

Effectiveness of *Jalaukavacharan* (Leech Therapy) in *Siraj Granthi* (Varicose Veins) - A Case Report

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ABSTRACT:

Varicose veins are becoming a common illness and some people are affected in their lives due to poorly functioning of valves of lower limb, decreased elasticity of the vein wall, over pooling of blood within the veins. Prolonged standing work, obesity, genetic predisposition etc. are the independent predictor and required proper evaluation for opting treatment. In contemporary medicine compression stocking, venous stripping sclerotherapy, endovenous laser ablation etc. are the modalities recommended. Based on symptomatology, *Siraj Granthi* can be co-related with Varicose veins. *Raktamokshan* (~bloodletting) procedures like *Siravyadhan* and *Jalaukavacharan* with *vata-rakta shamak* medicines helps a lot in pacifying the symptoms. Here a diagnosed case of 42-year male patient with varicose vein having the complaint of pain, heaviness, tortuosity in bilateral legs with non-healing ulcer near medial malleolus of right lower limb classified as CEAP class 6 have been chosen for the study. Treatment advocated to him including, *Jalaukavacharan* weekly once along with oral administration of *Sabacharadi Taila*, 2 capsules twice daily with luke warm water after food for one month and wound dressing was done with *Jatyadi Taila* once daily. After the completion of treatment, one month of follow up was carried out. Clinically patient got significant relief in the sign and symptoms with complete healing of the ulcer and no recurrence of the conditions observed. Thus, due to high recurrence rates and agony for surgery, people prefer noninvasive treatment options. Therefore, combined approach of *Jalaukavacharan* (~leech therapy) with oral medication of *Sabacharadi Taila* found helpful in cases of *Siraj Granthi* (varicose veins).

KEY WORDS: *Jalaukavacharan*, *Sabacharadi Taila*, *Siraj Granthi*, Varicose ulcer.

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INTRODUCTION:

Varicose vein is becoming a most common problem, mostly affecting leg veins of middle aged and elderly people because of incompetent valves and venous insufficiency. Abnormal dilated, elongated and tortuous alteration in the saphenous veins and their tributaries is called as varicose veins.^[1] The prevalence rate of Varicose vein in India is about 15% in men and 25% in women.^[2,3] The contemporary treatments available are injection sclerotherapy, high ligation, ligation with stripping, radiofrequency ablation, endovenous laser ablation and conventional surgery. complication such as superficial thrombophlebitis, eczema, hyperpigmentation, lipodermatosclerosis, hemorrhage, ulceration and an increased risk of deep vein thrombosis.^[4] In Ayurveda it can be correlated with *Siraj Granthi* (~varicose veins). According to the literatures, in debilitated person, due to excessive exercise, aggravated *Vayu* pulls the of blood vessels causing *Sampeedana* (~compression /local congestion), *Sankochya* (~narrowing / constriction) and *Vishosbanam* (~drying up of venous channels) and produces similar to *Granthi* (~cystic swelling) in affected *Sira*. This condition is called as *Siraj granthi*.^[5] Aggravated *Vata* invades in *Siras*, causing constriction, distortion and dryness in affected *Siras*. The appearance of affected *Siras* looks like *Granthi*, which is non-pulsating and painless known as *Siraja Granthi*.^[6] Ayurveda has an in-depth description regarding the disorder. Based on prognosis acharya Sushruta has classified *Siraj Granthi* as two types - *Krichbra sadhya* (~curable with difficulty) and *Asadhya* (~incurable). If the site is painful and developed *granthi* is mobile, it is considered as *Krichbra Sadhya Vyadhi*. If *Siraja Granthi* is painless, fixed, big in size, and situated over the vital spots, it should be considered as *Asadhya*.^[7] Acharya Vagbhatta

