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Review Article

Review of Bloodletting Therapy with Special Reference to Jalaukavacharan (Leech Therapy) in Managing Skin Disorders

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A B S T R A C T

Introduction: Rakta Mokshana (bloodletting) is one of the Panchakarma-related therapeutic procedures described in Ayurvedic literature for the management of diseases associated with vitiated blood (Rakta Dushti). Many skin disorders (Kushtha and Kshudra Kushtha) are considered to involve the vitiation of Rakta along with Doshas, particularly Pitta and Kapha.

Objective: The objective is to evaluate the role and therapeutic significance of Rakta Mokshana with special reference to leech therapy in the management of skin disorders from an Ayurvedic perspective. A review of classical Ayurvedic texts and relevant contemporary literature was conducted to assess the indications, methods, mechanisms, and clinical applications of Rakta Mokshana in dermatological conditions.

Method: Common techniques include Siravedha (venesection), Jalaukavacharana (leech therapy), Prachchhana (scarification), and Alabu/Ghati Yantra procedures. Rakta Mokshana is reported to help eliminate vitiated blood, reduce local inflammation, improve microcirculation, and alleviate symptoms such as itching, erythema, discoloration, burning sensation, and recurrent lesions. Leech therapy, in particular, has gained attention due to its anti-inflammatory, analgesic, and anticoagulant effects. Observations: Clinical observations suggest beneficial outcomes in conditions analogous to eczema, psoriasis, acne, and other chronic skin disorders when used as part of a comprehensive Ayurvedic treatment plan.

Conclusion: Rakta Mokshana remains an important Ayurvedic therapeutic modality for skin diseases associated with Rakta Dushti. Its detoxifying and disease-modifying potential may contribute to symptomatic relief and improved quality of life.

Keywords: Rakta Mokshana, Ayurveda, Skin Disorders, Kushtha, Leech Therapy, Panchakarma, Rakta Dushti

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Introduction

Ayurveda, the great medical science of India, is now practiced as an alternative therapy under the traditional and complementary medicine section, but as the challenges of resistant cases are alarming day by day, Ayurveda has the only hope.[1] Rakta mokshana, or bloodletting, has been practiced in India for thousands of years.[1,2] Our saints included this procedure under the five biopurificatory procedures. They said that removal of impure blood from the body treats the root cause of the sufferings.[5] There are various ways to remove the impure blood from the body, like Shring, Jalauka, Alabu, Siravedha, and Prachchchana.

Jalaukavacharan, or the use of leeches in healing, is an original therapeutic approach of Indian physicians, and it is considered their outstanding contribution to the health sector. Leech therapy is crucial from a surgical point of view, but it is equally important from a medical point. In many instances when disease is not subsided by drugs, only then does leech therapy give wonderful results. Acharya Charak has described three treatment approaches, i.e., Nidana parivarjana, Shodhana, and Shaman chikitsa. Shodhana (purification) therapy is an exclusive concept of Ayurveda and has tremendous outcomes. Among the five cleansing procedures, Raktamokshana (bloodletting) is included as the 5th according to Acharya Vagbhat, and it should be practiced whenever blood is sought to be Dushit (infected). Susruta, the ancient Ayurvedic surgeon, is honored as the Father of Surgery and has described various methods of Rakta mokshan. In leech therapy the vitiated 'doshas' are removed from the body without using any cutting instruments. Hence, Raktamokshan by means of 'Leech' comes under the 'Anushastra' or Ashastra category. It is a safe and gentle method of bloodletting, so it is considered the most unique & most effective method of bloodletting. But despite the numerous qualities of leech therapy, it is practiced by very few vaidyas.

Skin is the largest organ of the human body and is the outer covering of the whole system. Skin diseases are disorders that affect the skin, hair, nails, or related tissues. They can be caused by infections, allergies, immune system problems, genetics, environmental factors, or lifestyle habits. According to Ayurveda, skin has Rasa and Rakta dhatus, Bhrajak Pitta, Lasika, Kleda, and Sveda malas. Kushtha roga and Kshudra roga are the disorders that affect the skin.

Indications of Leech therapy

Bloodletting can be done by Jalauka (leeches) in those who are rich, weak, fearful, sophisticated, or old, and in the case of females, leeches are sheet (cold) in nature and commonly used in Pittaja and Raktaj disorders.[3] Leeches first suck the impure blood, then the pure. So, when a patient feels pricking pain and itching over the bite place, the leech should be removed, and the leech should undergo emesis to expel the dirty blood.

