

**APPLICATION OF LEECH THERAPY: AN INTEGRATIVE
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ABSTRACT

Leeches may also be used in plastic surgery and in some blood circulatory problems. During feeding, leeches secrete a complex mixture of different biologically and pharmacologically active substances into the wound. Hirudin is the prominent constituent of leech saliva. Modern hirudotherapy differs from that of ancient one because now we do not use wild leeches but grown in a special bio factories where they are in severe quarantine. Except, now a days the leeches used only once. After using a leech it is destroyed this fact excludes infection of the patients. The absolute safety and obvious advantage of hirudotherapy and checked up by thousands of years of experience of mankind and does not cause any doubt in the secretion of medicinal leeches salivary gland, except hirudin inhibitor of ferment

thrombin, there is a whole range of biological active combinations.

KEYWORDS: Leech, Raktamokshana, Safety, Hirudin, Salt, Turmeric, Natural Habitat.

INTRODUCTION

Aacharya Sushruta, the father of ancient Indian surgery, describes about physiological, pathological role of Rakta and its importance in surgical and Para surgical procedures. Leech Therapy is claimed to be the supreme therapy because of its high efficiency in the curing blood related disorders. It is safer and less complicated natural process therefore indicated even for the king, rich, old, fearful, weak, women, and the people of tender nature.^[1]

Leech sucks the impure (Dushta) Rakta from the mixture of Dushta and Shuddha Rakta, like Hamsa (Swan) drinks milk from a mixture milk and water.^[2] Prof. Charles Lent, leading biologist of U. S. said that, Leeches are useful in removing the blood from areas where tissue has been transplanted or reattached. Because when blood accumulates, tissue may die before it heals. Applying leeches to the area once or twice a day for a week give capillaries time to grow across sutures and restore blood circulation.^[3]

Method of leech application

Leech application is done as follows

Pre-application procedures patient Examination and Preparation: Patients' general health is first examined, before providing appropriate information about the use of leeches and their actions. Mornings is the preferred time to apply leeches as the leeches will be fresh and not hyperactive. The leeches are applied with patients sitting or supine, in a way that exposes the affected part comfortably. The previous day, oil and/or sweating treatments are given, depending on the patients' conditions.^[4]

Leech application procedures: The area to which a leech is to be applied must first be cleaned thoroughly with sterile water. Disinfectant or soap should be avoided, as this can irritate the leech and prevent it from attaching. The leech should be taken from its jar and its mouth placed precisely over the spot where the blood is to be removed. The leech's tail should be held until it begins to draw blood, at which time it can be gently released. The leech should be lightly covered with moist cotton (cotton material or cotton wool) while it works. This should be kept wet until the end of the process by applying a few drops of water, as needed. If a leech refuses to bite, then a drop of milk or ghee can be applied to the skin in the affected area, to encourage it. A small puncture made through the skin can also help by giving a reluctant leech a drop of blood to initiate sucking. If a given leech still fails to suck, despite these measures, it should be replaced by another.^[5] A leech can be made to bite in a particular area by placing a piece of paper in which there is a small hole over the desired spot and placing the leech's mouth over the hole. This will automatically direct the leech to suck blood from the desired location.^[6] Do not irritate the leech or force it to suck the blood if leech is not ready. Don't apply pressure on its mouth because it is having tiny teeth and eyes which may get harm.

Leeches should suck only impure blood. Don't remove leeches by sprinkling powdered Lavana (salt) or turmeric around its mouth. Because they may cause irritation to the leeches.

These mild substances are disliked by leeches, causing them to stop sucking. These substances are slightly irritant to the host and do not stimulate the leeches. If pricking pain and itching at the site of the bite do not occur, then the leeches should be allowed to finish on their own. The maximum amount of blood to be removed from an individual patient depends on the strength of the patient and the nature of the disease.

