



Panchakarma with special reference to Raktamokshana using Jaluaka (leeches)

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The term Ayurveda means ‘Science of Life’. According to Ayurveda, the body is governed by Thridosha (three humors); namely *VataDosha*, *Pitta Dosha* and *Kapha Dosha*. Vitiation of these Thridosha leads to occurrence of diseases. Vitiated *Dosha* can be expelled from the body through *Panchakarma Chikithsa* (Five-fold evacuation therapy). So, *Panchakarma* is considered as the best treatment procedure among therapeutic modalities in Ayurveda.

Charaka Samhita describes *Vamana Karma*, *Virechana Karma*, *Nasya Karma*, *NiruhaVasti* and *AnuvasanaVasti* as the five components of *Panchakarma*, whereas Sustruta Samhita describes *Vamana Karma*, *Virechana Karma*, *Nasya Karma*, *Vasti Karma* and *Raktamokshana* as the five components of *Panchakarma*.

Panchakarma Chikithsa is used as a preventive measure as well as atherapeutic measure in various ailments. This method of treatment should be performed on suitable patients only. Administration of *Panchakarma* to unsuitable patients such as very young, very old or weak, will lead to various complications and occurrence of other disorders. Before commencement of *Panchakarma Chikithsa*, the physician should thoroughly examine the patient and properly understand the condition of the ailments he is suffering from.

As per Ayurveda, *Panchakarma Chikithsa* is conducted in three stages. They are *Purva Karma* (preparatory procedure), *Pradhana Karma* (main procedure), and *Pashchat Karma* (post-treatment procedure).

In *Purva Karma* stage, before commencement of *Panchakarma Chikithsa*, patient’s *Agni* (digestive fire) should be in an equilibrium state. If not, then, drugs with *Deepana* and/or *Pachana* properties need to be administered. When *Agni* is in normal state, then *Snehana* (oleation) and *Swedana* (fomentation) should be carried out. *Snehana* (oleation) is administered orally in progressive doses, or, is applied externally. It helps to loosen the vitiated *Dosha* or toxins accumulated in channels. *Swedana* (fomentation) liquefy the vitiated *Dosha* or toxins and makes them to flow towards the *Koshta* (digestive system). When these vitiated *Dosha* reaches the *Koshta*, they are then expelled from *Koshta* by performing *Pradhana Karma*. In *Vamana Karma*, vitiated *Dosha* are expelled through *Urdhawabhaga* (upper tract or mouth), in *Virechana Karma* through *Adhobhaga* (lower tract or anus). In *Vasti Karma* vitiated *Dosha*

accumulated in *Pakwashaya* are expelled through *Gudamarga* (rectum), *Yonimarga* (vagina) or *Mutramarga* (urethra). In *Nasya Karma* vitiated *Dosha* accumulated in *Urdhawabhaga* (area above clavicle) are expelled through nose. In *Raktamokshana* vitiated *Dosha* which are accumulated in entire body are expelled through blood.

Raktamokshana is described in Sustruta Samhita approximately 600 B.C. It helps to eliminate vitiated *Dosha* especially vitiated *Pitta Dosha* from the body. It, bloodletting therapy, is practiced in many continents and numerous countries. *Raktamokshana* is carried out using various techniques such as *Jalaukacharana* (applying leeches), *Shringaavacharana* (bloodletting using a horn), *Alabuavacharana* (bloodletting using a dried bottle gourd), *Prachchana* (bloodletting by making incisions in skin) and *Shiravedana* (venepuncture).

Application of medicinal leeches is as old as the Pyramids. Egyptians used leech therapy over 3,500 years ago. In Greece, bloodletting was a standard practice around the time of Hippocrates (460BC-370BC) and Herophilos (335-280 BC). Romans were the first to use the name 'Hirudo' for leeches. Leeches are also used in plastic surgery to reduce swelling and maintain blood flow in ancient days.

