



Review Article

CONCEPT OF SIRAVEDHA AND ITS CLINICAL APPLICATION IN DIFFERENT SURGICAL DISEASES

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Article info

Article History:

Received: 19-11-2023

Accepted: 15-12-2023

Published: 05-01-2024

KEYWORDS:

Ardhachikitsa, Raktamokshana, Raktadushti, Shodhan, Shaman, Sira, Siravedhan.

ABSTRACT

Two fundamental tenets of Ayurvedic medicine are *Sodhan* and *Saman Chikitsa*. The root (originating factor) of the body is *Rakta* and body is sustained verily by blood and as such it should be protected carefully; in fact blood is life. *Pitta Dosha* and *Rakta Dhatu* have *Ashraya Ashrayi* relation with each other, hence increase and decrease of *Rakta Dhatu* depends on increase and decrease of *Pitta Dosha*. *Rakta Pardoshaj Vikar* is primarily caused by vitiation of *Pitta Dosha*. Among different types of *Shodhan* therapies, *Rakthamokshana* is considered as best for *Pitta* and *Rakta Pradoshaj Vyadhi*. In Ayurveda, *Siravedhana* used in the *Sarvadehika dushthi* of *Dosha* that means vitiation of *Dosha* all over the body. In the *Shalyatantra Siravedhana* has played very important role in the management of various *Shakhagata Roga*. But *Siravedhana* has plays main role in the management of disease caused by vitiation of *Pitta* and *Rakta Dushti Vikara*. Therefore in Ayurveda especially in the *Shalyatantra* called the *Ardhachikitsa*. Since *Acharya Sushruta* provided a thorough explanation of *Pracchan* and *Siravedhan* as well as their significance in *Raktagata Vikar*, all of the requirements for *Siravedhan* as stated by *Acharyas* are included in this topic.

INTRODUCTION

According to Ayurveda seven types of *Dhatus* existed in human body are mentioned, from the *Sara Bhag* of each *Dhatu Updhatu* are formed. Among the all *Dhatu Rakta* is the most important *Dhatu* which plays major role in maintaining the vitality of life. *Apya Rasa* got red colour by the *Tejas* present in the body remaining unvitiated and clear called as *Rakta*. The *Rasa* normally being watery, attains red colour when it enters *Yakrith* and *Pleeha* by the action of *Ranjaka Pitta*^[1]. The root (originating factor) of the body is *Rakta* and body is sustained verily by blood and as such it should be protected carefully; in fact blood is life^[2]. *Shuddha Rakta* is responsible for *Bala* (strength), *Varna* (complexion), *Sukha* (happiness) and *Ayusha* (longevity). It plays a vital role in sustenance of *Prana*^[3]. Ayurvedic therapy is based on two main

tenets; *Sodhan* and *Saman Chikitsa*. The one in which direct elimination of these vitiated or increased *Dosha* is done is known as a *Shodhan Chikitsa* whereas when the increased *Dosha* are not directly eliminated but brought into an equilibrium with the help of various medicines, then it is called as *Shaman Chikitsa*. Among different types of *Shodhan* therapies, *Rakthamokshana* is considered as best for *Pitta* and *Rakta Pradoshaj Vyadhi*. *Acharya Susrutha* and *Acharya Vagbhata* included *Raktamokshan* under *Panchshodhan*. *Raktamokshana*, which means to let out blood, is primarily recommended in certain illnesses, particularly when *Raktadushti* is present. The *Raktaja Vikara* is destroyed by these methods at its foundation. It cleanse the vitiated blood and thus make the person become lusturous, *Indriya* become clear or are able to recognize their objects in a ideal manner, his digestive fire functions well, is enriched with happiness, good nourishment and strength^[4].

