

ROLE OF LEECH THERAPY (JALUAKA-AVCHARAN) IN VARICOSE ULCER:-A CASE STUDY

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ABSTRACT

Varicose ulcer is a severe clinical manifestation of chronic venous insufficiency. It is responsible for about 70% of chronic ulcers of the lower limbs. The pathogenesis starts with dysfunction of venous valves causing venous hypertension which stretches the veins resulting in ulcer formation. If not treated properly, the ulcer may get infected leading to cellulites or gangrene and eventually may need amputation of the part of limb. If the conservative management like compression stocking, foot elevation, antibiotics and regular dressing of wound fails, then surgical treatment like skin grafting, sclerotherapy, laser

ablation or surgical correction of superficial venous reflux is practiced. However, recurrence of venous ulcers is common, ranging from 54 to 78% by the fifth year after healing. In Ayurvedic prospective, varicose ulcers can be correlated with, *Siragat Vat janya vran*'. *Sushruta* has advocated *Jalauka* (Leech) as one of the most effective method of bloodletting, useful even in infected and non healing wounds. Patient with varicose ulcers was advised to take *Mahamanjisthadi kwath* internally, *Teel* oil "*Dhara sweda*" over the lower limb along with weekly application of Leech around the ulcer followed by dressing with "*Yashtimadhu Ghrita*" which proved very effective and the ulcer healed completely in 30 days.

KEYWORDS: Varicose ulcer, *Siragat Vaat*, *Jalauka*, *Vrana*.

INTRODUCTION

Varicose ulcers are wounds that are thought to occur due to improper functioning of valves in the veins, causing venous stasis usually in the legs. Varicose ulcers appear when these

enlarged veins become congested with fluid buildup and infection occurs. It is the major cause of chronic wounds, occurring in 70% to 90% of chronic wound cases.^[1] They are also known as stasis ulcer or venous ulcers and are most commonly seen the female population.

The etiological factors include increased intravenous pressure, secondary to deep vein thrombosis, chronic constipation, long standing occupation etc. The pathogenesis starts with persistently increased intravenous pressure which damages the venous walls and results in stretching, loss of elasticity, hyper lipo-dermato-sclerosis and finally ulcer formation. Confirmation of diagnosis is done by Duplex Doppler ultrasound scanning of the lower limb venous System.

Conservative management of venous ulcers includes use of compression stocking or bandage to prevent worsening of varicose veins, foot elevation, antibiotics and regular cleaning and dressing of ulcer. However, if patient do not respond, then surgical measures like skin grafting, terminal interruption of reflux source technique (TIRS) by sclera-therapy, laser ablation of varicose veins or surgical correction of superficial venous reflux is performed.^[2]

If varicose ulcer is not treated properly or left untreated then, wound infection causing increased pain, swelling, redness and pus, loss of mobility and even severe complications like osteomyelitis, septicaemia or malignancy etc. may occur.

Statistics revealed that recurrence of venous ulcers is quite common, ranging from 54 to 78% by the fifth year after healing. Hence, we can say that in spite of all advances in health sciences, varicose ulcer management is still a difficult task for the surgeons.

In *ayurvedic* prospective, we can co relate varicose ulcers with “*Siragat Vat janya vran*”. *Sushruta* has described wound management in a most scientific way and given the utmost importance to Bloodletting therapy which is a part of *panchakarma* procedure according to *Susuruta*, and considered Leech as the most unique and effective method of bloodletting even in infected wounds and abscesses.

PATHOLOGY IN DELAYING VARICOSE ULCER HEALING

The pathogenesis of varicose ulcer starts with dysfunction of venous valves causing venous hypertension which stretches the veins. This allows blood proteins to leak into the extra vascular space. It isolates extra cellular matrix molecule and growth factor, preventing them from helping to heal the wound.

Similarly, leaking of fibrinogen and deficiency in fibrinolysis cause fibrin to build up around vessels preventing oxygen and nutrients from reaching cells. This also plugs the vessels causing ischemia around the wound resulting in delaying in wound healing. Further, the venous insufficiency causes leukocytes to accumulate in small vessels which releases inflammatory factors causes chronic wound formation.

AYURVEDIC TREATMENT FOR *SIRAGATA VATA JANYA VRANA*

Acharya Sushruta has exclusively mentioned the treatment regime for '*Siragata Vata*' which includes local oleation and fomentation along with Leech therapy.^[3] *Sushruta* has advocated 60 procedures (*Shashthi upakramas*) for wound management which can be practiced as per stage of wound and necessity. He has given the utmost importance to Bloodletting therapy and considered Leech as the most unique, effective method of bloodletting even in infected wounds and in abscess management. *Sushruta* has also specified that the wounds over the lower limb delays in healing.

References of indication of leech therapy in wounds

Leech therapy is considered as most unique and effective method of bloodletting. It can be tried in all mankind including Females, Children, Old and Patients having poor threshold to pain. It drains impure blood, useful in *Pitta dushit Rakta* diseases, various skin disorders and all types of inflammatory conditions.

