



## ROLE OF JALUKAVACHARAN & VRANA DHAWAN IN WOUND BED PREPARATION OF CHRONIC NON HEALING VENOUS ULCER FOR SKIN GRAFTING-A CASE STUDY

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**ABSTRACT** A chronic non healing venous ulcer is condition in which wound healing is worsen by incompetent venous valves and stagnant blood in lower extremities. Multiple debridement and antibiotic therapy can not improve the healing of wound. In Ayurvedic literature *Jalukavacharan* (leech therapy) is used to improve the granulation. In the present study patient with chronic non healing ulcer was undergone *Jalukavacharan* therapy to achieve healthy granulated wound bed and further undergone skin grafting and cured completely. Leeches can be used as a successful tool in this situation by relieving venous pooling of blood and also by liquefying the clotted blood. It also enhances granulation tissue which is important for preparing wound bed. *Jaluka* stimulate circulation of cells and maintain oxygenation of the tissue.

**KEYWORDS :** Chronic non healing wound, venous ulcer, Jalukavacharan, wound bed.

### INTRODUCTION:

*Acharya Sushruta* who is known as father of surgery, elaborately explained types of *vrana* in *Sadyovraniya Adhyaya* of *Chikitsathana* in *Sushrut Samhita*<sup>1</sup>. He has explained sign and symptoms of *shuddha* (Clean wound) and *Dushta* (Infected) *vrana*. *Vrana* which has a foul smell, pus discharge along with blood, having cavity inside, present since long time are nomenclature as *Dushta Vrana* by *Acharya Sushruta*<sup>2</sup>. This kind of *Vrana* refuses to heal or heals very slowly. To achieve good approximation and early healing *Sushruta* had described *Shasti upakramas*, in which he has explained *visravana* by *Raktamokshana*. Bleeding (*Visravana*) is recommended in the case of an ulcer which is indurated, marked by a considerable swelling and inflammation and is reddish black or red-coloured, extremely painful, gagged in its shape and considerably extended at its base (congested), specially in the case of a poisonous ulcer, for the subsidence of the pain and for warding off a process of suppuration therein, either by applying leeches or by opening (a vein in the locality) by means of an instrument<sup>3</sup>.

According to modern science wound is break in integrity of skin and underlying tissue, associated with disruption of structure and function. Chronic wounds are those which do not show the normal healing and its signs in 4 weeks and remain in prolonged inflammatory stages<sup>4</sup>.

In *Sushruta samhita*, the procedure of *Visravana* has been recommended as one of the most effective therapy in *Vraashofa*<sup>5</sup>. It stimulates Granulation tissue formation by increasing pure blood supply to the wound site. It can be used as primary approach for management by pumping out blood (*Dushta shonita*) and increase oxygenation to the sites. Wound bed preparation is the management of a wound in order to accelerate endogenous healing or to facilitate the effectiveness of other therapeutic measures<sup>6</sup>.

In present study chronic non healing wound which has treated successfully using *Jalukavacharana*, *Vranadhavan* and followed by skin grafting.

**CASE REPORT:** The study was conducted at Pakwasa samnavaya Rungalaya, Nagpur. A 62 year male patient with complains of foul smelling wound at anterior aspect of right ankle joint having a watery discharge, irregular and unhealthy wound margins and surfaces. painless hard swelling around unhealthy wound since last 3 months. History of formation of small boil on right ankle joint over dorsum region 3 months before; which remain untreated to form large non healing wound. patient didn't have history of any previous medical illness like HTN, BA, KOCHS, before. Having addictin of tobacco since last 15 years. and with medium built and having all vital parameters normal.

### LOCAL EXAMINATION:

1. *Vrana Akrti*- Large irregular wound on dorsal aspect of ankle joint measuring about 15×10 cm in size.

2. *Sparsha*- hard swelling around the wound margins was present with irregulae wound surface.
3. *Gandha*- foul smell present.
4. Strava- watery serosanguinous discharge was found.
5. vedana – it is pain less ulcer.
6. varna – yellowish white.

### LAB INVESTIGATIONS:

On dated 23<sup>rd</sup> feb.

1. CBC report: Hb% 11.1gm%. WBC 17400/ cumm. RBC- 160million/ cumm.
2. ESR- 20 mm.
3. Venous Doppler-right sephano-femoral junction is incompetent and shows moderate reflux. Long sephanous vein is mildly dilated (5.4mm). Shows moderate reflux. Few varicosities noted in lower leg with moderate subcutaneous oedema.

**DIAGNOSIS:** Chronic non healing venous ulcer.

**METHODOLOGY:** After proper investigation wound debridment was planned under local anaesthesia. After which leech therapy and *Vrana Dhawan* was planned as a first line of treatment.