Classification of *Raktamokshana*: 1. *Yantra*, 2. *Shastra*, 3. *Anushastra*

1. *Yantra visravana: Alabu, Shringa, Ghati*
2. *Shastra visravana: Pracchana, Siravedhan*

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<https://doi.org/10.47070/ayushdharma.v10i6.1380>

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3. Anushastra: Jalaukavcharan

Concept of Sira: The term *Sira* stands for channels through which substances or physical forces flow. *Siras* carries the *Rakta Dhatu* which helps to nourish the body and maintain healthy state

Their ramifications are like venations of leaf. The *Siras* begins from the umbilicus from which they spread upwards, downward, and obliquely throughout the body^[5].

They are called *Sira* (vessels), according to *Aacharya Charak*, because they transport things, like blood, from one location to another. *Rasa (Rakta)* is dispersed throughout the body by *Hridaya*, and *Sira* then brings it back to the heart. So *Sira* are called "*Hritprabhava*" because they spread throughout the body originating from *Hridaya*^[6].

Siravedhan: *Sira vedha* is one of the initial lines of treatment in the Management of *Shopha*, *Vedana*, *Ruja* etc. In Ayurveda *Siravedhana* used in the *Sarvadehika Dushthi* of *Dosha* that means vitiation of *Dosha* all over the body. In the *Shalyatantra* *Siravedhana* has played very important role in the management of various

Shakhagata Roga. However, *Siravedhana* is primarily responsible for managing diseases brought on by *Pitta* and *Rakta* vitiation (*Dusthi Vikara*). Therefore In Ayurveda especially in the *Shalyatantra* Called the *Ardhachikitsa*^[7].

There are forty *Mula* (root) *Sira*, who are linked to *Hridaya*. From there, they move *Ojas* (the essence of *Dhatu*) in all directions, including upward, downward, and sideways. These *Sira* perform all of the bodily functions (*Kaya*, *Vaka*, and *Manas*).

The human body contains 700 *Sira* in total. The *Sakha* contains 400 veins, the *Koshta* contains 136, and the head and neck region contains 164 veins. Out of these 602 *VedhyaSira*, 98 *AvedhyaSira* are found in the human body, totalling 700^[8].

Those who have swelling all over the body, who are emaciated due to intake of sour food (for a long time), who are suffering from disease such as anaemia, haemorrhoids, abdominal enlargement, tiredness, oedema and pregnant women^[9].

Table 1: Contraindications and Indications Siravedhya

Contraindications for Siravedhya ^[10]	Indications of Siravedhya ^[11]
• <i>Bala</i> (very young) and <i>Sthavira</i> (very old)	• <i>Visarpa</i>
• <i>Ruksha</i> , <i>Kshatkshina</i> (wounded and debilitated)	• <i>Vidradhi</i>
• <i>Bhiru</i> (timid)	• <i>Pliha roga</i>
• <i>Parishranta</i> (tired person)	• <i>Agnisada</i> (dyspepsia)
• <i>Madyapa</i> (alcoholic)	• <i>Jwar</i>
• <i>Vamita</i> and <i>Virikta</i> (who has undergone <i>Vaman</i> and <i>Virechana</i>)	• <i>Mukhroga</i>
• <i>Asthapita</i> and <i>Jagrita</i> (those who have undergone <i>Asthapan Basti</i> and who have not slept at night)	• <i>Netra roga</i>
• <i>Kliba</i> (impotent)	• <i>Siro roga</i>
• <i>Krishna</i> (emaciated)	• <i>Trishna</i>
• <i>Garbhini</i>	• <i>Lavanasyata</i> (salty taste in mouth)
• <i>Kasa</i> and <i>Shwasa</i>	• <i>Kushtha</i>
• <i>Vridhdha Jwara</i> (chronic fever)	• <i>Vatarakta</i> • <i>Raktapitta</i>

Perfect *Kala* for *Siravedhan*: Generally the *Pitta Dosha* vitiated in the *Sharad* (autumn) *Ritu*. *Rakta* vitiation is induced by *Pitta* provocation, so that in the *Sharad Raktamokshana* should be carried out. The *Sira Vedhan* should not be performed on too cold, too hot wind or cloudy day, it should also forbidden on any healthy person^[12].

