the help of thumb and index finger of left hand tail end of the Jalauka should be caught then body of Jalauka is squeezed with the fingers of right hand towards its face in a reverse direction. This helps
Jalauka to vomit the sucked blood. This is continued until the Samyak Vamana Lakshanasa are achieved.

**Samyak Vamana Lakshanasa of Jalauka**

After Vamana Jalauka should be kept in vessel containing fresh water, if the Jalauka moves in the container actively, it is suggestive of proper Vamana. After proper Vamana, Jalauka becomes active and strong.

**Durvanta Lakshanasa of Jalauka**

If too much of vomiting, Jalauka becomes very weak or even may die. If vomiting is improper, it becomes intoxicated or lazy. If Jalauka becomes lethargic after leaving in water, and settles down in bottom of the vessel then Vamana should be carried out again. If it does not vomit the whole blood, then Jalauka gets a disease called Indramada or Raktamada.

**Preservation of Jalauka after Vamana**

After proper Vamana, Jalauka should be kept in water contained earthen pot. Jalauka once used should not be reused within seven days.

**Paschat Karma for patient**

Considering the status of the patient after the Jalaukavacharana management of its bite site should be done as follows

- In Samyakyoga - Shatadouya Ghritya Abyangya or Shatadouya Ghrityayukta Pichu Dharana at the site of Jalauka bite.

- In Heenayoga - Avagattana by Madhu and wound should be squeezed to cause blood flow.

- In Atiyoga - Sheetala Jala Parisekha, Pradeha and Bandana for arresting the hemorrhage.

- In Mithyayoga - Kashaya, Madhura, Sheeta, Ghritha Lepana should be done.

- If because of Sheeta Upachara, Vata aggravates and causes pain, itching, then Parishechana of warm ghee is to be done.

- Dressing was done with Jatyadi Taila and Triphala Kwatha regularly, where as "Leech Therapy" was repeated weekly for 4 sittings.

- Total duration for treatment was 30 days.

**Assessment**

Assessment was done on

1. Day - 01
2. Day - 07
3. Day - 14
4. Day - 21
5. Day - 30

Changes occurred within the treatment period has been noted on criteria of assessment.

**OBSERVATION**

Parameters of observation include discharge (Srava) peripheral hyper pigmentation, size of ulcer, granulation tissue and pain. Patient was observed on above parameters on every week for five weeks.

**Table 1: Parameters of Observations**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge</td>
<td>4= 100/</td>
</tr>
<tr>
<td></td>
<td>3=75/</td>
</tr>
<tr>
<td></td>
<td>2=50/</td>
</tr>
<tr>
<td></td>
<td>1=25/</td>
</tr>
<tr>
<td>Peripheral hyper pigmentation</td>
<td>4= 100/</td>
</tr>
<tr>
<td></td>
<td>3=75/</td>
</tr>
<tr>
<td></td>
<td>2=50/</td>
</tr>
<tr>
<td></td>
<td>1=25/</td>
</tr>
<tr>
<td>Size of ulcer [cm]</td>
<td>4= 100/</td>
</tr>
<tr>
<td></td>
<td>3=75/</td>
</tr>
<tr>
<td></td>
<td>2=50/</td>
</tr>
<tr>
<td></td>
<td>1=25/</td>
</tr>
<tr>
<td>Granulation tissue</td>
<td>4=100/</td>
</tr>
<tr>
<td></td>
<td>1=25/</td>
</tr>
<tr>
<td></td>
<td>2=50/</td>
</tr>
<tr>
<td></td>
<td>3=75/</td>
</tr>
<tr>
<td>Pain</td>
<td>4= 100/</td>
</tr>
<tr>
<td></td>
<td>3=75/</td>
</tr>
<tr>
<td></td>
<td>2=50/</td>
</tr>
<tr>
<td></td>
<td>1=25/</td>
</tr>
</tbody>
</table>

**Table 2: Progressive report**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>1st week</th>
<th>2nd week</th>
<th>3rd week</th>
<th>4th week</th>
<th>5th week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Discharge</td>
<td>100/</td>
<td>50/</td>
<td>25/</td>
<td>0/</td>
<td>0/</td>
</tr>
<tr>
<td>Peripheral hyper pigmentation</td>
<td>100/</td>
<td>75/</td>
<td>50/</td>
<td>50/</td>
<td>25/</td>
</tr>
<tr>
<td>Size of ulcer [4cm]</td>
<td>100/</td>
<td>75/</td>
<td>50/</td>
<td>5/</td>
<td>0/</td>
</tr>
</tbody>
</table>
Granulation tissue | 100/ | 75/ | 50/ | 5/ | 0/
pain | 100/ | 75/ | 25/ | 25/ | 0/  

**DISCUSSION**

After Leech application expulsion of impure blood takes place, due to which local vitiated Doshas (toxins & unwanted metabolites) are removed. Similarly, it facilitates more fresh blood supply & promotes wound healing by formation of newer tissues.\(^5\)

Due to improved blood circulation, skin discoloration is corrected and venous valvular dysfunction is also pacified. Thus, it breaks the pathogenesis of "varicosity" at cellular level and helps in wound healing.\(^6\)

Sira and Snayu are the Updhatu of Rakta, Jaluka acts as ‘Raktaprasadniya’. Hence, healthy newer tissues were formed along with strengthening of the blood vessels, thus corrects venous valvular dysfunction.

Medicinal leech (\textit{Hirudo medicinalis}) saliva contains hirudin, which inhibits blood coagulation by binding to thrombin.
Medicinal leech therapy in producing venous decongestion, reversal of oedema, hyper pigmentation and healing of varicose ulcers.

**CONCLUSION**

**Jalukavacharana** is the right choice of **Sirajagranti Janya Vrana**. Leech therapy proves to be effective, time saving, affordable and acceptable treatment in varicose ulcer. We can roughly conclude that Ayurveda can give a ray of hope in the treatment of varicose veins and varicose ulcer. After 30 days of Treatment the wound healed completely.

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How to cite this article: Zahidul Islam, Namita Baishya, Champak Medhi, Binod Kalita. Leech Application in Varicose Ulcer: A Single Case Study. J Ayurveda Integr Med Sci 2023;08:290-294.  
http://dx.doi.org/10.21760/jaims.8.8.48

Source of Support: Nil, Conflict of Interest: None declared.