has added the clinical signs which are more useful for diagnosis. In *Sira Granthi*, the affected *Siras* (~veins) are seen like *Vakreekarana* (~tortuosity), and all affected *siras* are *Nishphura* (~nonpulsatile) and *Neeruja* (~painless)^[8]. In its development vitiated *Vata Dosha* along *Rakta dusti* (~vitiation of blood) are considered as primordial factors^[9]. The vitiated *Vayu* enters into the *Siras* and develop *Siraj Granthi* by *Sampeedana*, *Sankochya* and *Vishosbanam*^[5]. In Ayurveda, treatment adopted for this disease includes *Shamana chikitsa* (~palliative procedures) by adopting suitable medicines and *Sodbhana Chikitsa* (~purifying process) by *Raktamokshan* (~bloodletting). *Vagbhatta* has described *Siravyadhana* (~venepuncture) and *Basti karma* (~therapeutic enema) for *Siraja Granthi*.^[10]

Acharya Vagbhatta and Acharya Sushruta explained *Jalaukavacharan* as a proficient way of *Raktamokshan* and is highly beneficial in case of *Avagadha dosha* and in *Granthi*^[11]. Leech therapy is widely used in plastic and reconstructive microsurgery as the protective tool against venous congestion, ulcer healing, decrease in edema and hyper pigmentation^[12]. Leeches act by secreting biologically active substances in their saliva. Saliva is composed of around one hundred distinct chemicals, including antiplatelet aggregation factor, anesthetic, antibacterial and anti-inflammatory compounds. Additionally, hirudin, an anticoagulant found in leech saliva, prevents blood clotting and dissolves thrombi to remove both partial and total blockages in distal vessels. The chemicals present in leeches' saliva thin the blood and widen blood vessels in their hosts when they bite. Leeches aid in healing and lessen tissue edema by removing the congestion. Before the return of regular circulation, these microcirculatory processes allow newly oxygenated blood to reach the afflicted parts of the hosts^[13].

Acharya Vagbhatta in 29th chapter of *Uttarasthan, Granthiarbudasleepadapabeenaadi pratishedha adhyaya*, he has advocated for the oral use of *Sabacharadi Taila* for the treatment of *Siraj Granthi*. This medicine is also indicated in chronic *Vata Vyadhi* in Charaka Samhita [14]. Hence application of *Sabacharadi Taila* orally with *Jalaukavacharana* helps in pacifying the aggravated doshas locally and helps in relieving the conditions.

This case report is a unique approach in dealing with the cause of the disease and treatment of complication of *Siraj Granthi*. *Jalaukavacharan* along with *Sabacharadi Taila* is an effective way of management of *Siraj Granthi* and preventing further complications of the disease.

CASE REPORT:

A 42 year male patient, street vendor by profession, presented at the outpatient department (OPD) of AIIA on 21st July 2023, with complaint of non-healing ulcers near the right ankle, tortuous veins in bilateral legs, pain, and mild swelling near the ankle, which gradually increases at the end of the day in bilateral legs experiencing the last 2 years. The onset was gradual, but progressing with time. He was non-diabetic and non-hypertensive, and he also had no other systemic illness. He belongs to a lower economic class family with no relevant family history. In personal history his appetite was normal, bowel habit, micturition was regular. Being a street vendor by profession, he used to stand for 8–10 hours per day during business hours, for the last 10 years. After passing the day, the pain in bilateral legs gets worsen in the evening. Gradually, he developed discoloration and itching in the right ankle, which led to an ulcer of size 5 cm x 2 cm and remain non-healing for last six months. Initially, he consulted a surgeon nearby and underwent venous color Doppler study of lower limbs. As per his advice taken

Daflon 500 mg BD, analgesics, and an antiseptic dressing for a specified duration, but no improvement was noticed. At last, he was advised to undergo surgical intervention (venous stripping and perforator ligation). Hence, in search of a noninvasive and promising treatment, he visited AIIA.