During *Varsha Ritu* puncturing should be done on days which are not cloudy, during *Grishma* at time which is cool, during *Hemantha* at midday^[13].

Siravedhan Vidhi (Method of Vene Puncture)

1. *Poorvakarma*
2. *Pradhankarma*
3. *Paschatkarma*

Poorvakarma: *Siravyadha* is one of the *Shastra Karma* out of eight and same as one of the *Upakrama* out of *Shashti Upakrama* described in *Vrana Chikitsa* in *Sushruta Samhita*. So for the better performance of *Siravyadha* and for the management of the complications, the following material should be arranged prior to the procedure.

Proper place (pleasant atmosphere), *Kutharika Shastra*, *Vrihimukha Shastra*, oil (for *Snehana*), *Swedana Yantra Bandhana* materials (tourniquet etc.), bandages, swab, sphygmomanometer, gauze piece kidney trays, *Kashaya* for wound washing, water container, hot and cold water, *Raktaskandana Upakarana* etc.

Pradhan karma: A patient who has undergone the process of *Snehan* (oleation) and *Swedan* (fomentation), who has taken a liquid diet and *Yavagu*, should be brought to the surgeon at the appropriate time of year (not during the wet or winter months) and designed to sit or lie down in a way that doesn't impede essential bodily functions. The part chosen for the venue puncture should not be tied too hard nor too loose, then the *Sira* should be punctured with proper instruments.

Paschatkarma: Proper Dressing- After completion of procedure whenever blood flow stops automatically, *Yantrana* should be removed and instrument should be withdraw. Tight dressing should be applied on the wound.

Pathya - Apathya: The patient should be treated with food which are not very cold, which are light (easily digestible), unctuous, which promote blood formation and either slightly sour or devoid of sour. When recovering from bloodletting, the patient should refrain from physical activity, sexual contact, cold weather, eating only one meal a day, sleeping all day, using alkalis, eating spicy foods, being upset, talking a lot, and experiencing dyspepsia until he is well^[14].

Table 2:

<i>Samyak Rakta Visravana Lakshna</i> ^[15]	Inadequate drainage of blood ^[16]	<i>Samyak Viddha Laksana</i> ^[17]
<ul style="list-style-type: none"> • Lightness in the body • Reduction in the diseases frequency • Pain reduced • Sensual pleasure 	<ul style="list-style-type: none"> • Itching • Oedema • Burning sensation • Redness • Inflammation • Pain 	<ul style="list-style-type: none"> • When proper puncturing has been done, blood flows out in a stream, for a period of 1 <i>Muhurta</i> (48 min) and then stops on its own accord, this should be understood as proper puncturing • Just as yellow liquid flows out first from flowers of <i>Kusumbha</i> (when crushed) similarly vitiated blood flows out first when veins are punctured. When the blood stop by itself after adequate flow, then it should be considered as pure (unvitiated and as properly drained)

Complications of excessive *Rakta Visravana*: Headache, blindness, *Adhimantha*, *Timira*, *Dhatukshaya*, convulsions, burning sensation, hemiplegia, monoplegia, cough, anaemia and death^[18].

Srava Pramana: In person who are healthy, who has predominant *Doshas* and who are of suitable age (adult age), one *Prastha* of blood be allowed to flow out after venous puncture^[19].

Management of *Atisrava*: *Skandan* by *Shitopchar*, *Sandhan* by *Kashaya Rasa Pradhan Dravya*, *Pachan* by *Bhasma, Dahan*^[20].

