

ANATOMICAL EXPLORATION OF SUSHRUTOKTA SITES OF SIRAVEDHA IN
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ABSTRACT

Among different types of *Sodhan* therapies, *Raktamokshana* is considered as best for *Pitta* and *Rakta Pradoshaj vyadhis*. *Siravedha* is one of the type of *Raktamokshana* by *Shastravacharana* especially used for *Sarvangagata Rakta Dushti Janya Vikara*. (So as to explain its significance a stanza *Su. Sha. 8/23* is sufficient).^[1] The practice of *siravedha* requires a good degree of anatomical knowledge regarding *vedhya-avedhya sira*s, the exact sites where *shastra patana* could be done and also the other vital structures to be avoid from injury. *Siravedha* at a particular locations for a particular disease is an essential part of this therapy. As *Aacharya Sushruta* has described specific sites of *Siravedha* for various diseases in *Sharira- sthana*. (*Su.Sha.8/17*), it appears surprising and vague, why *Sushruta* has mentioned particular site for *Siravedha* in different diseases. Why can't common site is selected in all diseases? As *Sushruta* is giving particular anatomical sites in individual diseases, there must be a relation between disease condition and *Siravedha* at that particular site. Here it is necessary to take-up such study where in we can define the exact sites or location for *Siravedha*. So a comprehensive study is done to locate and confirm the particular *Sira* of *Vyadhana Sthana* on the basis of available literature. The study is limited to lower extremity.

KEYWORDS: *Siravedha*, *Sira*, *vyadhana sthana*.

❖ INTRODUCTION

In ayurveda *Siravedha* is a type of surgical procedure of puncturing the vein for therapeutic purpose and thereby accomplishing the *Raktamokshana* (Blood letting). It is one of the important type of *raktamokshana* therapy to remove the vitiated blood with the help of sharp instruments and specially used to treat *sarvangagata rakta dushti janya* diseases and also advised for "*sadhya raga ruja shamana* (it relives pain and redness immediately). *Acharya Sushruta* has considered *Siravedha* as a *ardha chikitsa* in all therapeutic procedures mentioned in *shalya tantra* (surgery).^[1]

However nowadays *Siravedha* is found very rarely used in ayurvedic practice, may be because of lack of experience about the basic concepts of *shaarira* like *vedhya-avedhya sira*, particular sites of *siravedha* according to different conditions etc. The practice of *Siravedha* requires sound anatomical knowledge of *sira sharir*, the exact sites where *shastra patana* could be done and also the other vital structures to be avoid from injury during the procedure.

Siravedha at a specific sites according to different diseases is important part of this therapy. As *Acharya Sushruta* has mentioned specific sites of *siravedha* for

various diseases in *sharir sthana* (*Su.Sha.8/17*) it appears surprising and vague, why *Sushruta* has mentioned particular site for *siravedha* in different diseases. Why can't common site is selected in all diseases? There must be some relation between sites and diseases. So considering its importance a comprehensive study is done to identify and locate the exact *sira* of *vyadhana sthana* on the basis of available literature of *dosha* concepts, anatomical and pathological perspective. The study is limited to lower extremity.

❖ AIMS AND OBJECTIVES

1. To compare various sites of *Siravedha* mentioned in *Sushrut samhita* to the superficial venous pattern to determine the exact superficial vein on which *Siravedha* is to be done in various diseases.
2. To correlate lower limb's *vedhya sira* with underlying structures according to modern anatomy.

❖ MATERIAL AND METHODS

- i. Review of ayurvedic literature regarding sites of *siravedha* in lower limb in various diseases.
- ii. Review of ayurvedic and modern literature regarding *sira sharira* and superficial venous pattern.

❖ **METHODOLOGY****Literature study**

- A. Correlation between the different types of Sira mentioned in Sushrut samhita with anatomical structure.
- B. Determination of exact location of siravedha in lower limb according to different diseases and their interpretation with underlying structure.

➤ **Correlation between the different types of Sira mentioned in Sushrut samhita with anatomical structure.**^[2]

According to Sushruta *Vatavaha Siras* are *Aruna* in colour; *Pittavaha Siras* are warm and blue in colour; *Kaphavaha Siras* are cold, white and stable; *Raktavaha Siras* are *Rohini* in colour and neither very hot nor very cold.

Dalhana also favoured *Sushruta* and said that *Vatavaha Siras* are reddish in colour, *Pittavaha* are blue, *Raktavaha* are red and *Kaphavaha* are white in colour.

Ghanekar compared these *Siras* with modern science as-

- *Aruna* and *Rohini Sira* with Artery
- *Pittavaha Neela Sira* with Vein
- *Kaphavaha Sira* with Lymphatics.

Hence, we can correlate the Sira with the blood vessels and Lymphatics as follows-

- a. *Aruna sira* and *Rohini sira* can be correlated with capillaries and arteries.
- b. *Neela sira* can be correlated with veins.
- c. *Gauri sira* can be correlated with lymphatics.

