

Study of *Rachana Sharir* of *Vedhya Sira* in *Vatakantaka* as per *Sushruta Samhita* with Special Reference to *Calcaneal Spur*

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Abstract

Ayurveda is one of the ancient science of life. In *ayurvedic* text there are brief description of body its anatomical structure. According *Acharya* has described the *sira* in ancient era. In that order to *Acharya Sushruta* has described the *sira* in *sharir sthana* chapter-7. *Sushruta* has classified the details such as difference among *sira*, *dhamni* & *srotas*. *Sushruta* has mentioned 4 types of *sira*- *Aruna*, *Neela*, *Lohita*, *Sweta*. These are relevant respectively with the *dosha*-*vata*, *Pitta*, *kapha*, *Rakta*. We can regard these *sira* is the vein, which carry deoxygenated blood from all over the body towards the heart. The blood from these *sira* by flow velocity is called *saran kriya*. A total 700 *sira* are present in our body. These *sira* are basically of two types *Vedhya* and *Avedhya*. *Vedhya sira* are the *sira* which can be punctured for curing the disease and these are 602 in no. *Avedhya sira* are strictly prohibited for puncturing and these are 98 in no. out of total 700 *sira* there are 40 *moola sira*, which are further classified to

four regions. These are *vataavaha*, *pittavaha*, *kaphavaha*, *raktavaha* are 10,10,10,10 respectively. *Vatakantaka* is highly prevalent musculoskeletal disorder characterized by *Ruja* (pain) in the *khudaka* (heel), which causes local accumulation of vitiated *vata dosha*. In modern medicine, its clinical presentation aligns directly with *Calcaneal Spur*. *Calcaneal spur* is a calcified bony osteophyte causing chronic *plantar fascial* inflammation. While *Sushruta* has strongly advocates *siravedh* (therapeutic venesection) as emergency parasurgical intervention for immediate relief from pain (*ruja*), the exact anatomical location and structural identity of the unnamed *vedhya sira* (puncturable vein) situated “two *angulas* above *Kshipra marma*” has remained geographically ambiguous.

Keywords: *Sira*, *Vedhya sira*, *Avedhya sira*, *Vatakantaka*, *Ruja*, *Siravedh*, *Kshipra marma*

Introduction

The aim of medical science is to provide better health to every human being so as to have a nice tomorrow, different medical sciences with various principles and fundamentals, are trying their best for one common goal i.e. health for all. *Ayurveda* is simple practical science of life. It is the preventive and curative science of medicine, its principles are universally applicable to each individual for daily existence. *Ayurveda* speaks of every elements and fact of human life offering guidance that have been tested and refined over many centuries to all those who speak harmony, peace and longevity.

Each & every human being desires to live happy & comfortable life, but in reality these guidelines are not followed by people due to changing life style, environmental factors etc. If we follow this way probable we will remain away from the disease forever. Changing of life style of modern human being has created several disharmonies in this biological system as the advancement of busy professional & social life, unhealthy improper diet, use of chemical products & polluted environment all these factors causes changes in skin diseases are now becoming a significant threat to the working population.

In *ayurvedic* texts *vata* has the ample of significance in *tridoshas* due to its six fold distinguishing features like spreading, autonomy, vigor, capability to vitiate other *doshas*, quick action & the power to create the maximum number of diseases ⁽¹⁾. In *ayurvedic* text five types of *vata* are mentioned as *prana*, *vyana*, *saman*, *udan*, *apan* *vayu* & its particular location also in *ayurvedic* text. As per the *Sushruta*

Samhita, *vatakantaka* is one of the common clinical condition which is considered as a *vata* *vyadhi* & in *Bhavaprakasha Samhita* it included in *nanatmaja vyadhi* which caused mainly due to walking on uneven/irregular ground frequently, placing the feet improperly while walking, running etc. Due to this when vitiated *vata* is situated in *khudaka* produces pain in *pada* (feet). In all *Ayurveda samhita* references regarding *vatakantaka* are present & it included in *vata* *vyadhi* except *Charak Samhita* & *Bhel Samhita*. ⁽²⁾.

Continuous strain on feet muscle & ligament, stretching of *plantar fascia* & repeated tearing of membrane covers the heel bone, these are major causes for *calcaneal* spur formation. On the basis of symptoms of *vatakantaka* can be equated with the disease *calcaneal* spur in modern parlance, which occurs because of deposition of calcium under site of heel bone and characterized by its distinct nature of pain at *calcaneal* bone. The disease *vatakantaka* ⁽³⁾. (*calcaneal* spur) is commonly seen in society as a prominent problem in this condition patient become incapable to do this daily work because of pain during walking.

