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**Case Study** 

# MANAGEMENT OF CHRONIC PERSISTING VARICOSE ULCER THROUGH MODEST AYURVEDIC INTERVENTION

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### **ABSTRACT**

Varicose ulcer is one of the most common venous disorders which occur as a complication of varicose vein. Venous insufficiency, venous reflux and venous hypertension not only result in dilation and tortuosity of the veins but are also responsible for both dermatological and vascular complication, resulting in the manifestation of varicose ulcer. It is a slow healing chronic recurrent ulcer accounting for almost 80% ulceration of lower extremities. A 50 years old man visited the OPD with complains of pain, swelling, discolouration and wound over the anterior aspect of the left leg above the ankle joint for 6 months. He had a history of varicose vein since 10 years. Six setting of Jalaukavacharan (leech therapy) along with internal administration of Shamana Aushadhi and external cleansing and dressing of ulcer have been done for a period of 1 and a half month. Gradual improvements of symptoms have been observed. The complete ulcer healing evidence has provided an interesting and encouraging result to the scholar and practitioner of this field. The Shamana Aushadhi like Mahamanjisthadi kwath, Kaishor Guggulu, Yastimadhu, Guduchi Sattva and Jalaukavacharan as Sastra karma have showed excellent Vrana Ropaka or ulcer healing effect in a long standing critical venous ulcer.

### **INTRODUCTION**

Varicose ulcer or venous stasis ulcer is a chronic medical condition resulting as a complication of long standing varicose vein. A series of event occurs before the clinical presentation of varicose ulcer. Varicosity is the penalty for verticality against gravity. The blood has to flow from lower limbs into the heart against gravity because of the upright posture of human beings. Varicose vein is said to be varicose when it is dilated, lengthened and tortuous. The return of venous blood from the lower limb to the heart requires a pump, equipped with non-return valves. The pumping action is provided by the muscles. If the valves are absent or become incompetent there is not only a high back pressure on standing but an even higher back pressure on walking and running.



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The venous blood from the deep compartment of the lower extremity is squeezed out into the superficial vein. Incompetence of perforating vein leads to regurgitation of venous blood resulting in tissue anoxia along with lymphatic obstruction. Breakdown of RBC results in hemosiderin deposition causing brownish black pigmentation particularly present in the lower part of leg. Hemosiderin deposition is also responsible for itching and abrasion resulting in eczematous condition. Medial malleolus being the common site for venous ulcer fails to heal due to presence of inadequate soft tissue and poor blood supply in that area and thereby tends to become chronic.[1] It may be correlated with Sirajgranthi janya dusta vrana. Deerghkalina anubandhita (chronic) Sirajgranthi associated with Vivarna (discolouration) and Ruja (pain), when left untreated for a long duration along with continuous Nidan sevana (intake of causative factors), results in the formation of chronic non-healing wound which is considered as Dusta vrana as per Ayurveda. These types of recurrent, persistent ulcers are difficult to cure and the contemporary surgical practitioners have handful

treatment options to offer. Skin grafting being the ultimate option, now a days most people are looking for alternative, effective and cheaper solution. Ayurveda since many years is known to effectively treat such chronic ulcer. In this case, patient was diagnosed with varicose vein since past 10 years and developed varicose ulcer since past 6 months. The patient was under allopathic surgical management for years and was unsatisfied with the result and reoccurrence tendency and at last opted for Ayurvedic management.

### **Prevalence**

The adult prevalence of visible varicose veins is 25-30% in women and 15% in men. It is much more common in females (10:1) with a family history. Familiar varicose veins begin in younger age group and are seen bilaterally, involve all veins including deep veins. A 25 years old population study showed 5 years of average time from diagnosis of Chronic vascular insufficiency (CVI) to ulceration. 1 to 3% of elderly population of United State & Europe are affected by Varicose Ulcer. An epidemiological survey from Western Europe, Asia, Latin America and Eastern Europe reveals that 2.21% out of 99359 patients of chronic vascular insufficiency (CVI) had a history of either active or healed venous leg ulcer (VLU).[2]

#### Classification of Varicose Vein[3]

The CEAP (clinical- aetiology- anatomy- pathophysiology) classification for chronic venous disorders is widely utilised.