In *Sushruta samhita Chikitsasthana*, chapter 12 and 16, *Sushruta* has advocated that bloodletting by Leech can be practiced in all inflammatory, suppurative and painful conditions to relieve pain and inhibit suppuration including that of non healing ulcerative lesions.^[4]

CASE REPORT

Objective of case study: To evaluate clinical efficacy of adjuvant Leech therapy in the patient with Varicose ulcer.

Type of study: Observational single case design without control group.

Study center: Hospital, Dsraru, Jodhpur.

Name of the patient- Not mentioned here Registration no: PH/OPD/2015/43362 and IPD/2015/4321.

Date of Admission- 07/11/2015, **Age-** 30 yrs, **Gender:-**Female, **Religion-** Momedian, **Occupation-** House wife, **Diet-** VEG - Non Veg Both.

- **Chief complaints and its duration**

Pain and Swelling over Left lower leg, Infected wound on medial aspect of left leg, Skin discoloration and Serous discharge from the wound since 2 years

- **Brief history (including onset and progress)**

Patient has been suffering from above symptoms since last 2 years. He took treatment for the same at private clinic but wound got infected and was not healing inspite of treatment for around 2 years. Hence, he came to Dsraru, Jodhpur, Hospital for further management. Patient's brief history did not revealed evidence of Diabetes, Hypertension, Asthama, Tuberculosis, Heart disease or any other major illness. Similarly, there was no history of previous surgery in past.

- **General examination (On day 1)**

All the vital parameters were within normal limits.

Hb – 12.5 gm/dl; Wbc – 8,000 /cu mm of blood; RBSL – 120 mg/dl; ESR – 12 mm /hour; Viral Markers– Negative; Coagulation profile– Normal; X-ray left leg – Essentially normal study; Other Examinations- Abdomen/Rectal Examination– No IVC obstruction, Pelvic tumor etc.

- **Arterial and venous colour Doppler**

Multiple incompetent perforators seen in the lower limb; Competent SF and FP valves; No evidence of DVT or Ischemia

- **Local examination**

(On day 1): Site of ulcer - Medial aspect of left lower limb; Size of ulcer - 4 x 2.5 x 0.5 cm; Shape- Oval; Smell – Foul smell+; Discharge: + +; Hyper pigmentation: ++++; Epithelisation: +; Granulation Tissue: +; Edges: Fibrosed, Sloping; Ankle flare – Positive; Local Temperature: Normal; Arterial Pulsation: Dorsalis pedis and Post tibial – Normal.

- **Diagnosis:** Non healing varicose ulcer.

MATERIAL AND METHODS

1. After the assesment, wound was washed with Normal Saline. There after 6 Leeches were applied all around the lesion. When Leeches left the site by their own (after sucking blood for approx. 30 min.) wound was cleaned and dressing with guage piece soaked in “*Yashtimadhu Ghrit*”(glycyrrhiza glabra) was done.
2. Dressing was changed on alternate day, where as “Leech therapy” was repeated weekly for 4 sittings. Total duration for treatment was 30 days and during the treatment assessment was done on Day-01, Day-07, Day-14, Day-21 and Day-30.
3. Patient was advised to take “*Mahamanjisthadi kwath*”(Rubia cordifolia)-20 ml with equal amount of water internally
4. “*Dhara sweda*” (fomentation) was done daily for 20 minutes (except the day of Leech therapy) with lukewarm *Teel oil* (*sesamum indicus* at 98.6°F temp) adjuvant to Leech therapy

OBSERVATIONS

Parameters of observation included Ankle flare, Perpheral hyperpigmentation, Size of ulcer, Granulation tissues and relief in Pain. Patient was observed on above parameters on every week for 5 weeks.

Table 1: Parameters of Observation.

Parameters	Grade			
Ankle flare	Base line 100 %	3=75%	2=50%	1=25%
Peripheral Hyper pigmentation	Base line 100 %	3=75%	2=50%	1=25%
Size of ulcer (cm)	Base line 100 %	3=75%	2=50%	1=25%
Granulation tissue	Base line 0%	1=25%	2=50%	3=75%
Pain	Base line 100 %	3=75%	2=50%	1=25%

RESULT

With “Leech Therapy” and adjuvant management, the wound completely healed within 30 days i.e. patient was cured from non healing ulcer. The images during and after treatment supports the statement mentioned.

Table 2: Progressive report.

Parameters	1 st week	2 nd week	3 rd week	4 th week	5 th week
Ankle flare	Base line 100 %	50 %	25 %	0	0
Peripheral Hyperpigmentation	Base line 100 %	75 %	50%	50%	25%
Size of ulcer (cm)	Base line 100 %	75 %	50%	5%	0
Granulation tissue	Base line 0%	25%	50%	5%	0
Pain	Base line 100 %	75 %	25%	25%	0

PROBALE MECHANISM OF ACTION OF LEECH THERAPY

Leech application corrects venous hypertension, reduces vascular congestion due to presence of carboxypeptidase A inhibitors, Histamine like substances and Acetylcholine,^[5] thus it venous valve dysfunction and extra vascular fluid perfusion. This prevents leakage of proteins and isolation of extra cellular matrix molecule and growth factors, thus helps to heal the wound.