In reference to *calcaneal* spur treatment, there is no need to state that in other medicinal sciences only symptomatic management & also few surgical procedures with interest of adverse reaction are available for the patient. All these are having their own complication & side effects. On the other hand, surgical management are not affordable for the poor, particularly in developing countries.

In *ayurvedic* texts, there are various methods used as a line of treatment, some

of which are effective, simple, safe and cheap for the patients like:

- *Siravedh*
- *Agnikarma*
- *Snehana*
- *Lepadi*
- Oral medication

Acharya Sushruta mentioned disease; those are not relieved so quickly by *snehana* & *lepadi* measure in this situation *siravedh* is an emergency management to achieve the better result. *Siravedh* is also accepted as half of the therapeutic measure in *shalyantantra* like *basti* in *kayachikitsa*. *Acharya Sushruta* has mentioned that this technique can be used therapeutically as well as prophylactically. Therapeutic measures for some disease and preventive measure for healthy individuals to prevent skin diseases, cysts, inflammatory swellings and blood disorders⁽⁴⁾.

The cardinal symptoms of *vatakantaka* like pain are spontaneously relieved by *siravedh* procedure. During the explanation of *siravedh*, *acharya Sushruta* has explained the *vedhya sira* according to disease.⁽⁵⁾

तत्रपाददाह-पादहर्ष-अवबाहुक-चिप्प-विसर्प-वातकंटक-
शोणित-विचर्चिका-पाददारी-प्रभृतिषुक्षिप्रमर्मण

उपरिष्ठाद् द्वय अङ्गुलेत्रिहीमुखेनसिराविधेयात् ॥ (सु.शा
८/१७)

Siravedh has been done at the site of two *angula* above *kshipra marma* as per reference quoted in *Sushruta Samhita Sharir Sthana*, but there are many structure like *dhamani*, *sira*, *srotas*, *snayu* in this region. Also it is not clear that which aspect, *dorsal* or *sole (plantar)* region of foot

should be considered for *siravedh*. The *sharir sthanas* of *Sushruta*, *Charak*, *Vagbhata* includes basic knowledge of structure & its application in body. *Sushruta* has explained 700 *siras* in body in which 100 *siras* present in each *shakha* out of which 4 are *avedhya siras*, but *Sushruta* has not explained the exact location of each *vedhya sira* & has not given name to them. Also he has not explained which *vedhya sira* is to be punctured.⁽⁶⁾

Nowadays, *ayurvedic* parasurgical procedures like *siravedh*, *agnikarma*, *ksharakarma* and *jalaaukavacharana* are gaining popularity in the society, because of many research work has been carried out regarding its efficacy & well known fruitful data available. *Acharya Sushruta* has described that, treatment without proper knowledge of *sharir* & its body parts is un-useful & dangerous. Keeping all above points in mind & as a scholar of *sharir rachana*, I was planned to work on *vedhya sira* & its application in *vatakantaka* by *siravedh* procedure.⁽⁷⁾

Aim and Objectives

AIM: To study the *vedhya sira* and to locate its exact position for its use in *vatakantaka*.

Objectives:

- 1) To locate the exact site for *Siravedh* in *Vatakantaka*.
- 2) To study the effect of *Siravedh* in *Vatakantaka*.
- 3) To find *vedhya sira* in *vatakantaka*.

Materials and Methods

The present study is carried out in two stages: 1) Structural study, 2) Clinical study.

1) Structural Study

Material for dissection:

- a) Well preserved human *cadaver*
- b) Plain forceps
- c) Tooth forceps
- d) Scalpel handle
- e) Scalpel blade
- f) Scissors