Types of Leeches

In Ayurveda texts, leeches are broadly divided into Savisha (poisonous) and Nirvisha (non-poisonous) categories. The use of only nonpoisonous leeches is indicated for therapeutic purposes. The Savisha varieties are Krishna, Karbura, Alagarda, Indrayudha, Samudrika, and Gochandana. The Nirvisha are Kapila, Pingala, Shankumukhi, Mushika, Pundarikmukhi, and Savarika. Shankhamukhi is mostly used for therapeutic purposes; its color is like that of a liver, and it is rapidly blood-sucking in nature.

General scientific review

There are two species of therapeutic medicinal leeches, Hirudo medicinalis and Hirudo mychaelseni. This is a segmented worm, of phylum Annelida. Leeches have two suckers, one at each end, caudal (back end) and rostral (front end), the front end with three sharp jaws that leave a 'Y'-shaped bite mark. A leech can remain for 30 minutes to 6 hours as it fills with blood; during feeding, it can suck 5-15 ml of blood. Following the suction process, the leech can perform active movements after a week. The Leech stores the sucked blood over months in its stomach and digests it within a period of one and a half years. Leech saliva contains several bioactive substances, including prostaglandins, vasodilators, anesthetics, and anticoagulants. Hirudin, a potent anticoagulant found in leech saliva, inhibits the conversion of fibrinogen to fibrin, thus preventing blood clotting. Other existing substances include calin, apyrase, hyaluronidase, egline, destabilase, piytavit, and collagenase. Away from the removal of impurities (dosha), leeches serve two functions: one is their biophysical action done by suction pressure created by them on the arterioles, venules, and capillaries, and second is biochemical action performed by their saliva, which contains several bioactive substances, including anticoagulants, anesthetics & vasodilators, leading to the cleaning of microvascular blockage.[6,7]

Maintenance of medicinal Leeches

The leech will survive quite happily in a cool place provided the temperature does not exceed 15-25 degrees Celsius. Avoid direct exposure of sunlight to the leeches; the water where the leeches reside should be dechlorinated & sterilized. When changing the water, the replacement water is of the same temperature as the previous. For best results, we should keep 2 leeches per 250 ml of water. Naturally, the leeches engulf algae, fish blood, flesh, etc.[6]

Ayurveda classical indications and contra indications

There are various disorders where leech therapy can be done, like Vidradhi (abscess), Gulma (lump), Arsha

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(piles), Kushtha (skin diseases), Vatarakta (gout/sclerosis), Kantharoga (throat diseases), Netraroga (eye diseases), Granthi (cyst), Arbuda (tumor), Shlipada (filariasis), Vidarika (rhagades), Vishadamshtra (poisoning), Visharpa (pemphigus), Siroroga (headache), Khalitya (baldness), Dantaveshta (dental disorders), etc. Bloodletting should be done by Jalauka in case of Grathita and avgadha rakta (thick & clotted blood) (A.H.S.-26/53).

There are some contraindications also for leech therapy, like Shotha (generalized edema), Krisha (emaciated person), Amla bhoji (acidic food inhabitants), Pandu (severe anemia), Udara rogi (abdominal disorders), Shosha rogi (tuberculosis), and Garbhini (pregnancy) (S.S.-14/24).

Materials and equipment's for leech therapy

Ideally a separate room for leech therapy is preferred; this room should be well equipped with a patient bed and chairs and have a good source of water for cleaning purposes. Separate tanks and/or bottles for storage of used and unused leeches are required. The dressing trolley, having surgical gloves, gauze pieces, micropore, cotton bandages, sterile needles, blood pressure instruments, sterile enamel bowls, and emergency medicines, should be ready. Cleansing and dressing material like turmeric powder, mulethi (Indian licorice) powder, artery forceps, thermal cautery, lime powder, alum, etc. will be stored.

Preparation of the patient

The Vaidya should select the suitable patient according to textual indication; the following blood investigations should be done before the procedure to avoid any complications during or after the bloodletting procedure: TLC, DLC, Hb%, ESR, bleeding time & clotting time, random blood sugar, and viral markers like HIV and HBsAg. Laghu Aahar (light semi-solid diet) like Yavagu (rice porridge) is advised to be taken before the procedure. The desired site should be properly washed with clean water, and mild dry Swedish (local heat) can be given to the site of bloodletting.