CLINICAL FINDINGS:

The patient was thin-built with a BMI of 22. On physical examination, he was normotensive, having a pulse of 72/min, being afebrile, having a respiration rate of 18/m, and having no anemia or jaundice. No respiratory or cardiovascular abnormalities. Per abdomen is soft, non-tender, and has no organomegaly. On local examination, the right leg having wound of size 5 x 2 cm near the medial malleolus, with few visible tortuous veins in the mid-foreleg anteriorly and posteriorly in the calf region, with discoloration in the ankle area. The left leg has no significant abnormality. His blood investigation reports suggest Hb-13.1 gm% and normal CBC. Bleeding time was 1min 3sec and clotting time was 4min 30sec. His random blood sugar level was 112 mg/dl. Viral markers such as HIV, HBsAg, and HCV were found to be non-reactive. Urine routine examination and microscopic examination were normal. The Venous color Doppler test of the lower limbs, dated 5th July 2023, suggests competent sapheno-femoral and sapheno-popliteal junctions and dilated bilateral GSV and SSV in its course, with multiple incompetent perforators along the right GSV and bilateral SSV.

DIAGNOSTIC ASSESSMENT:

The patient was diagnosed as having varicose veins in bilateral lower limbs both clinically (Rt>Lt) and through radiological investigations. Venous color Doppler dated suggests a varicose vein with no DVT, and Homan's sign test was negative, thus a deep

vein thrombosis condition was ruled out. The Trendelenburg test, Scwartz test, and Perthe’s test were done and confirmed the presence of a varicose vein in the bilateral leg with a nonhealing ulcer near the right ankle. According to the CEAP classification suggesting clinical class 6 varicose veins (Fig-1).

THERAPEUTIC INTERVENTION:

After a thorough diagnosis, informed written consent was obtained before starting the leech therapy. Medium-sized *Jalauka* (~leech) were selected from the leech tank of the institute for application. *Jalaukavacharan* was performed on the affected part of right lower limb once a week for four weeks as per the following method:

Purva karma- (~pre-operative procedure): Leeches were kept inside *Haridra choorna* (~turmeric powder) mixed water for 15 minutes. After they became activated and the *Haridra* solution partially sedimented in contact with leeches, they were taken out and kept in fresh water. The affected wound area was cleaned with normal saline before application.

Pradhan karma- (~main operative procedure): 4-5 leeches were applied nearby wound area, and after their neck became

elevated and the anterior sucker became *Aswakburakeruti* (~foot of a horse), they were covered with wet gauze. They remained attached for 40–45 minutes and left on their own after becoming fully engorged after sucking blood. It has been observed that, a medium sized leech sucks approximately 5-15 ml of blood on full engorgement.

Paschat karma- (~postoperative procedure): After removing from the patient's body *Vaman* (~emesis) of *Jalauka* done using *Haridra churna* (~*Curcuma longa* powder) and stored separately in a water jar for reuse after one week. The wound was dressed with *Jatyadi Taila* followed by pressure bandage.

Weekly progress in clinical conditions was recorded. As an adjuvant therapy capsule of *Sabacharadi Taila* from a GMP-certified company, given in a dose of 2 capsules twice daily with lukewarm water after food for one month. The patient was advised to avoid prolonged standing and limb elevation during sleeping hours by using pillow in a step pattern and use of compressive stockings during working hours.

TIMELINE: The detailed timeline is mentioned in Table-1.

Table-1: Timeline

Date	Observation and remarks
21 st July 2023	Screening and assessment done
28 th July 2023	<ul style="list-style-type: none"> • 1st sitting of <i>Jalaukavacharan</i>-5 leeches applied on the wound and surrounding area • Capsule <i>Sabacharadi Taila</i>- 2 capsules twice daily with luke warm water after food given for one month. • VAS- 6/10 (VAS: Visual analog scale) • Wound unhealthy with pale look • Itching and discoloration +
4 th August 2023	<ul style="list-style-type: none"> • 2nd sitting of <i>Jalaukavacharan</i>- 5 leeches applied over the wound and surrounding area (Figure-2) • VAS- 3/10 • Wound healthy