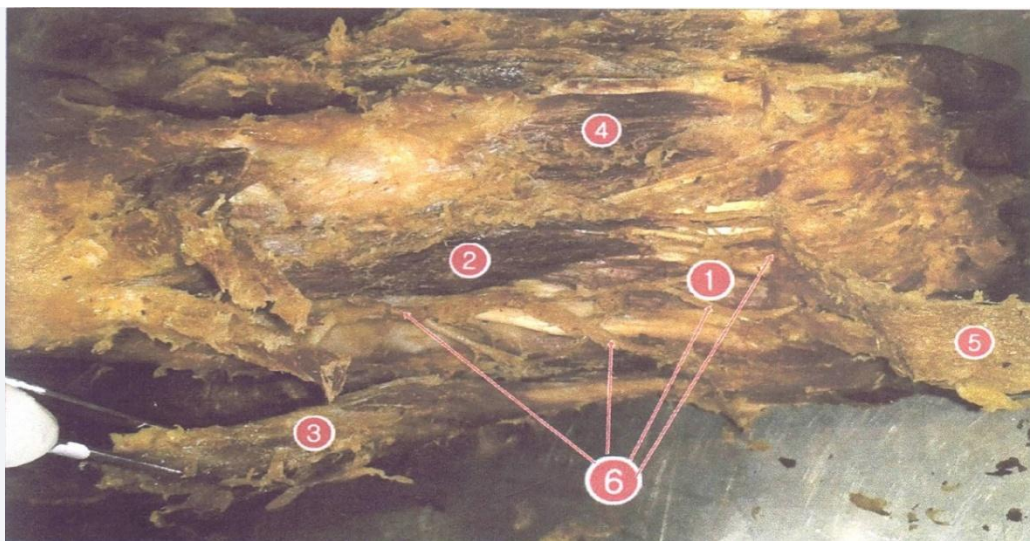
Method of Dissection:

To highlight the proper site of *siravedh* it is essential to know complete anatomy of that particular region and structures related to it. So that here dissection is carried out to locate the *sira* in mentioned site (above the *kshipra marma*). For the structural study the *cadaver* of adult having all the

proportionate body part was selected and dissection was carried out on lower limb of both sides by using modern textbooks of anatomy.

1) Dissection of Plantar/Palmar Aspect of Foot:

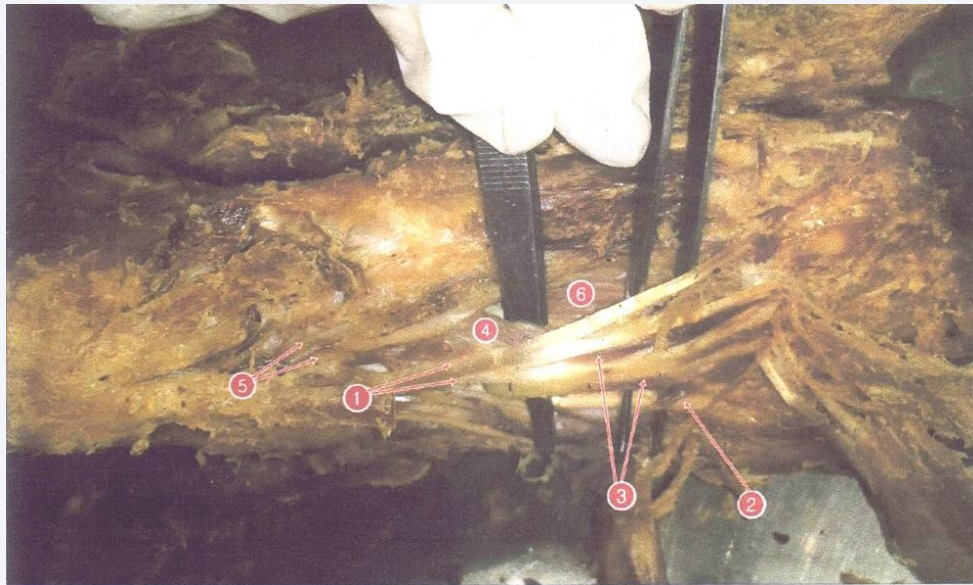
- ❖ Make a vertical incision from the centre of root of heel to the tip of middle toe.
- ❖ Reflect the skin of sole on both sides.
- ❖ Identify the structures present in superficial fascia and cut it.
- ❖ Look for cutaneous nerves and vessels.
- ❖ Identify the structures covered by deep fascia of foot.
- ❖ Identify the muscles, long flexor tendons, nerves and vessels of foot.