Ayurveda classifies *Jalauka* (leeches) into two categories such as *Nirvisha Jaluka* (nonpoisonous leeches) and *Savisha Jaluka* (poisonous leeches). Nonpoisonous leeches are *Kapila*, *Pingala*, *Shankamukhi*, *Mushika*, *Pundarikamukhi* and *Savarika*. Poisonous leeches are *Krushna*, *Karbura*, *Alagardha*, *Indrayudha*, *Samudrika* and *Gochandana*.

According to modern science, leeches are included under Phylum Annelida and family Hirudinidae. There are over 700 types of leeches. Some of the medicinal leeches are *Hirudomedicinalis*, *Hirudo verbena*, *Hirudo orientalis*, *Hirudo troctina*, *Hirudinaria manillensis*, *Macrobdeella decora*, *Haementaria officionalis*, *Haementeria ghillanii* and *Hirudo birmanika*

Majority of leeches live in freshwater environments. But some species are found in terrestrial and marine environments. Freshwater leeches generally live in reservoirs, still or slowly flowing waters and fast flowing streams. According Sustruta, non-poisonous leeches live in Yavana, Pandya, Sahya and Pautana areas of India. Dermatitis, vitiligo, psoriasis, eye diseases, acne vulgaris are some of the indications of leech therapy. It is contraindicated in pregnancy, anaemia and patients who are emaciated.

Leeches can be collected using a large tin-can containing a bait. Some people stand in leech-infested waters and when leeches hang on to the legs, they come out and remove the leeches for collection by applying betel-lime (chunam) or tobacco juice to the leeches. In Sri Lanka, most of the leeches for therapeutic purposes are collected from running fresh water, especially from small water streams and paddy fields. Nowadays, leeches are usually kept in a clean glass bottle or a jar, containing water and aquatic plants from habitat.

According to Ayurveda and Sri Lankan traditional medicine, no specific preparation of the patients is needed prior to application of leeches. However, some physicians are of the opinion that the patient should first be subjected to *Snehana* (oleation) and *Swedana* (fomentation) as *Raktamokshana* is also a method of *Panchakarma*.

According to Ashtanga Hridaya, leeches should first be purified by keeping them in medicated water, prepared by mixing turmeric powder with water or in buttermilk.

When performing *Raktamokshana* using leeches, first make the patient to sit or lie down comfortably and clean the area with warm water without applying soap or cleansers. Apply the leeches to the appropriate place and cover them with a piece of cotton soaked in cold water when sucking blood. When the leeches have finished sucking blood, they will fall off. Wash the area of leech application with cold water and apply turmeric powder, *Manjistha* (*Glycyrrhiza glabra*) powder, bee's honey or *Sithodaka oil*.

After removing or falling down, make the leech to vomit the sucked blood by applying salt or turmeric powder to its mouth and also squeeze the body in upward direction from tail to mouth. Then leeches should be put into a fresh water container.

During the process of feeding, leeches secrete a complex mixture of different biologically and pharmacologically active substances into the wound. Hirudin, Calin, Destabilase, Hirustasin, Bdelins, Eglins, Acetylcholine and Anesthetics substance are some of chemicals in leech's saliva.

Some physicians practicing Siddha medicine believe that leeches should not be applied on certain parts of the body, on some days of the lunar month. For example, 1st moon day on big toe and full moon day on head.

There are disadvantages in leech therapy. Due to presence of hirudin, bleeding from wound following leech bites may persist from several hours up to three days until action of hirudin is over. Allergy to leech bites, even severe allergic or anaphylactic reactions has been reported. Red blotches or an itchy rash in the body, swelling around the lips or eyes, feeling faint or dizziness and difficulty in breathing are some of the clinical features which may be present in allergies. Sometimes bacteria in gut of leeches may cause the wound to be infected. On forceful withdrawal of leech from the site of leech bite, leeches may vomit and contents in the stomach will come into contact with the wounds and this may infect the wound occurred due to leech bite.

After completion of *Pradhana Karma*, *Pashchat Karma* should be carried out. *Gandusha* (medicated gargling) and *Dhumpana* (medicated smoking) are some of them. In authentic texts, it is advised to strictly follow *Samsarjan Karma* (special diet and regimen) after undergoing *Pradhana Karma*, to regain digestive power and strength.