➤ **Determination of exact location of siravedha in lower limb according to different diseases and their interpretation with underlying structure.**^[3]

The sites or location of siravedha is explained based on following points- i) Location with justification ii) Anatomical Structures at considered site.

1. ***Padadaha, Padaharsa, Visarpa, Chippa, Vatarakta, Vatakantaka, Vicharchika, Padadari etc***- In these diseases the superficial vein situated two angul above the *kshipra marma* should be considered for *siravedhana*. Site of *kshipra marma* is in between great toe and first little toe. Two *angula* above *kshipra marma* is a space between 1st and 2nd metatarsal bone.^{[4],[4]}
 - **Structure** – When we observe at this site the tributaries of dorsal venous arch are present. So its first tributary or branch, i.e. medial metatarsal vein (a branch of dorsal venous arch). should be considered for *siravedhan*.^[5]
2. ***Vataja Shleepada*** – In *Vataj shleepad* the superficial vein situated ‘four *Angula* above the *Gupha Sandhi*’ is advised by *Sushruta*.^[4]
 - **Structure** - Here we have to consider four *angul* above *gulpha sanidhi* (ankle joint) on its lateral

aspect. As on medial side there is a great saphenous vein, which is *avedhya siira* according to *Aacharya Ghanekar*, so we have to consider lateral aspect of *gulpha sandhi*. So short saphenous vein four finger above the *gulpha siandhi* should be considered for *siravedhan*.

3. ***Pittaja Shleepada*** – In *pittaja shleepad* four *Angula* below the *Gulpha Sandhi*’ (ankle joint) is the site mentioned for *siravedhan* by *sushruta*.^[4]
 - **Structure** – If we see four finger below the ankle joint there are tributaries of dorsal venous arch. So branch of dorsal venous arch should be considered for *siravedhan* in *pittaja shleepad*.^[6]
4. ***Kaphaja Shleepada*** – In *kaphaja shleepad* four *Angula* above the ‘*Kshipra Marma*’ is the site advised by *sushruta*. As discussed earlier *kshipra marma* is located between 1st and 2nd metatarsal bone.^[4,5]
 - **Structure** – as we know that four finger above the *kshipra mairma* there are many tributaries of dorsal venous arch. So exactly four finger above the *kshipra marma* a medial branch of dorsal venous arch should be considered for *siravedhna* in *kaphaja shleepad*.^[6]
5. ***Koshtuka Shirsha, Khanja and Pangu*** – In *Koshtuka Shirsha, Khanja* and *Pangu*, it is told to consider the vein which is located four finger above the *gulpha sandhi* (Ankle joint).^[5]
 - **Structure** - Here we should consider lateral spect of ankle joint. So short saphenous vein, four finger above the ankle joint should be considered for *siravedhan* in these *vyadhi*.
6. ***Apachi*** – In *Apachi* two *Angula* below from *Indrabasti Marma* is the site advised for *siravedhan*. The site of *Indrabasti marma* is, ‘*parshni prati jangha madhye*’ means it is located on mid calf region in leg. So two finger below the midpoint of the calf region is the site of *siravedhan* in *Apachi*.^[5]
 - **Structure**- Here the small saphenous vein and its tributaries are present on calf region, 2 *angula* below the *Indrabasti Marma*. So, tributaries of short saphenous vein on back of leg 2 *angula* below *Indrabasti* should be considered for *Siravedha*.
7. ***Gridhrasi*** – In *Gridhrasi* four *Angula* above or below from *Janu Sandhi* is the site mentioned for *siravedha*. Here medial aspect of knee joint is considered, as on this side there is one prominent vein is present where *siravedhan* can be done easily.^[5]
 - **Structure** – In this region great saphenous vein and its tributaries are present. So if pain is radiating upto thigh region only then *siravedhan* should be done four *angul* above the knee joint on its medial aspect in great saphenous vein. Whereas if pain is radiating in lower part of leg or foot then *siravedhan* should

be done four *angul* below the knee joint on its medial aspect in the same vein.^[6]

8. **Galaganda** – In *Galaganda vyadhi* the site mentioned by *Sushruta* is *Urumula* (root of thigh) *Sthita Sira*. Groin region is considered as the root of lower limb as it is the junction of lower extremity and trunk.
- **Structure** – In groin region at the area of femoral triangle many superficial veins like superficial epigastric veins, superficial circumflex iliac veins,

anterior femoral cutaneous veins are converged and drains into femoral vein or great saphenous vein. So any one tributary of femoral vein can be punctured at this region.^[7]

❖ OBSERVATIONS

The site of *Siravedha* can be interpreted with the modern anatomical structures listed in tables. Here, we have considered superficial veins at that particular site as *Vedhya Sira*.