Dissection of Palmar/Plantar Aspect of Foot (Superficial Structures)]

Anatomical Structure Labels / Key:

- (1) Site of Kshipra Marma
- (2) Flexor Digitorum Brevis
- (3) Abductor Hallucis
- (4) Abductor Digiti Minimi
- (5) Palmar/Plantar Aponeurosis
- (6) Branches of Medial Plantar Nerve



Dissection of Palmar/Plantar Aspect of Foot (Deep Structures - Layer 1)]

Anatomical Structure Labels / Key:

- (1) Tendons of Flexor Digitorum Longus
- (2) Tendon of Flexor Hallucis Longus
- (3) Lumbrical Muscles
- (4) Flexor Digitorum Accessorius
- (5) Lateral Plantar Vessel & Nerve
- (6) Adductor Hallucis



Dissection of Palmar/Plantar Aspect of Foot (Deep Structures - Layer 2)]

Anatomical Structure Labels / Key:

- (1) Plantar Arch with Plantar Metatarsal Arteries

2) Dissection of Dorsum of Foot:

- ❖ Make transverse incision from medial to lateral malleolus of ankle joint.
- ❖ Make a vertical incision from the centre of transverse incision.
- ❖ Extend a vertical incision up to the tip of middle toe.
- ❖ Reflect the skin of foot towards medial and lateral border.
- ❖ Reflect the skin of middle toe on both sides.
- ❖ Structure seen first is the superficial fascia of foot.
- ❖ Identify the cutaneous nerves.
- ❖ Also identify the distribution of veins and formation of dorsal venous arch in it.

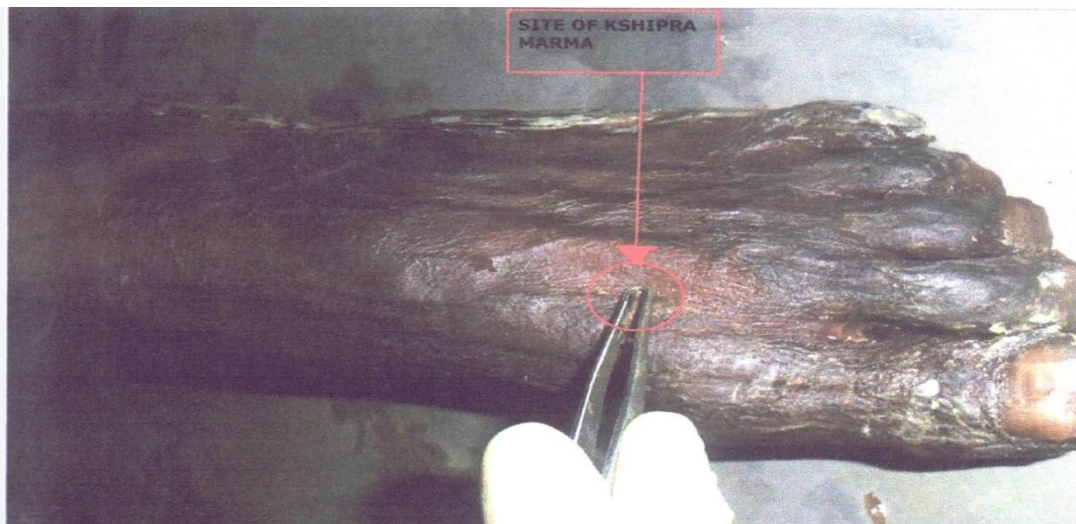
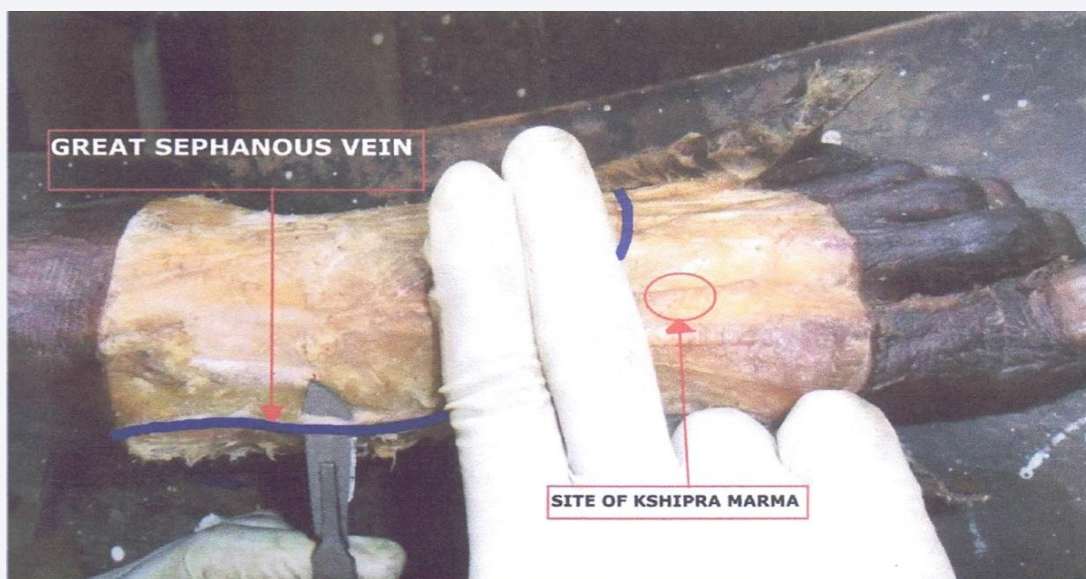