### Clinical classification

CO	No signs of venous disease
C1	Telangiectasia or reticular veins
C2	Varicose veins
С3	Oedema
C4a	Pigmentation or eczema
C4b	Lipodermatosclerosis or atrophic blanche
C5	Healed venous ulcer
C6	Active venous ulcer

Each clinical class is further characterised by a subscript depending upon whether the patient is symptomatic (S) or asymptomatic (A) e.g. C2S.

### **Etiological classification**

Ec	Congenital
Ep	Primary
Es	Secondary (post-thrombotic)
En	No venous cause identified

#### **Anatomical classification**

As	Superficial veins
Ap	Perforator veins
Ad	Deep veins
An	No venous location identified

### **Pathophysiological classification**

Pr	Reflux			
Po	Obstruction			
Pr,o	Reflux and obstruction			
Pn	No venous pathophysiology identifiable			

### Pathogenesis of Venous Ulcer

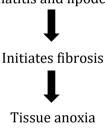
Chronic venous hypertension develops around the ankle as a result of recanalization of varicose veins or



In the subcutaneous plane, hemosiderin deposition takes place due to lysis of RBCs causing Eczema



Results in dermatitis and lipodermatosclerosis





Ulceration

**Site:** Presence of large number of perforators around and above the medial malleoli makes it a common site for venous ulceration. These perforators exert pressure changes into the superficial system. It can be observed in bilateral malleoli. This particular area is known as Gaiter's zone.

Characteristics: Ulcer is usually large, non-healing and tender. Recurrence is noted with secondary infection. Enlargement of vertical group of inguinal lymph nodes are usually present. Scarring, ankylosis, Marjolin's ulcer formation are quite often. Sloughing from the bed of ulcer may result in venous haemorrhage. Occurrence of periostitis promotes non-healing. Achilles tendon– talipes equino varus results from contraction and extra articular fibrosis when regular walking on toes is practised in order to get relief from pain.<sup>[4]</sup>

### Sign & Symptoms of Varicose Ulcer [5]

- It is usually superficial and shallow with a sloping edge.
- The floor of the wound may be covered by pale granulation.
- Mostly associated with varicosity of vein.
- The surrounding ulcer is indurated, hyper pigmented (due to stasis of blood) and tender in nature
- Shows history of prolong venous disease.
- Discomfort, hyper pigmented, eczematous changes and tenderness of skin before actual manifestation of ulcer.

### **Case Report**

A 50 years old male patient visited Kayachikitsa O.P.D with chief complaint of pain (*Shool*), oedema (*Shotha*), ulceration over left leg (*Vrana*), Blackish discoloration (*Shyavata*) over the anterior aspect of the left leg above the ankle joint from last 6 months.

**Duration-** Since last 6 months

Past medical history- Varicose vein since 10 years

Past surgical history- No such

Family history- No such

### **Personal history**

Non vegetarian	
Waiter	
No such	
Diminished	
Disturbed	
Normal	
Constipated	

### **General Examination**

-	
-	
-	
-	
++	
124/80 mm Hg	
82 bpm	
76 kg	
5'5"	

### Astavidha pariksha

Nadi	Vata-Pittaja, 82 bpm	
Mutra	Swabhavik	
Mala	Badhha	
Jihva	Saam	
Shabda	Swabhavik	
Sparsha	Ushna	

Drik	Swabhavik	
Akriti	Madhyam	

### Dasavidha pariksha

Prakriti	Vata-kaphaja	
Sara	Mamsa sara	
Samhana	Madhyam	
Satmya	Madhyam	
Satva	Madhyam	
Ahara sakti	Avar	
Jaran Sakti	Madhyam	
Vyayam sakti	Avar	
Vaya Madhyam avas		
Pramana Madhyam		

### Local examination of ulcer

### Inspection

Number- 1

Site- Anterior aspect of left leg above ankle joint

Size- 10x5x1.5cm

Shape- Vertical irregular

Floor- Unhealthy granulation tissue

**Edge-Sloping** 

Discharge- Seropurulent discharge

Surrounding area- Hyper pigmented, eczematous,

indurated

Oedema- Present around ankle joint (pitting)

### **Palpation**

**Tenderness-Present** 

Base- Indurated

Depth- 1.5 cm

Surrounding skin- Varicosity noted

Arterial pulsation- Both dorsalis pedis and post tibial palpable

Lymph node- Not palpable

### **OBJECTIVE**

To study the effect of *Jalaukavacharan, Shamana aushadhi* and regular dressing of wound in the management of varicose ulcer.