Method of application

It should be performed on a clear day, not at Marma place, after a light meal and after mild svedana (sudation); the person should not be intoxicated, and the season should not be very cold or very hot (S.S.-14/26-30). The method of leech application can be divided into three parts: Purva karma, Pradhana karma, and Paschat karma.

Purva karma (Before procedure)

First, do proper swedana of the local part of the patient; thereafter, a fresh leech from the tank/jar is chosen & dropped in a tray or bowl filled with clean water. Fine turmeric (Haridra) powder is mixed in to clean them externally as well as to make them germ-free. An inactive leech becomes highly active & motile, which indicates its craving for food (bubuchhita). After this, the active leeches are selected & transferred into another tray having clean water.

Pradhana karma (Main procedure)

Make square-shaped cotton pads of the desired length and place them on the skin surface after soaking them in clean water. Now, wear the gloves and grasp the leeches gently and place them under the wet cotton pads. The number of leeches depends on the site and size of the lesion or the area of illness the physician needs to cleanse. Roughly one leech can clean up to one palm area (hasta pramana) through sucking. If they are not attached to the desired site by themselves, hold them by their neck & apply them directly to the skin. Once leeches start sucking the blood, they should be covered with wet gauze & cold water should be poured on them from above time to time. Sometimes leeches don't attach directly; then application of honey or blood or butter or pricking by needle will be helpful. The leech, when once it starts sucking the blood, elevates its neck like a horse's foot and fixes its tail to the supporting point of skin. One can observe wave-like movements indicating sucking of blood. When a leech becomes fully satisfied with its food (indicated by pain & itching at the bite place), it leaves off the skin of the patient & drops itself down. If not, in such a case, after 45 – 60 minutes, a little turmeric powder is placed on the sucking point of the leech, & immediately the leech takes away its mouth from that point. Thereafter, a little compression of the bleeding point with cotton gauze is required; then pour some mulethi powder over the wound and bandage the site with cotton and micropore.

Paschata karma (After procedure)

The following symptoms will be observed after proper bloodletting: a feeling of lightness in the body or at the affected place, pain subsiding, a decrease in the severity of disease, and a feeling of happiness. (S.S. - 14/33)

Thereafter, induction of emesis in the leech by dusting haridra churna (turmeric powder) on its mouth should be done. Sometimes pressing of a leech from the caudal to front end along its side is required for proper emesis. Leech should be freed in fresh water, where it swims swiftly and then settles down. If proper emesis is not performed, the leech is said to be Durvanta and can die due to Indramada roga. The Leech stores the sucked blood over months in its stomach and digests it within a period of one and a half years. Replace the leeches in a clean jar or aquarium labeled with the patient's name, age, sex, date & diagnosis. Thereafter, the patient is allowed to sit for some time before leaving the therapy room. These leeches should be reused only after one week. The water should be changed after every 3 days, and the pot should be changed after every 7 days.

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Frequency of Leech application

The frequency of leech application will vary according to the disease and severity, but mostly the same leech should be applied once a week up to eight sittings or till the disease subsides. One leech should be reserved for a particular patient to avoid cross-infection by labeling the bottle. A few biochemical examinations, like Hb%, TLC, DLC, blood urea, and serum creatinine of patient blood and leech-sucked blood, do not show any change on testing.

Complications of Leech therapy

If the leech is not properly selected or cleansed by turmeric powder, it can cause lymphadenitis, pneumonia, septicemia, or gastroenteritis due to the infection caused by the bacteria Aeromonas hydrophila present in the gut of leeches. It can cause excess blood loss, so it is contraindicated in patients with hemophilia or in others with bleeding disorders. Allergic reactions such as itching followed by burning and blister formation or ulcerative necrosis have been reported in a few cases.

