



Role of Jalaukavacharrana (Leech therapy) in the management of Varicose Vein)

Dr Baljeet Singh Nehra Assistant Professor, Dept of Shalya Tantra, MLR Ayurvedic College
Charkhi Dadri.

Corresponding Author: Dr Baljeet Singh Nehra Assistant Professor, Dept of Shalya
Tantra, MLR Ayurvedic College Charkhi Dadri.

Email- nehra.drbaljeet@gmail.com

Mobile- 7357202000

Abstract-

Jalaukavacharan is one of the procedures of Raktmokshana. Sushruta, the founder of Indian surgery, described the prehistoric biosurgical technique known as raktmokshana. According to legend, Lord Dhanwatari emerged in this realm following Samudra Manthan, carrying Jalauka and a pitcher of nectar in each hand. This demonstrates the significance of Jalauka in Indian medicine. Since they are acclimated to the water or live in Jala, they are known as Jalauka. Rakatajroga should be treated with Raktmokshana. Over 20% of adult Americans in the United States have varicose veins, which are symptoms of chronic venous illness. In the US, the annual direct medical cost of chronic venous illness is pegged between 150 million and 1 billion. Varicose veins can lead to more severe issues while typically being viewed as nothing more than a cosmetic annoyance. The goal of this article is to support nurse practitioners in the identification and management of varicose veins. Updated analyses of treatment outcomes over the short- and long-term from more recent procedures are described.

Keywords- Ayurveda Jalaukavacharrana, Leech therapy, Varicose Vein.

Introduction-

Ayurveda is a medical system that has its origins in the Indian subcontinent and has been practised for over 6,000 years. Raktamokshana, according to Acharya Sushruta, is the greatest technique since it balances the three vitiated doshas, namely Vata, Pitta, and Kapha. In general, there are three different ways to perform raktamokshana: Sira-vedh, which uses a simple scalp-

vein cannula to draw blood from prominent superficial veins; Jalaukavacharana; and Prachhan karma, which involves making several incisions at one location. Through the parasurgical process known as Raktmokshan, the leech therapy (Jalaukavacharana) branch of the surgical branch of Ayurveda has been employed to treat a number of diseases. Leech sucks only impure blood. Leech therapy is therefore seen as a form of blood cleansing therapy. "Jalaukavacharniya" is one of the chapters in Sushruta Samhita, a treatise on surgery.¹ Since ancient times, Ayurvedic doctors have used leech therapy. Leech use started to decline at the end of the 19th century as a result of a disruption in the flow of knowledge. Leech therapy reemerged at the end of the 19th century as a result of its function as beneficial surgery. In plastic and reconstructive microsurgery, leech therapy is frequently utilised as a venous congestion prevention measure. Raktmokshana should be performed in the autumn as a routine therapy for the purification of vitiated body humours. There are two forms of raktmokshana. One is Shastra Vistravan, which calls for using sharp objects for Raktmokshana. Both Siravedha, also known as venipuncture, and Pracchana—letting the blood flow through numerous incisions—include Jalaukavacharan, Alabu, and Shrunga.²

Nirukti: The word "leech" is derived from the Old English noun "laece," which meant "physician." Due to the word's etymology, leeches were associated with healing in mediaeval England.³ Leeches are known as Jalauka in Ayurveda since Jala is the foundation of their existence, the location of their residence, and the source of their nutrition (water).

Historical review of Jalauka: Jalouka was cited by Acharya Charaka as the greatest Anushashtra, and Acharyas Sushruta Vagbhat and Harita concentrated on using Jalouka. In depth in their writing.

Types of jalauka- Jalaukas are divided into two types-

1. Savisha Jaloka (Poisonous leeches) - Hirudo detrimental
2. Nirvisha Jaloka (Non- poisonous leeches) - Hirudo medicinalis

Savisha Jalauka (Poisonous Leeches): These leeches live in contaminated water and are born from the putrefied (decayed) dead corpses of toxic fish, insects, worms, and frogs as well as their urine and excreta.⁴ These feature a variety of rainbow-like markings on their back and are red, white, or very black in colour. They are also hyperactive, stout, and slimy. These must be ignored.⁵

Nirvisha Jalauka (Non-poisonous Leeches): These are non-toxic and were born in clean water (Nirvisha). They have a spindle-shaped body with a dark back and a yellowish belly, and they have a bluish-black colour that resembles algae. They are powerful, ravenous, and swift to devour blood. They come from decomposed Padma (a lotus), Utpala (a white lotus), Nallina (a slightly red lotus), Kumuda (a lily), Saygandhika (a highly fragrant lily), Kuvalaya (a red lily), Pundanke (a very white lotus), and Saivata (algae).⁶

Gunas of Jalaukas : Sheet , snighdha , shlakshna action on dosha Pittahara.

Important Component of leech saliva-

1. Apyrase Adenosine triphosphate-based inhibitor of platelet aggregation.

Hirudin binds to thrombin and prevents blood from coagulating.

3. Bdelins are anti-inflammatory and inhibit trypsin, plasmin, and acrosin.

4. Hirustasin suppresses kallikrein, which is in charge of maintaining a proper blood pressure level during intrinsic coagulation.