### **MATERIAL AND METHODS**

Patient having sign and symptoms of varicose ulcer was assessed clinically through local examination of wound and was admitted to Kayachikitsa IPD. Treatment interventions were planned according to the *Roga* and *Rogi bala avastha*. Case sheet was prepared and pictures of wound taken during followups. Patient consent was taken before initiation of the treatment.

#### **Timeline**

The timeline of the development of symptoms and condition of patient is depicted in Table 1.

Table 1: Timeline of Clinical Symptoms and Condition of Patient

Time	Development of Symptoms	Condition of patient		
Before 2013	Patient asymptomatic	Normal activity observed		
2013-2019	Recurrent pain in the left leg on long standing along with gradual engorgement of superficial vein.	Diagnosed with varicose vein of left leg for which he took allopathic treatment.		
2020 to Oct 2022	Recurrent discolouration along with pain and swelling over left leg.	Treated with allopathic medicine, temporary relief was achieved.		
Oct 2022 - Jan 2023	Development of small wound over the anterior aspect of the left leg above the ankle joint associated with pain, discharge, swelling and blackish discolouration.	Anti-biotic, anti-microbial, anti- inflammatory medication taken but no effective result was obtained.		
Feb 2023 - April 2023	Gradually the wound size increases along with pain, swelling, discharge, foul smell and blackish discoloration.	Anti-biotic, anti-microbial, anti- inflammatory medication taken but no effective result was obtained.		
20/04/2023	Development of large wound over the affected area associated with severe pain, discharge, foul smell, swelling and blackish discolouration. Patient attended Kayachikitsa OPD of an Ayurvedic Hospital.	Local examination was done and the patient was diagnosed as <i>Siragranthi janya Vrana.</i> He was advised to admit in <i>Kayachiktsa</i> IPD. <i>Raktamokshana,</i> Regular dressing along with <i>Shamana aushadhi</i> was planned.		
30/04/2023	Gradual improvement in symptoms of wound with reduction in wound size, smell and serous discharge.	Raktamokshana by Jalauka, regular dressing and Shamana aushadhi were continued as per schedule.		
10/05/2023	Gradual improvement in symptoms with reduced swelling in the foot and ankle joint and discharge from the wound.	Raktamokshana by Jalauka, regular dressing and Shamana aushadhi were continued as per schedule.		
20/05/2023	Gradual reduction in wound size and surrounding discoloration of skin. Absence of discharge, foul smell, edema and pain.	Raktamokshana by Jalauka, regular dressing and Shamana aushadhi were continued as per schedule.		
30/05/2023	Significant improvement in symptoms with reduction in wound size and discoloration of skin. Signs of healing were noted.	Raktamokshana by Jalauka, regular dressing and Shamana aushadhi were continued as per schedule.		
05/06/2023	Marked improvement in the clinical presentation of wound. The ulcer healed completely. Mild discoloration present over the surrounding area of healed ulcer. The patient was clinically stable.	Treatment was completed as per schedule. Patient was satisfied with the result. Patient was discharged.		

### **Diagnostic Assessment**

Local examination of the wound and presence of varicosity on the left upper thigh tested positive for Trendelenburg test and Mose's sign confirmed it to be a varicose ulcer. Palpable Pedal pulsation was noted in the left foot. Doppler study differentiated it from other venous disease like DVT.

### **Therapeutic Intervention**

Vrana Prakshalana (wound cleansing) with Aragwadhadi Kashayam and application of Jatyadi taila, followed by Vrana Bandhan (regular dressing). Dressing of ulcer performed daily for a period of 45 days.