Table 3: *Siravedhan* in Different Diseases

Diseases	<i>Siravedhan</i>
<ul style="list-style-type: none"> • <i>Pada daha, Padharsha, Chippa, Visarpa, Vatasonita, Vatakantak, Vicarcika, Padadari</i> 	<ul style="list-style-type: none"> • Vein situated two <i>Angula</i> above the <i>Ksipramarma</i> should be punctured
<ul style="list-style-type: none"> • <i>Vataja Shlipad</i> 	<ul style="list-style-type: none"> • 4 <i>Angula</i> above the <i>Gulfa sandhi</i>
<ul style="list-style-type: none"> • <i>Pittaja shlipad</i> 	<ul style="list-style-type: none"> • 4 <i>Angula</i> below the <i>Gulfa sandhi</i>
<ul style="list-style-type: none"> • <i>Kaphaja shlipad</i> 	<ul style="list-style-type: none"> • 4 <i>Angula</i> above the <i>Ksipramarma</i>
<ul style="list-style-type: none"> • <i>Apachi</i> 	<ul style="list-style-type: none"> • Two <i>Angula</i> below the <i>Indrabasti Marma</i>
<ul style="list-style-type: none"> • <i>Gridhrasi</i> 	<ul style="list-style-type: none"> • 4 <i>Angula</i> either above or below the knee joint
<ul style="list-style-type: none"> • <i>Galganda</i> 	<ul style="list-style-type: none"> • Vein present at <i>Uroomula</i> (base of the thigh) should be punctured.
<ul style="list-style-type: none"> • <i>Pliha</i> diseases 	<ul style="list-style-type: none"> • Puncturing should be done specially in left arm.
<ul style="list-style-type: none"> • <i>Yakrittodar, kaphodar</i> 	<ul style="list-style-type: none"> • Puncturing should be done in right arm

<ul style="list-style-type: none"> • <i>Parivartika</i>(phimosis),<i>Updansh</i>(chancer), <i>Shook Dosh</i>,<i>evam Shukra dosha</i>(seminal disorders) 	<ul style="list-style-type: none"> • <i>Sira Vedan</i> should be performed <i>Medhra Madhye</i> (in middle of the penis)
<ul style="list-style-type: none"> • <i>Mutravridhi</i> 	<ul style="list-style-type: none"> • It should be done on the right side of scrotum
<ul style="list-style-type: none"> • <i>Dakodara</i> (ascites) 	<ul style="list-style-type: none"> • It should be done below the umbilicus, four <i>Angula</i> at the left side of abdomen
<ul style="list-style-type: none"> • <i>Bahusosa</i> (wasting of the arms), <i>Apabahuka</i> (loss of movement of the arms) 	<ul style="list-style-type: none"> • done between two shoulders

Siravedhan in Modern Aspect (Phlebotomy)

Phlebotomy, sometimes referred to as venesection or bloodletting, is a significant medical procedure that has been utilised by many cultures from antiquity to the present. In the past, phlebotomy was done with leeches, acupuncture, or cupping. When treating blood disorders, therapeutic phlebotomy is the best option because it effectively manages symptoms and complications by removing serum iron or red blood cells [21].

A number of physiological mechanisms underlie therapeutic phlebotomy. For instance, bloodletting stimulates bone marrow stem cells to produce new red blood cells (RBCs), which in turn need the movement of iron from the body's reserves in the ferritin form to produce haemoglobin (Hb). Because of this decrease in the patient's total iron levels, therapeutic phlebotomy is the recommended course of treatment for blood disorders where removing serum iron or RBCs is the most effective way to manage the symptoms and complications [22].

Indications for therapeutic Phlebotomy

- **Varicose vein (*Sirajgranthi*):** A vein is called varicose when it is dilated and tortuous. More common in lower limb due to erect posture. In the disease *Sirajgranthi* the main vitiated factors are *Vata* and *Rakta* by doing *Siravyadhna* the stagnant vitiated *Rakta* gets drained out which will help to retain the *Chala Guna* of *Vata*.

By removing the stagnant vitiated blood that caused *Sanga*, *Siravyadha* reduces intravascular pressure and volume, hence reduce *Shoola* and *Shotha*.