5. Histamin-like compounds Vasodilators boost blood flow input at the bite site.

Eglins

6. Inhibits the activity of chymotrypsin, subtilisin, cathepsin G chymase, and elastase. Anti-inflammatory.

7. Hyluronidase has an antibacterial action and increases interstitial viscosity.

8. The conversion of prothrombin to thrombin by coagulation factor Xa is inhibited by the inhibitor.

9. By preventing the binding of collagen's von Willebrand factor, calin reduces blood coagulation and platelet aggregation caused by collagen.

10. Antitryptase medications inhibit the host mast cell's proteolytic enzymes.⁷

Indications of Jalaukavacharan: Jalaukavacharan should be performed, especially on kings, wealthy people, kids, seniors, women, and sukumar people, according to Acharya Sushruta. Leeches are the favoured method of bloodletting for non-healing sores caused by venom or poison, where rakmokshan is prescribed to promote healing. when treating an abscess. Inflamed scrotal edoema was caused by several glandular inflammatory swellings. Jalaukavacharan has been recommended by Acharya Sushruta as a necessary step before incision and drainage in order to locate the abscess.⁸ Use of leeches in surgery poses a major risk for tissue necrosis in plastic surgery due to the possibility of venous blockage leading to thrombus development and stasis. Consequently, reducing venous congestion is a crucial step in maintaining transplanted tissues. The blood oozing caused by a leech bite has a cumulative impact that is relieved by the presence of bioactive enzymes, anticoagulants, and vasodilators in the leech's secretion. After microsurgery for cases of scalp avulsion, leeches have been reported to successfully improve blood flow. Patients who underwent surgical procedures for the reconstruction of their fingertips were given instructions for leech application as post-operative care.⁹ Numerous studies on individuals with osteoarthritis who reported that leech therapy is more pain-relieving than topical Diclofenac sodiums demonstrated the analgesic properties of Jalaukavacharan.

Contraindications of Jalaukavacharan-

Under the following disorders, leech therapy is not advised:

Severe anaemia, erosive gastritis, the risk for gastrointestinal bleeding, haemophilia, Throughout chemotherapy (or people who are on immunosuppressive medication), extreme allergic reaction (allergy to foreign proteins), pregnancy, hypotension, and acute instances of mental illness, Current tuberculosis.¹⁰

Mode of Action of Jalaukavacharana-

Saliva contains biological elements that cause leeches to act. More than a hundred bioactive compounds, including an anaesthetic, anti-platelet aggregation factor, anti-inflammatory, and antibiotic agents, are found in this saliva. These substances widen blood vessels to increase blood flow to the biting site and anaesthetize the wound region to make the leech's bite to its host painless. The table below includes a list of the significant components of leech saliva.¹¹

Varicose veins-

In the subcutaneous tissues of the legs and ankles, varicose veins are convoluted, swollen, palpable, and typically blue or dark purple. They are also frequently obvious. Twisted, dilated veins called varicose veins are most frequently found on the lower limbs.¹² Incompetent valves, weaker arterial walls, an elevated intravenous pressure, and a hereditary susceptibility are all factors in the pathophysiology, although the exact details are still up for debate. Female sex, advanced age, persistently elevated intra-abdominal pressure brought on by obesity, pregnancy, chronic constipation, or a tumour, as well as prolonged standing, is risk factors for venous illness. A heavy, achy feeling, as well as an itchy or burning sensation, is varicose veins symptoms that get worse with extended standing. Leg ulcers, stasis changes, infection, and thrombosis are all possible side effects.¹³ External compression, lifestyle changes like avoiding prolonged standing and straining, exercise, wearing loose-fitting clothing, modifying cardiovascular risk factors, interventions to reduce peripheral edoema, elevation of the affected leg, weight loss, and medical therapy are examples of conservative treatment options. Compression stockings may be used to treat varicose veins when there are no active or healed venous ulcers, however there is insufficient data to make that determination. Interventional therapies include surgery, endovenous thermal ablation, endovenous sclerotherapy, and external laser thermal ablation. Endovenous thermal ablation, which can be carried out under local anaesthesia and might have better results and fewer complications than other treatments, has largely replaced surgery, which was once the standard of care.¹⁴ Although it could be required for insurance reimbursement, the evidence currently available and clinical recommendations suggest that a trial of compression therapy is not warranted before referral for endo-venous thermal ablation.

Causes of Varicose Vein-

The causes of varicose veins may be primary, secondary, or congenital.

- **Primary Varicose Veins-** Varicose veins have a hereditary component, or natural vein wall weakness, and can affect some family members.
- **Secondary Varicose Vein-** Varicose veins that form as a result of secondary causes, such as deep vein thrombosis or trauma.
- **Familial and Congenital Varicose Veins-** are brought on by vascular malformation in the limb, which is present at birth, which leads to disorders in the natural development of the venous system. Syndrome Klippel-Trenaunay (KT syndrome).

Diagnosis of Varicose Vein-

Keeping a history, comprehensive physical examination in enough light, a positive tap test and an unfavourable Perthes test Doppler test, an ultrasound that looks for blood clots in the veins and an angiogram that determines the direction of blood flow in the veins, Venography and tourniquet testing.