S.N	o. Drugs	Main ingredients	Indications	
1.	Aragwadhadi kashayam <sup>[6]</sup>	Amlatasa, Neem, Guduchi, Patha, Karanja etc.	Indicated in Kaphavikar, Prameha, Sodhana of Dusta vrana.	
2.	Jatyadi tailam <sup>[7]</sup>	Jatipatra, Nimbapatra, Patolpatra, Karanjapatra, Siktha (beeswax), Madhuka, Kustha, Haridra, Daruharidra, Manjistha, Lodhra, Murcchita tila taila	Indicated in <i>Vrana</i> due to <i>Mamsapakarsana, Vranasodhana, Vranaropana</i> pharmacological actions.	

Raktamokshana by Nirvisha Jalauka (non-poisonous leeches) was performed in an interval of 1 week. 4 leeches were applied after proper assessment of ulcer. Total 6 settings were carried out within 45 days of time period.

### Process of Jalaukavacharan

#### Purvakarma

- a. Preparation of Patient After checking the vitals of the patient, the area to which *Jalauka* (leeches) are applied was thoroughly cleaned with sterile water and dried with sterile gauze.
- b. Preparation of Jalauka Nirvisha (non-poisonous) Jalaukas were selected for Raktamokshana. Then Jalaukas (leeches) were kept in Haridra and Sarsapa Kalka Odaka (Water mixed with Turmeric and mustard paste). Active movement of Jalauka confirmed fitness for the procedure.

#### Pradhan karma

The patient was made to lie in supine position. *Jalauka* were applied on the site which was dried already. Generally *Jalauka* bites the skin and suck by its own (it raises its neck and appears like the hoof of a horse). If the *Jalauka* failed to suck the blood, a mild

prick was made by a sterile needle and again *Jalauka* was placed. As soon as *Jalauka* started sucking the blood, its body should be covered with wet white gauze.

*Jalauka* were removed on complain of itching and pain at the site of *Jalaukavacharan* by applying *Haridra* powder at its mouth.

### 3) Paschat Karma

- a. Management of Patient After removable of *Jalauka*, the site was smeared with *Shatadhouta Ghrita* and tight bandaging was done.
- b. Management of Jalauka Haridra powder was applied over the body of Jalauka. Then with the help of thumb and small finger of the left hand, the tail end of the Jalauka was held. The body of Jalauka was then squeezed with the fingers of right hand and pushed gently towards its face inducing vomiting of sucked blood. It was continued until the signs of proper Vaman in Jalauka appeared. After that it was kept in Haridra odaka and active movement of Jalauka was noted. Then it was kept in a vessel containing water.

Table 2: Jalaukavacharan settings with date

Jalaukavacharan	1st setting	2 <sup>nd</sup> setting	3 <sup>rd</sup> setting	4 <sup>th</sup> setting	5 <sup>th</sup> setting	6 <sup>th</sup> setting
Setting date	25/04/2023	02/05/2023	09/05/2023	16/05/2023	23/05/2023	30/05/2023

*Shaman Aushadhi* were administered for total duration of 45 days. A detail description of the treatment given to the patient is shown in Table 3.

Table 3: Medication / Shamana Aushadhi administered

S.No.	Shamana Aushadhi	Dose	Dosage	Anupan
1.	Mahamanjisthadi kashayam	20ml	Twice daily before meal	With half cup of Suskaushna jala (lukewarm water)
2.	Kaishor guggulu	500mg	Twice daily after meal	With <i>Suskaushna jala</i> (lukewarm water)
3.	Guduchi Sattva	250mg	Twice daily after meal	With <i>Suskaushna jala</i> (lukewarm water)
4.	Yastimadhu churna	3 g	Twice daily after meal	With Suskaushna jala (lukewarm water)

### **Total duration - 45 days**

### Follow-Up & Outcome

The patient was treated at Indoor patient department (IPD) of an Ayurvedic hospital for a period of 45 days. Oral medications were given for 45 days as per scheduled dose. Regular dressing of wound was performed.