Sr. No.	Diseases	Sushrutokta sites of siravedha	Superficial vein according to modern anatomy
1	<i>Padadaha, Padaharsa, Visarpa, Chippra, Vatarakta, Vatakantaka, Vicharchika, Padadari</i>	two angul above kshipra marma	Medial metatarsal vein (a branch of dorsal venous arch)
2	<i>Vataja Shleepada</i>	four <i>angula</i> above the <i>Gupha Sandhi</i>	Short saphenous vein
3	<i>Pittaj Shleepada</i>	four <i>angula</i> below the <i>Gupha Sandhi</i>	Branch of dorsal venous arch
4	<i>Kaphaja Shleepada</i>	four <i>angula</i> above the ' <i>Kshipra Marma</i>	Branch of dorsal venous arch
5	<i>Kroshtuka Shirsha, Khanja and Pangu</i>	four <i>angula</i> above the <i>Gulpha Sandhi</i>	Short saphenous vein
6	<i>Apachi</i>	two <i>Angula</i> below the <i>Indrabasti Marma</i>	Tributaries of short saphenous vein
7	<i>Gridhrasi</i>	four <i>Angula</i> above or below from <i>Janu Sandhi</i>	Great saphenous vein
8	<i>Galagand</i>	<i>Urumula Sthita Sira</i>	Tributaries of Femoral vein

❖ DISCUSSION

In this conceptual study, discussion regarding general interpretation of *Vedhya Sira* is essential to further know the underlying structure for *Adho Shakhagat Vedhya Sira*. Interpretation of *Vedhya Sira*: In *Sushruta Samhita*, exact numbers of *Avedhya Sira* are given with their name and site but, while explaining *Siravedha*, specific name and number of *Vedhya Sira* is not mentioned. However, only sites of *Siravedha* are stated. Though the sites of *Siravedha* are mentioned in *Samhita*, the interpretation about underlying structure of these sites is not available in any texts and literary research related to *Vedhya Sira*. So we tried to interpret underlying structure for *Vedhya Sira* through this study for clarity of the concept.

The probable confirmation of anatomical structure for *Adho Shakhagat Vedhya sira* has been discussed on the basis of interpretation of observations drawn from Conceptual study. The correlation of *Adho Shakhagat Vedhya Sira* with underlying anatomical structure is carried out with the textual references available regarding *Siravedha* sites in *Adho Shakha* mentioned in various diseases by *Sushruta*.

On the basis of this general information, the dictum of *Sushruta* is found to be suitable. So that according to *Roga Adhithana*, different sites of *Siravyadha* are selected in different diseases, such as in –

- 1) *Padadaha, Padaharsa, Visarpa, Chippra, Vatarakta, Vatakantaka, Vicharchika, Padadari* – 'Two *Angula* above from *Kshipra Marma*' - medial metatarsal vein (a branch of dorsal venous arch).
- 2) In *Vataja Shleepada* – 'four *Angula* above the *Gupha Sandhi*' - short saphenous vein.
- 3) In *Pittaja Shleepada* – 'four *Angula* below the *Gulpha Sandhi*' – branch of dorsal venous arch.
- 4) In *Kaphaja Shleepada* – 'four *Angula* above the '*Kshipra Marma*' – branch of dorsal venous arch.
- 5) In *Kroshtuka Shirsha, Khanja and Pangu* – 'four *Angula* above from *Gulpha Sandhi*' - short saphenous vein.
- 6) In *Apachi* – 'two *Angula* below from *Indrabasti Marma*' – tributaries of short saphenous vein.
- 7) In *Gridhrasi* – 'four *Angula* above or below from *Janu Sandhi*' – great saphenous vein.
- 8) In *Galaganda* – '*Urumula Sthita Sira*' – tributaries of femoral vein.

❖ CONCLUSION

The present conceptual study confirms that, the sites of *siravedha* in lower limb mentioned by *Aacharya Sushruta* are the superficial veins of that particular locations as:

1. Medial metatarsal vein (a branch of dorsal venous arch) has been considered for *Siravedhan* in *Padadaha, Padharsha, Chippra, Visarpa, Vatkantak, Vicharchika, and Padadari* etc.,

2. Short saphenous vein 4 *angula* above the *Gulpha sandhi* and branch of dorsal venous arch 4 *angula* below *Gulpha sandhi* have been considered for *Siravedhan* in *Vataj* and *Pittaj Shleepad* respectively.
3. Branch of dorsal venous arch, four *Angula* above the '*Kshipra Marma*' has been considered for *siravedhan* in *kaphaj shleepad*.
4. Short saphenous vein, four *Angula* above from *Gulpha Sandhi*'- has been considered for *Siravedhan* in *Krostukashirsha*, *Khanja*, *Pangu*, and *Vatavedana*.
5. Tributaries of short saphenous vein, two *Angula* below from *Indrabasti Marma*' has been considered for *Siravedha* in *Apachi Vyadhi*.
6. Great saphenous vein, four *Angula* above or below from *Janu Sandhi*' has been considered for *Siravedha* in *Grudhrasi Vyadhi*.
7. Femoral vein, *Urumula Sthita Sira*' have been considered for *Siravedha* in *Galaganda Vyadhi*.

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