	<ul style="list-style-type: none"> • Itching and discoloration +
11 th August 2023	<ul style="list-style-type: none"> • 3rd sitting of <i>Jalaukavacharan</i>-4 leeches applied on the wound and surrounding area • VAS- 0/10 • No Itching • Wound becomes healthy • Discoloration of the surrounding skin +
18 th August 2023	<ul style="list-style-type: none"> • 4th sitting of <i>Jalaukavacharan</i>- 4 leeches applied on the wound and surrounding area (Fig-3) • Patients becomes asymptomatic • VAS- 0/10, No Itching • Wound becomes healthy with granulation • Improvement in discoloration of the surrounding skin +
18 th Sept. 2023	<ul style="list-style-type: none"> • One month Follow up • Patient was asymptomatic • Wound completely healed • No recurrence of symptoms



Fig-1 Before Treatment



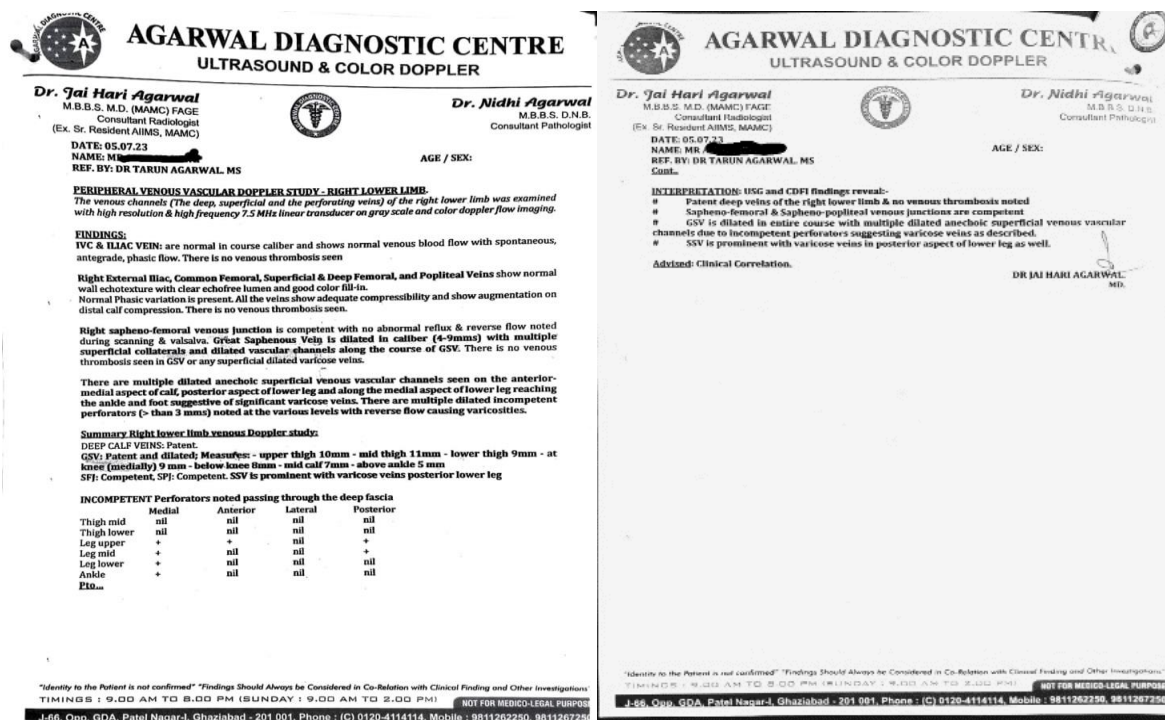
Fig-2 During Treatment



Fig-3 Jalaukavacharan



Fig-4 After Treatment



Venous color Doppler LL (1) & (2)

OBSERVATIONS AND RESULT:

Follow-up is done on every seventh day with the application of leeches in every sitting for a total of four sittings. Capsule *Sabacharadi Taila* was continued for one month with a dose of two capsules twice daily after food with luke warm water and daily dressing of wound with *Jatyadi Taila*. It was observed that, every week, the symptoms gradually relieved. At the end of the therapy, pain, ankle swelling and itching were relieved completely, and the wound was completely healed after 8 weeks (Fig-4). But the discoloration of the ankle area not reduced significantly. After the therapy, follow-up done after one month to assess any recurrence of the previous symptoms. At the end, on assessing the patient's clinical condition, it was observed that all the complaints of patients decreased with an improvement in quality of life.