Leech therapy was done at an interval of 1 week for 6 consecutive weeks. Follow-ups were conducted on every  $10^{\rm th}$  day and picture of ulcer was taken during each follow-up along with clinical assessment of wound. Progress was noted to access the result on the basis of clinical presentation of ulcer. The ulcer healed completely at the end of 45 days. A follow up conducted after 3 months of treatment confirmed the non-recurrence of varicose ulcer.

### **OBSERVATION AND RESULTS**

S.no.	Criteria	20/04/2023	30/04/2023	10/05/2023	20/05/2023	30/05/2023	05/06/2023
1.	Wound size (in cm)	10x5x1.5	7x4x1	5x2x0.5	3x1x0.25	0.5x0.5x0	0x0x0
2.	Discharge	++	+	+			
3.	Foul smell	++	+	+	-	-	-
4.	Blackish discolouration	+++	++	++	+	+	+
5.	Oedema	+	+	+			
6.	Pain	+	+				



### Probable mode of action of Shamana drugs

S.No.	Shamana drugs	Main ingredients	Probable mode of action	
1.	Kaishor Guggulu <sup>[8]</sup>	Triphala, Guduchi, Guggulu, Trikatu, Danti, Vidanga, Trivrit	Indicated in skin disease, ulcer, <i>Vatarakta, Kustha</i> . If used properly cures all diseases, prevents aging and maintain youthfulness.	
2.	Mahamanjisthadi kashayam <sup>[9]</sup>	Manjistha, Musta, Kutaja, Guduchi, Vidanga, Khadir, Nimba, Patola, Chandan	Indicated in skin diseases like all type of <i>Kustha</i> and <i>Vatarakta</i> . Hence exerts pharmacological actions in skin disease because of its ingredients which acts as <i>Rakta prasadak</i> , <i>Daha prashamana</i> , <i>Varnya</i> , <i>Kandughna</i> etc.	
3.	Guduchi Sattva <sup>[10]</sup>	Guduchi	Having <i>Tikta, Kashaya rasa</i> promotes healing. Its <i>Tridosahara guna</i> helps in restoring <i>Doshic</i> imbalance. possesses anti-inflammatory, anti-oxidative, anti-diabetic, anti-neoplastic etc. activities.	
4.	Yastimadhu churna <sup>[11]</sup>	Yastimadhu	It possesses <i>Pittahara guna</i> and is known for properties like <i>Jeevaniya, Sandhaniya, Varnya, Kandughna</i> etc. It also acts as <i>Rasayan</i> .	

#### **DISCUSSION**

Acharva Sushruta has vividly explained different types of wound along with its causative factors, involvement of *Doshas*, clinical features and its management. In this case, the patient was belonging to a low-income group, had a faulty dietary habit (Visama Ahara) and inappropriate daily regimen (Visama vihar) along with history of prolonged standing due to his profession as waiter. Initially *Vayu* got vitiated and this vitiated Vayu afflicted the healthy vessels due to Atyadhik Dourbalata i.e., generalised weakness in patient. As a result, the vessel constricted, shrunk and dried up to form round swelling in the vessels known as Sirajgranthi.[12] Due to its Krichasadhya (difficult to cure) prognosis and further intake of *Nidan* (causative factor), it got associated with vitiated Rakta and developed as a chronic persistent ulcer (Dusta vrana). Raktamokshana is considered as half of all the treatment modalities in surgery and it is specially indicated in Shastik Vrana Upakrama under the

heading of *Visravana Karma*. In this Raktamokshana was done by Jalauka which is again indicated in the management of Dustavrana. Acharya Sushruta states that, Visravana Karma with Nirvisa jalauka is extremely beneficial in wound associated with swelling, having indurated base, red or blackish red in colour, wide mouth and irregular margin.[13] When *Jalauka* is applied on the ulcerated area, it sucks impure blood at superficial level helping normalization and improvement in capillary circulation. It exhibits anti-inflammatory. anticoagulant. anaesthetic, antibacterial etc actions due to presence of several enzymes in its saliva (Table 4).[14] Due to its counter irritant effect over the ulcer, it helps in developing new cellular division by removing layers of dead cell and thereby reduces local swelling, preventing lichenification. By reducing high blood pressure and blood viscosity, it relieves varicosity.[15]

Table 4: Action of enzymes present in leech's saliva [14]