Avoid removing leeches by any other means^[7]

Leeches have a lot of water in their bodies, and their bodies are covered with skin which is a porous membrane. So when we sow salt on the body of the leech, the salt will dissolve in the mucus that the leech uses to walk. The concentration of salt solution outside the leech body is higher than in it. So there is osmosis that makes leeches lose a lot of water, dehydration, and die. As a result, the fluid in the body of the leech will move out through the skin so that the leech becomes dry, so eventually the leech will die. Secondly these techniques might cause the leech to release its grip and fall off, it won't do so before vomiting back into the wound. This can lead to bad infections, so stick to the healthier practice; leech will drop off on its own.

Maintain the natural habitat of leech

The leech is a segmented worm inhabiting freshwater tanks, ponds and shallow weedy lakes. They grow abundantly in swamps and pools near paddy fields, where they can easily suck blood from the bare-footed farmers as well as from the cattle. The animal is an ectoparasite. So try to maintain their natural habitat and grow them or collect the leeches from such places only.

Apertures of the leech^[8]

The mouth is a triradiate opening situated ventrally in the centre of the cup-shaped anterior sucker. The anus is a small opening situated in the middle line on the dorsal surface of the 26th segment, in front of the posterior sucker. The urinary openings is the seventeen pairs of minute nephridiopores on the ventral surface of the body. A pair of nephridiopores occurs in each segment, beginning from the sixth and extending up to the twenty-second. Leech is hermaphrodite. The reproductive openings or gonopores are situated in the mid-ventral line, and are separated from one another by five rings, The male gonopore lies in the mid-ventral line of the tenth segment and a filamentous penis may occasionally be seen protruding through this opening, The female gonopore is situated in the mid- ventral line of the eleventh segment.

Don't give forceful vomiting to the leeches

Above said delicate apertures are present in the leech, some untrained physicians gives forceful vomiting to the leeches by salt, turmeric and by other means like they catch the leeches tightly and gives gently pressure on its body from backward to forward. So it will get irritated and injured and sometimes it may die.

Consider letting leeches fill up and drop off^[9]

An easy way to get rid of a leech is by letting it drop off on its own. It takes around 20 minutes for a leech to fill up, and when it's done feeding it will fall off from skin. Leeches don't take enough blood for blood loss to be a worry, and since they don't spread disease, there's really no harm in letting them fall off without intervening. If we try to remove them forcefully they will get disturbed.

Preservation of leeches^[10]

After collecting the leeches, they should be kept in a wide and new earthen pot. The pure water of lake or river with lotus should be filled into that pot. Feed it with leaf of lotus plants (Kamala Nala), Saivala, and powder of stem of small plants. The grass and leaves of plants should be kept inside water in the pot as a bed for leech. Water should be changed on every 3rd day and fresh feeding should be dropped inside the pot. After 7 days the pot itself should be changed. Vagbhata mentioned that the pot should be changed every five days. Poisonous leeches should be thrown out by differentiating from others.

DISCUSSION

Medicinal leech therapy should be considered an exciting new tool in the medical toolbox for treating challenging conditions like wound care and reconstructive surgeries. No complications were seen with this therapy. Provided specific recommendations regarding the handling of leeches, monitoring during leeching and patient management after leeching should be followed. The salivary gland secretions are a cocktail of proteolytic enzymes of tremendous medicinal value. These have got wide range of therapeutic actions ranging from anti-inflammatory, anesthetic, to anti-bacterial and fibrolytic and many more.

CONCLUSION

Leech therapy may be applied to various diseases known nowadays, due to its anticoagulant, vasodilator, and thrombolytic, anti-inflammatory and anaesthetizing qualities. But with further studies, the spectrum of effects may widen. The technique is cheap, effective, easy to

apply, and its modes of action have been elucidated for certain diseases. In conclusion, for treatment of some diseases, Leech Therapy is not an alternative, but is a complementary and/or integrative choice. It is a part of multidisciplinary treatments, and secretes various bioactive substances. Compared to other techniques of complementary and natural therapy, Leech therapy can be learned relatively quickly and can reduce the complications arising from the excessive use of synthetic drugs.

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