DISCUSSION:

Varicose vein presents with dilated, tortuous veins along the course of saphenous veins of the lower limb. Ayurveda advocates *Raktamokshan* and *Basti* procedures for the treatment of *Siraj Granthi*. *Jalaukavacharan* is an effective tool for *Avagadharakta dusti* and *Dusta Pitta Nirharan*^[15]. Leeches are segmented parasitic or predatory worms that belong to the phylum Annelida and comprise the subclass Hirudinea. The majority of leeches live in freshwater habitats, while some species can be found in terrestrial or marine environments. The best-known species, such as the medicinal leech, *Hirudo medicinalis*, are hematophagous, attaching themselves to a host with a sucker and feeding on blood, having first secreted the peptide hirudin to prevent the blood from clotting^[16].

Leech therapy is now recognized as an irreplaceable adjuvant therapy. Its saliva contains more than 100 enzymes like hirudin, hyaluronidase, Calin, Destabilase, Hirustasin,

Eglins, Factor Xa inhibitor, Anesthetic-like substances, Histamine-like substances etc. which acts as anticoagulant, anti-inflammatory, analgesic, venous decongestant etc.^[17] Here the hematophagous characteristics of leeches utilized to suck out blood blockages at the congestion site of varicose ulcer, with the simultaneous injection of anticoagulant and thrombolytic active substances into the body to promote restoration of the blood supply to new tissues and helps in wound healing at an early date. *Jalaukavacharan* results in local hyperemia, increases the permeability of the cell and improves tissue regeneration and blood circulation^[18]. *Jatyadi Taila* is a proven ulcer healing agent^[19], which may accelerate the wound healing along with *Jalaukavachara*. The symptoms like pain, itching and discoloration in lower limbs are caused by the vitiated *Vata*, *Pitta* and *Kapha* doshas, which is brought on by blood stagnation and tissue necrosis from improper circulation. *Sabachardi Taila*^[20] has been described for the treatment of *Sira Granthi* by Maharshi Vagbhata. The main ingredients of this drug like *Sabachara* (~*Strobilanthes ciliates* Nees), *Devadaru* (~*Cedrus deodara* Roxb.), *Dashamoola* & *Tila Taila* (~sesame oil) are having *vata-kapha Saman* (~pacifies *vata* & *kapha*), *Vedanasthapan* (~analgesia), *Granthibara* (~decrease in cystic swelling) and *Sothabara* (~substances reducing inflammation and swelling) properties. Thus, helping in reducing the pain and venous congestion. The drugs like *Chandan* (~*Santalum album* L.), *Manjistha* (~*Rubia cordifolia* L.), *Misreya* (~*Anthem graveolens* L.), *Satavari* (~*Asperagus racemosus* W.), *Usheera* (~*Vetiveria zizanioides* L.), *Goksharu* (~*Tribulus terrestris* L.) etc. also possess *raktasodhak* (~blood purifying property) properties which removes *Rakta dusti*^[21].

CONCLUSION:

Jalaukavacharan along with oral medication of *Sabacharadi Taila* capsule and *Jatyadi Taila* dressing shown promising results in relieving pain, itching and wound healing of the affected lower limb. *Jalaukavacharan* is useful to in eliminating of *Sthamika Raktadusti* (~localized vitiation of blood) and improves blood circulation to promote wound healing at a faster rate. Oral use of *Sabacharadi Taila* might be helpful in strengthening of venous system in the lower limbs by pacifying aggravated *Vata dosha*.

Limitation of Study:

There was mild change in the discoloration of affected part and no change observed in visible tortuous veins of the leg.

Patient consent:

A proper informed consent about the given treatment was taken from the patient before undergoing the treatment.

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