The maximum bloodletting that can be allowed in one sitting is 1 Prastha (600 ml) by venesection. If there is excessive bleeding from the wound, use the following restorative measures, like sprinkling powders of astringent (Kashaya) drugs on the wound to stop bleeding, like lodhra or udumbar powder. Further, use an excessively cold bandage on the site to stop bleeding or use medicine to enhance the coagulation process at the bleeding site, like Resham Bhasma. One can use excessive heat at the bleeding place to char the blood vessels (thermal cautery). Sometimes to restore the blood loss, Raktapana (intravenous blood transfusion) or Rakta Basti (enema of blood) is advised. Raktavardhak ahar & aushadhi should be given, like iron preparations (Lohasava) and Amla & Katu ahar. (S.S.-14/40-43)[6,7]

Discussion

Rakta mokshana, or bloodletting, has been practiced in India for thousands of years.[1,2] Acharya Sushruta and Vagbhatta included this procedure under the five bio-purificatory procedures; they said that removal of impure blood from the body treats the root cause of the sufferings like morbid Rakta and excess Pitta because they believe that blood is the 4th Dosha. So, when it gets infected, removal of it by various means is the only method to restore health. But classical Panchakarma doesn't include Raktamokshana. There are five methods for bloodletting: Sringa for Vata-dushita rakta, Jalauka for Pitta-dushita rakta, Alabu for Kapha-dushita rakta, Siravedha for tridosha-dushita sarvang rakta dushti, and Prachchhana for ekanga rakta dushti.

From a medicinal point of view, bloodletting by leeches and alabu is usually practiced. Mostly bloodletting can be done by Jalauka (leeches) in those who are rich, weak, fearful, sophisticated, old, and, in the case of females. Leeches are sheet (cold) in nature and commonly used in Pittaja and Raktaja disorders. It is considered the most unique & most effective method of bloodletting.[2]

Leeches first suck the impure blood and then the pure, so when a patient feels pricking pain and itching over the bite place, the leech should be removed. Leeches should undergo emesis to expel the dirty blood. A total of 12 types of leeches are described in texts; among them, 6 are poisonous and 6 are non-poisonous, and for treatment, only non-poisonous varieties are being used. Treatment of various skin disorders by application of leeches can be seen in Figures.



Figure 1. Palmer Psoriasis



Figure 2. Pemphigus vulgaris

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Figure 3. Eczema



Figure 6. Vitiligo

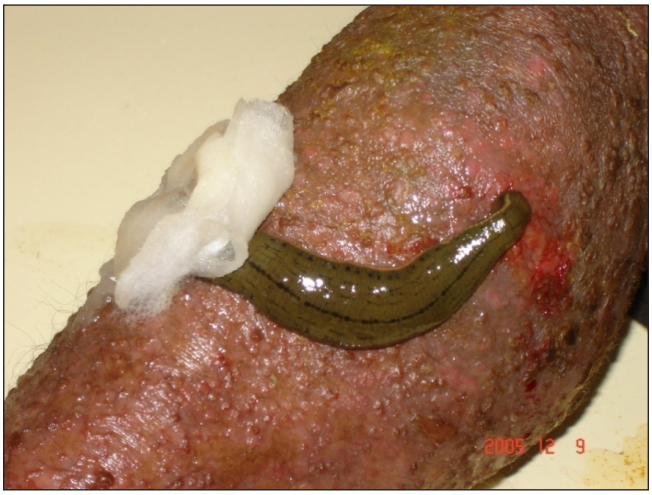


Figure 4. Psoriasis



Figure 6.Acne vulgaris



Figure 5.Alopecia



Figure 7.Psoriatic arthritis

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Figure 9.Plantar Psoriasis



Figure 10.Gouty Arthritis

Conclusion

We have found excellent results on using leeches for bloodletting; the severity of eczematous patches has disappeared, there are no new blisters in pemphigus, acne on the face and dark patches have subsided effectively, lesions have vanished in psoriasis, and new hair roots have appeared in cases of alopecia. As said by Sushruta, it sucks the impure blood of the body; the impurity can be realized in terms of autoimmune reactions, enzymatic and hormonal imbalance, chemical imbalance, etc. From the present study it can be concluded that leech therapy is very effective in the following diseases: atopic dermatitis, psoriasis, alopecia, vitiligo, filariasis, non-healing ulcers, and acne vulgaris. Further, according to Acharya Sushruta, for persons who regularly undergo bloodletting, the following disorders don't appear: Twak dosha (Kushtha), Granthi, Apachi, Kanthamala, and Shopha (S.S.–14/34).

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