Since the stagnant blood is drained out, the breakage of RBCs get reduced which in return reduce the pigmentation and itching over the part.

- **Polycythemia vera:** The hallmark of polycythemia vera, a clonal progressive myeloproliferative illness linked to severe erythrocytosis, is elevated erythrocyte production in the bone marrow, which raises blood viscosity and erythrocyte counts. It is also possible to enhance the production of platelets and white blood cells. Reducing the risk of these thrombotic events is one of the main goals of therapeutic phlebotomy, which is the best option for initial therapy. This is due to the fact that

individuals with polycythemia vera are more susceptible to thrombotic events, which include arterial or venous thromboembolism, cardiovascular disease, and cerebrovascular disease. According to earlier research on polycythemia vera, patients who underwent phlebotomy had a decreased risk of hematomas and solid tumours. Additionally, studies have shown that maintaining target hematocrit levels (<45%) through phlebotomy was linked to a significant reduction in cardiovascular morbidity and a decreased risk of major thrombotic diseases [23].

- **Hemochromatosis:** The 2011 practice guidelines for hemochromatosis treatment from the American Association for the Study of Liver Diseases indicate that phlebotomy induces various therapeutic responses in hemochromatosis, which include the normalization of tissue iron levels, improved patient survival and cardiac function, and reduced abdominal pain and pigmentation [24].

- **Porphyria cutanea tarda:** Porphyria cutanea tarda is a disease that is characterized by uroporphyrinogen accumulation, which is related to low levels of uroporphyrinogen decarboxylase. Therapeutic phlebotomy is the optimal treatment for this disease. In these cases, phlebotomy should be repeated every 2 weeks until the Hb levels are <20 ng/mL [25].

- **Non-alcoholic fatty liver disease (NAFLD) with hyperferritinemia:** NAFLD is the most common cause of chronic liver disease and is anticipated to become the most frequent indication for liver transplantation by 2030. NAFLD is defined as lipid-deposit accumulation in hepatocytes, which is not related to excessive alcohol consumption and is instead related to type 2 diabetes mellitus, insulin resistance (IR), central obesity, hyperlipidemia, and hypertension. NAFLD also encompasses nonalcoholic steatohepatitis, which can lead to liver fibrosis, cirrhosis, and hepatocellular carcinoma [26]. The effects of phlebotomy in 38 patients with NAFLD who were randomized to undergo phlebotomy (n=21) or lifestyle changes alone (n=17). Phlebotomy was performed by removing 350 ml of blood every 10–15 days, and this

procedure led to no adverse events. The main study outcome was improvement in liver damage after 2 years, according to the NAFLD activity scores. Improvements in the amounts of liver enzymes, such as gamma glutamyltransferase, alanine transaminase, and aspartate transaminase, were the secondary result. Liver enzyme levels improved and iron values returned to normal following phlebotomy. Patients with NAFLD and hyperferritinemia showed a greater incidence of improvement in histological liver damage when iron depletion via phlebotomy was used, as opposed to lifestyle modifications alone [27].

CONCLUSION

Siravedhan is simple cost effective OPD procedure which has miraculous effect. It is recommended for both prophylactic and therapeutic. It is capable of providing relief in many health problems and hence should be practice on more and more number of patients with the aim of standardizing and promoting it as one of the better treatment modality. Practice of *Siravyadha* requires a good degree of anatomical knowledge regarding *Vedhya-Avedhya Siras*, exact site of *Avedhya sira* to avoid injury to vital structures and to ease the procedure. But the doctor should be experienced.

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Cite this article as:

Rubi Rani, Rahul Sherkhane. Concept of Siravedha and its Clinical Application in Different Surgical Diseases. AYUSHDHARA, 2023;10(6):91-96.

<https://doi.org/10.47070/ayushdhara.v10i6.1380>

Source of support: Nil, Conflict of interest: None Declared

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