Leech application has peripheral vasodilator effect due to presence of vasodilator constituent in the saliva which improves blood circulation and corrects “ischemia” around the wound, thus promotes wound healing.^[6]

Leech applications has Anti- inflammatory action on nerves due to presence of substance like *Bdellins* and *Eglins* in the saliva which prevents leukocyte accumulation in the surrounding vessels, thus inhibits release of inflammatory factors which causes chronic wound formation.

**Fig. 1: Presentation of varicose ulcer on Day 1.**



Fig. 2: Leech application in Varicose.



Fig. 3: Prognosis on Day 15.



Fig.4 Prognosis on Day 30

PROBALE MODE OF ACTION (AYURVEDIC PERSPECTIVE):

1. Vrana shodhana and ropana effect

After Leech application expulsion of impure blood takes place, due to which local vitiated *doshas* (toxins and unwanted metabolites) are removed. Similarly, it facilitates fresh blood supply and promotes wound healing by formation of “Healthy Newer Tissues”.^[7]

2. Effect of adjuvant therapy

- “*Teel oil*” fomentation improves blood circulation, corrects skin discoloration and pacifies venous valvular dysfunction. Thus, it breaks the pathogenesis of “varicosity” at cellular level and helps in wound healing.
- ‘*Yashtimadhu Ghrit*’ has both “*Vedanashamak*’ and “*vran ropan*’ property. Hence, it helps in Healing of wounds and relieves pain too.
- ‘*Sira*’ and ‘*Snayu*’ are the bi product (*updhatu*) of *Rakta* and ‘*Mhamanjishthadi kwath*’ has ‘*Raktaprasadniya*’ character. Hence, it facilitates formation of Healthy Newer tissues and also strengthens the blood vessels, thus corrects venous valvular dysfunction As per Ayurvedic texts, “*Manjishtha*’ purifies the *Raktadhatu* due to its *Raktaprasadniya*’ character. Further, once.

“*Rakta*’ is purified, its bi product (*updhatu*) i.e. “*Sira*” (veins) and its kinematics also gets pacified, thus may corrects venous valvular dysfunction when used internally along with adjuvant therapy.

However, a multi centric comparative clinical trial along with valvular studies is needed to evaluate impact of “Leech Therapy” on promoting wound healing w.s.r. to varicose ulcer.

CONCLUSION

With “Leech Therapy” and adjuvant *ayurvedic* treatment, the non healing varicose ulcer completely healed within 30 days. On the basis of this case study, we can roughly conclude that *ayurveda* can give a ray of hope in the treatment of varicose veins and ulcer. None of the complication like severe bleeding, wound infection or hypersensitivity was observed during the therapy. Leech therapy” proves to be effective, time saving, affordable and acceptable treatment. Though treating non healing “Varicose ulcer is a difficult task, we have managed to treat it with “Leech Therapy” along with conventional (Ayurvedic) methods of wound care. A multi centric comparative clinical trial alongwith valvular studies is needed to establish this unique treatment protocol.

REFERENCES

1. http://en.wikipedia.org/wiki/Venous_ulcer date 25/04/201313.
2. Bush, R. New technique to heal venous ulcers: Terminal interruption of the reflux Fig.3 “*Teel oil*’ *Dhara swed*” in Varicose ulcer Fig.4 Prognosis on Day 15 Fig.5 Prognosis on Day 30 Dwivedi Amarprakash: Management of Non Healing Varicose Ulcer In Ayurveda

- 6 www.iamj.in IAMJ: Volume 1; Issue 3; May – June 2013 source (TIRS). Perspectives in Vascular Surgery and Endovascular Therapy, 2010; 22(3).
3. Dr. Anantram Sharma, “Sushrut vimarshini” commentary on Sushrut Samhita, Chikitsa sthan- Chapter 4 (Vat Vyadhi chikitsa- Shlok 7) Published by Chaukhambha Prakakashan- 2009; 2: 205.
 4. Illustrated Sushrut Samhita, Translated by K. R. Srikant Murthy, Second edition: 2004, Vol. 1, Chapter 13, Shlok no.4, Page no.78, Chapter 23, Shlok no. 6-7, Page no.170-171.
 5. Medicinal Leech Therapy, Author: Andreas Mechallsen, Manfred Roth, Gustav Dobos. Publication-Theme, New York, USA, 2007. Page no. 11-12, 132-138. (This book is an authorized and Revised translation of German Edition published and copyright 2006 by Karl F., Hang Verlag. Title of German Edition-“Bluteqeltherapie”).
 6. Weinfeld AB et al, Clinical and Scientific consideration in Leech therapy for the management of acute venous congestion, “An update review. Ann Plastic Surg, 2000; 45: 207-221.
 7. Amarprakash P. Dwivedi, Case Study of Leech Application in Diabetic foot ulcer, IJRAP (International Journal of Research in Ayurveda and Pharmacy), Volume 3, Issue 5, Sep-Oct 2012 CORRESPONDING AUTHOR Dr. Dwivedi Amarprakash Department of Shalya Tantra, Dr. D.Y. Patil college of Ayurveda, Mumbai, Maharashtra, India Email: dr.dwivedi@amarayurv.