### PROCEDURE:

**1. Purva karma-** 2-3 jalauka of moderate size will be prepared for *Raktamokshana* by keeping them in haridra jala. Wound site was cleaned by *Trifala kashaya dhawan* for 15min. followed by wash with plain sterile water to remove dead tissue and discharge.

**2. Pradhana karma-** Two active jalukas were kept over wound and its periphery by wearing the latex gloves. When jaluka started sucking blood wet cotton pad was applied over them.

**3. Paschat karma-** After adequate sucking *jalauka* falls itself. Then *Haridra choorna* applied over bite site cotton pad kept and pressure dressing was done.

Then *haridra choorna* was sprinkled over the leeches sucker for vomiting the sucked blood after which *jaluka* again become active and kept in a container.

Same procedure continued for next 25 days daily and granulation was observed and assessed by using following criteria.

### SUBJECTIVE CRITERIA<sup>7</sup>:

1. PAIN: Calculated by visual analogue scale.
2. Kandu (itching):

No itching -	0
Itching sometimes a day-	1
Itching whole day but not disturbing sleep-	2
Severe itching disturbing sleep-	3

**OBJECTIVE CRITERIA:**

- 1. DEPTH: Measured by depth gauge.
- 2. Vranatala (Wound bed):

Smooth, irregular, healthy granulation-	0
Smooth irregular slight discharge, less granulation-	1
Rough, regular, wet, with more discharge, slough.-	2
Rough, irregular, profuse discharge, much slough.-	3

3. Gandha (odour):

No smell-	0
Bad smell-	1
Tolerable unpleasant-	2
Foul smell, intolerable-	3

4. Strava (Discharge):

Slightly moist gauze-	0
Serosanguinous, bloody discharge-	1
Serosanguinous discharge-	2
Serous discharge-	3

5. Varna (granulation tissue formation):

Pinkish red-	0
Slight pinkish red-	1
Slight yellowish-	2
Yellowish-	3

After the adequate therapy observations were recorded as:

Sr.no:	Variables	B.T.	5 <sup>th</sup> day	10 <sup>th</sup> day	15 <sup>th</sup> day	20 <sup>th</sup> day	25 <sup>th</sup> day
1.	Pain	0	0	0	0	2	2
2.	Kandu	2	2	1	1	0	0
3.	Depth in mm	5	5	4	3	2	2
4.	Vranatala	3	2	2	1	1	0
5.	Gandha	3	3	2	1	0	0
6.	Strava	3	3	2	2	1	0
7.	Varna	3	2	2	1	0	0

**RESULT:** After 10 sittings well differentiated pinkish granulation tissue was found. Wound was contracted, discharge from the wound was bloody serosanguinous. After 25 days of *Jalaukavacharan* and *vranadhavan* well differentiated wound bed with smooth irregular healthy granulation tissue with no smell no discharge was found there is about 80% improvement in the wound was found.

As the area of wound was too large contraction was not possible so patient was planned for skin grafting after 5 days oral antibiotic therapy.

**PROCEDURE :** Under all aseptic precaution under spinal anaesthesia split skin graft was taken from antero-lateral aspect of right thigh of same patient. Graft was applied over wound after refreshing wound edges by using skin stapler. Post operative care was taken by using antibiotics and anti-inflammatory drugs followed by dressing. 95% of graft was accepted. Wound was found completely cured by above mentioned plan of treatment.

**DISCUSSION:** *Jalaukavacharana* has a comprehensive therapeutic influence in reducing inflammation, pain, *Strava* (exudates) and vitiated *Doshas*. *Jalaukavacharana* stimulates granulation tissue in the wound bed which has good healing properties or *vrana shodhana* properties<sup>9</sup>. Leech saliva contains following chemical substances, Bdelins is found to have anti-inflammatory action at the wound site. Hyaluronidase is found to have antibiotic property over the tissues. Carboxypeptidase A – inhibitors increase the blood flow at the wound site. Histamin and Acetylcholine like substances present in saliva of *Jalauka* are found to act as Vasodilatation on the smaller vessels over the site of application. All the properties like anti-inflammatory, antibiotic, vasodilatation increase blood flow and are very much helpful to heal a wound. All these properties are present in the saliva of leech which helps in proper nourishment, oxygen supply and removing the toxic substances from the site of wound<sup>10</sup>. In present case study it was observed that *Jalaukavacharana* increased the rate of formation of healthy granulation tissue. As well as it was seen that the graft take up was excellent almost 95 % graft was taken up.

**CONCLUSION:** It can be conclude that *Jalaukavacharana* helps for healthy wound bed formation which increases the possibility of acceptance of split skin graft.

**IMAGES:**



**Fig.1** Initial presentation. **Fig. 2** Jalaukavacharan. **Fig.3** healed wound.

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