

## Management of Periapical abscess with *Jalaukavacharana* (leech application) -A single case study

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### Abstract:

In periapical abscess treatment option is incision and drainage (I&D) and further post operative antibiotics. The healing of post operative wound is tidies because the food particle may lodge in wound which leads to re infection. So without surgical management with we are planned to manage that case with *Jalaukavacharan*. *Jalaukavacharan* is indicated in *Vranashotha* and advised exclusively in delicate patients for *Raktamokshan* (blood letting). In this case report a female patient of *Pitta-kaphaj Prakruti* suffering from periapical abscess due to dental carries was treated with *Jalaukavacharan* (leech application at cheek) in five sittings weekly once. The patient was cured completely without any untoward effect. Hence this case highlighted that *Jalaukavacharan* is effective remedy for management of periapical abscess.

**Key words:** *Jalauka*, *Jalaukavacharan*, Dental carries, periapical abscess, *Vranashotha*

### Introduction:

*Dantavidradhi* is the disease of *Dantamansa* having involvement of *Tridosha* and *Rakta*.<sup>[1]</sup> The symptoms of *Dantavidradhi* are *shopha*, *Ruja* and *Daha* at local site.<sup>[2]</sup> Yogaratnakar mentioned the management of *Dnatagata* and *Dantamansagat Vyadhi* should be treated with *raktamokshan*.<sup>[3]</sup> The *Raktamokshan* can be done with various means that are *Jalauka*, *Shringa*, *Alabu*, *Sirvedha*. Leech are used for treatment since ancient times for many illness and diseases through blood letting, a method where blood was drawn out in hope that removing impure blood it has many healing effect on human body. There are many species of leeches

but only 15 species are used medically. The leeches used in human being are classified as *hirudo medicinal* or *medicinal leeches*.

In periapical abscess treatment option is incision and drainage (I & D) and further post operative antibiotics. The healing of post operative wound is tidies because the food particle may lodge in wound which leads to re infection. So without surgical management with we are planned to manage that case with *Jalaukavacharan*.

### Case History:

A female patient of aged 26 years visited to Shalakya OPD of Govt. Ayurved Hospital, Osmanabad, Maharashtra with

complaints of swelling at left molar region, tooth ache since one month. On local examination it was found that the swelling on left cheek was remarkable having measurement (13 cm x 7cm) as compare to normal right cheek (10 cm x 4cm). During oral finding it was noticed that dental carries was present in 7<sup>th</sup> molar of left lower jaw. On the basis of complaints and clinical findings diagnosis was made as periapical abscess.

#### Methodology of Leech application:

In vitals patient's pulse (74) and BP (130/80 mm of Hg) was measures before application of leech. Total five sittings of

leech application were done (Figure 1-5). Every time one leech was applied and approx 3-5-ml blood was noted by sucking of leech. Measurement of cheek was taken during every sitting and found reduction in size as shown in table-1. The symptomatic relief was found after every sitting and patient completely cured after 5<sup>th</sup> week (Figure-6). During the whole course of treatment no any analgesic and antibiotics were prescribed. Pulse was remained in the range of 70-80 per minute during the treatment of leech application. The BP of patient was measure every time before application of leech which was in the range of 130/80mm of Hg to 140/90 mm of Hg.

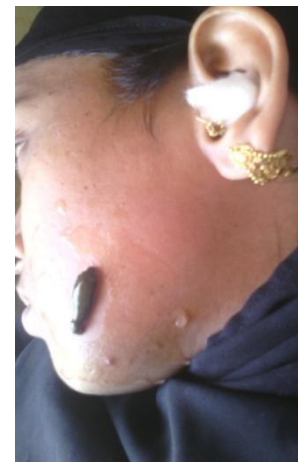
#### Images of leech application:



*Fig-1: 1<sup>st</sup> sitting of leech application*



*Fig-2: 2<sup>nd</sup> sitting of leech application*



*Fig-3: 3<sup>rd</sup> sitting of leech application*



Fig-4: 4<sup>th</sup> sitting of leech application



Fig-5: 5<sup>th</sup> sitting of leech application



Fig-6: Complete recovery

**Table-1: Symptomatic relief in complaints:**

Symptoms	1 <sup>st</sup> setting	2 <sup>nd</sup> setting	3 <sup>rd</sup> setting	4 <sup>th</sup> setting	5 <sup>th</sup> setting
Swelling	13×7	11×5	10.5×4.5	10.2×4	10.1×4
Pain (VAS*)	8	6	3	1	0
Tenderness	present	present	absent	absent	absent

\*VAS: Visual Analog Scale [(scale 0-10) 0= no pain and 10 =severe and unbearable pain]

### Result and Discussion:

The saliva of leech contains the *hirudin* which is anti-coagulant and inhibits the coagulation of blood. Another compound is *calin* which inhibit the platelet aggregation caused by collagen. <sup>[4]</sup> The action of destabliase is to breakup any fibrins which also have thrombolytic effects that dissolve clots of blood. Because of anticoagulation agents, the blood becomes thinner allowing flowing freely through the vessels. This normal circulation helped to heal the tissue. *Bdellins* is a compound in the leech's saliva that acts as an anti inflammatory agent by inhibiting trypsin as well as plasmin. <sup>[5]</sup> This helped in reducing the

swelling and congestion of tissue in this case. Another anti inflammatory agent is the Eglins which help to reduce the inflammation. There are three compounds in leech's saliva that act as a vasodilator agent, and they are the histamine -like substances, the actelycholine and the carboxypeptidase. <sup>[6]</sup> Due to this action vessels are dilated and allow to reach blood supply and nutrition to the disease tissue allow to relief in symptoms. The saliva of leeches also contains anesthetic substance which relieves the pain on the site and also bacteria inhibiting substances which inhibit the growth of bacteria at affected site. <sup>[7]</sup> Hence the infection controlled and stops further growth of

bacteria and help to relief the symptoms.

### Conclusion:

On the basis of this single case study it can be concluded that the *Jalaukavcharan* (leech application) is non pharmacological and para-surgical treatment is effective in delicate and female patients of periapical abscess. This is a single case report and for its scientific validation it requires to be tried in more number of patients.

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