Management of Varicose vein-

Leech therapy reduces oedema and hyperpigmentation while being useful in treating complex varicose veins.¹⁵ it cures post-phlebitis syndrome, in which deep vein thrombosis destroys venous valves. Given that factor Xa inhibitors like calin and hindudin, which prevent blood from coagulating, are present in leech saliva, leech therapy is particularly helpful for DVT. Blood clots are broken apart by leech's thrombolytic action. Three substances found in leech saliva work as vasodilators, such as acetylcholine, etc. Leech saliva also contains an attractive chemical. Together, all substances reduce blood viscosity, resulting in a thinner blood consistency that facilitates better flow.¹⁶

Discussion-

Leech therapy is becoming more popular all over the world and is regarded as the best form of treatment. Numerous bioactive compounds, including vasodilators, anaesthetics, and analgesic effects, can be found in leech saliva. In the treatment of inflammatory and degenerative joint illnesses like gout and osteoarthritis, it is therefore more effective than topical analgesics and anti-inflammatory drugs. The best way to treat venous congestion is to apply leeches because the tiny blood volumes they remove and the increased blood removal during the passive-bleeding phase of leech therapy significantly reduce venous congestion. Numerous anticoagulant substances found in leech saliva also aid in reducing venous obstruction caused by conditions like Burger's disease, varicose veins, venous thrombosis, etc. Leeches have also been shown to be beneficial for diabetic feet and non-healing ulcers. Leeches with sheet Virya,

according to Ayurveda, are widely used in a variety of skin disorders because Rakta dosha vitiation is the primary cause of the majority of skin diseases.

Conclusion:

Leech therapy, or jalaukavacharan, is extremely beneficial for both acute and chronic illnesses. The panchakarma method is practical and can be used in a variety of circumstances. Modern investigative tools have made it possible to better understand the mechanism of action of jaluka. Numerous bioactive substances with analgesic, anti-inflammatory, antiseptic, and antibacterial properties are present in leech saliva. In the fields of plastic surgery, inflammation (including osteoarthritis and rheumatoid arthritis), venous congestion, and varicose veins, leech therapy is beneficial. Although leech therapy has Ayurvedic roots, modern medicine today recognises its value in treating a variety of illnesses. It is also regarded as a wonder treatment.

ACKNOWLEDGEMENTS: Not Applicable

ABBREVIATIONS: Not Applicable

SOURCE OF SUPPORT: None

REFERENCES-

1. Yadavji, T. V., Acharya 2009b. Shri Dalhanacharaya Nibandhasamgraha commentarator of Sushruta Samhita. Sutra Sthan Shonitavarniyama Adhayay chapter, 25:53–53.
2. Ahmad, T., Anwar, M. 2009. Clinical importance of Leech therapy. Indian Journal of Traditional Knowledge, 8(3):443–445.
3. Mory Robert N, Mindell D, Bloom DA. The leech and the physician: biology, etymology and medical practice with *Hirudinea medicinalis*. World J Surg 2000.
4. Prof.K.R.Shrikantha murthy, Illustrated Sushruta Samhita Vol. I, reprint., Varanasi, Chaukhamba Orientalia, 2010,
5. Dr.Rajneesh V.Giri, Synopsis of Sushruta Samhita, reprint edi., Varanasi, Chaukhamba Orientalia, 2007.
6. T.Sreekumar: Principles of Ayurveda, Astangahrdaya Vagbhata, Sutrasthana-II, with English translation & commentary, Chapter Sastravidhi 26/37-38, P. 192.
7. Andreas Michalsen, Manfred Roth, Gustav Dobos; Medicinal Leech Therapy, New York 2007.
8. Srikantha Murthy KR. Ashtanga Hrudaya, Sutrasthana. 1st ed. Varanasi, India: Krishnadas Academy; 1991
9. Natkarni KM. Indian Materia Medica. Vol. 2. 3rd ed. Mumbai, India: Popular Prakashan; 2009: 169.
10. Andreas Michalsen, Manfred Roth, Gustav Dobos; Medicinal Leech Therapy, New York 2007;
11. Andreas Michalsen, Manfred Roth, Gustav Dobos; Medicinal Leech Therapy, New York 2007.
12. National Clinical guidelines centre. Varicose veins in legs: The diagnosis and management of varicose veins; Commissioned by the National Institute for Health and Care Excellence. July 2013
13. Jones RH, Carek PJ. Management of Varicose Veins. Am Fam Physician 2008;
14. MC Nogaro, D J Pournaras, C Prasannan, A Chaudhuri. Varicose vein. BMJ 2012;344:e667 doi: <http://dx.doi.org/10.1136/bmj.e667>.
15. Bapat RD, Acharya BS, Juvekar S, Dhanukar SA, Leech therapy for complicated varicose veins. The Indian J, of medical research.1998;107;281- 284.
- 16.Kaur, R., Chhabra, S., Singh, A. 2015. Role of ayurvedic medicine and leech thrapy in management of deep vein thrombosis: a case study. Journal of Biological & Scientific Opinion, 3(2):87–90