S.No.	Some enzymes present in leech's saliva	Action
1.	Hirudin	Acts as anti-coagulant, prevent phlebitis
2.	Calin	Anti-coagulant, performs slow cleansing of wound, improves blood flow to the compromised tissue flaps.
3.	Histamine	Vasodilatory property allowing increased blood flow in the ulcerated area.
4.	Hyaluronidase	Clears the path for active and healing substances to penetrate in deeper tissue

Vrana Prakshalana (washing of ulcer) by Aragwadhadhi Kashayam was done regularly. Aragwadhadhi Kashayam contains Rakta shodhak (blood purifying) and Twak prasadaka (boosting healthy skin) ingredients like Aragwadha, Patala,

Nimba etc., pacifying Kapha and Pitta doshik imbalance. Acharya Vagbhata has specially indicated Aragwadadhi Kashayam for Dustavrana Visodhana. [6]

Jatyadi taila was used for the regular dressing of the wound. Jatyadi taila contains ingredients like

Haridra acting as Kandughna, Kusthaghna as well as Vishaghna, Manjistha possessing Varnya, Kandughna Vishaghna guna, Nimba and known antimicrobial antipruritic and properties. possesses anti-inflammatory and antioxidant properties, Madhuka possesses Ropana Guna. Due to presence of these ingredients Jatyadi taila helps in Mamsapakarsana (removal of dead, unhealthy tissues), Vrana Sodhan (wound cleansing) and Vrana Ropana (healing of wound) by enhancing re-epithelialization and neo-vascularization in the area of application.[7]

Oral medication like *Kaishor Guggulu, Mahamanjisthadi kashayam, Guduchi sattva* and *Yasthimadhu churna* were given for a period of 45 days. Use of *Kaishor Guggulu* is indicated in various skin diseases including *Vatarakta* and *Kustha*. It possesses ingredients like *Triphala* having antioxidant properties and helps in maintaining *Tridoshik balance, Trikatu* on the other hand acts as *Sula Prashamanan* (analgesic action) as well as *Agni Pradipak* (rekindle digestive fire). Thus, helping in reducing pain and curing other symptoms of disease.<sup>[8]</sup>

Mahamanjisthadi kashayam exhibits excellent improvement in all kind of skin disease due to the pharmacological action of the ingredients which possessing Rakta-prasadak, Dahaprashamak, Varniya and Kandughna qualities. Kashaya-tikta rasa (astringent bitter) along with Sita (cool) Guna balances Pitta Dosha and also rectifies Dushita Rakta Dosha and thereby brings back the complexion of the skin along with relieving itching sensation, burning sensation etc.<sup>[9]</sup>

Guduchi possess Tikta-Kashaya rasa, Madhura vipak as well as Tridosha shamak, Medohara, Kandughna, Daha prasamana and Rasayan properties. Due to the presence of chemical compounds like tinosporide, cordifolide, cordifol etc it exhibits anti-inflammatory, anti-oxidative, anti-diabetic, anti-neoplastic etc activities which not only reduces the symptoms but also insures complete healing of ulcer.[10]

Yasthimadhu due to its Madhura rasa, Sita virya and Madhura vipak is known for its Pittahara properties. It is indicated in Vrana (ulcers) due to the presence of its chemical constituents such as glycyrrhizin and glycyrrhetic acid acting as anti-inflammatory. Glycyrrhetic acid also shows antipyretic activity. Apart from this Yastimadhu possess Jivaniya, Sandhaniya, Varnya and Kandughna properties which help in proper healing of ulcer and prevent its tendency to re-occur. It also acts as Rasayan (immuno-modulatory action). [16]

#### CONCLUSION

The chronic varicose ulcer which developed as a complication of longstanding varicose vein and was unable to heal from for last 6 months despite of proper contemporary treatment showed complete healing in 45 days with modest Ayurvedic intervention. The non-occurrence of ulcer even after 3 months of medical intervention confirmed the complete cure of the pathology from its root. This case study is suggestive of encouraging outcomes in the management of chronic persistent ulcer through Ayurveda and to establish the same for generalised wound management more such study on a larger sample size should be conducted.

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