Diagram showing site of Kshipra Marma]

Anatomical Structure Labels / Key:

- Anatomical location of Kshipra Marma marked on the dorsum of foot at the first intermetatarsal space.



Dissection of Dorsal Aspect of Foot (Great Saphenous Vein Location)]

Anatomical Structure Labels / Key:

- Location of Great Saphenous Vein visualized two angulas (~3 cm) proximal to Kshipra Marma.

Clinical Study

Study design: It is a prospective randomized clinical trial.

Material for siravedh:

- 1) Scalp vein set / intravenous set
- 2) Sphygmomanometer / tourniquet
- 3) Spirit swab
- 4) Cotton swab
- 5) Measuring bottle for blood collection
- 6) Sticking tape

Method of siravedh: Patients of *vatakantaka* were randomly selected from OPD of *ayurvedic* hospital irrespective of their sex, religion, occupation etc. and between the age group 16-70 yrs. Detailed history was taken according to the case record form prepared for the study incorporating all the relevant points from both *ayurvedic* and modern view. 60 Patients suffering from *vatakantaka* were included.

Criteria for Diagnosis: Diagnosed patients of *vatakantaka* in *rognidan* OPD are taken into consideration for the study. Criteria for diagnosis were done on the basis of sign and symptom available in the *ayurvedic* and modern books as well as with the help of parameters. Subjective parameter is *ruja* (pain) and objective parameter is X-ray of ankle joint.

INCLUSIVE CRITERIA:

- 1) All patients in the age group of 16-70 yrs.
- 2) Patient having sign & symptoms of *vatakantaka*.

3) Patient who are diagnosed *calcaneal* spur.

4) Patient of either sex.

EXCLUSIVE CRITERIA:

- 1) Patients having *calcaneal* fracture.
- 2) Patients having major illness like hypertension, diabetes mellitus, anaemia, bleeding disorders, acute infectious fever.
- 3) Patients having major surgical illness.
- 4) Pregnant and lactating women.

WITHDRAWAL CRITERIA:

- 1) Patient showing any adverse reaction.
- 2) Patient not giving proper follow-ups.
- 3) Patient not following proper treatment guidelines.

LABORATORY INVESTIGATIONS: CBC, CT, BT, BSL, ESR, HIV-1&2

Methodology & Procedure:

Total 60 patients of *vatakantaka* were subjected to *siravedh* procedure. *Siravedh* was done on site mentioned by *acharya Sushruta* i.e., 2 *angula* above *kshipra marma* on 0th and 15th day. *Sira* taken for *siravedh* in patient is cephalic vein in hand and great *saphenous* vein in foot. Readings of *ruja* (pain) gradation were taken before *siravedh* on 0th day and at follow-up (15th day).

1) Purva karma (pre-procedure measure): Equipment kept ready. Patient given light and liquid diet. Local part

prepared two *angulas* above *kshipra marma*.

2) Pradhana karma (main procedure):

Patient kept in sitting position. Cuff of sphygmomanometer squeezed above lesion to visualize veins. Disinfected with spirit swab. *Siravedh* done using large scalp vein set into great *saphenous* vein. Average 40-60 ml blood collected. *Samyak siravedh lakshanas* achieved (*vedanashanti*, pain relief).

3) Pashchata karma (post procedure measure):

Cuff and scalp vein removed. Puncture site covered with sterile cotton swab and sticking tape. Patient advised rest, clean area, and avoid exertion/trauma.

Criteria for Assessment of Result:

Assessed mainly on relief in *ruja* (pain) using Oxford Pain Scale: Grade 0 (No

pain), Grade 1 (Mild pain), Grade 2 (Moderate pain), Grade 3 (Severe pain). Objective criteria: X-ray ankle joint (AP & Lat view).

Observation and Results

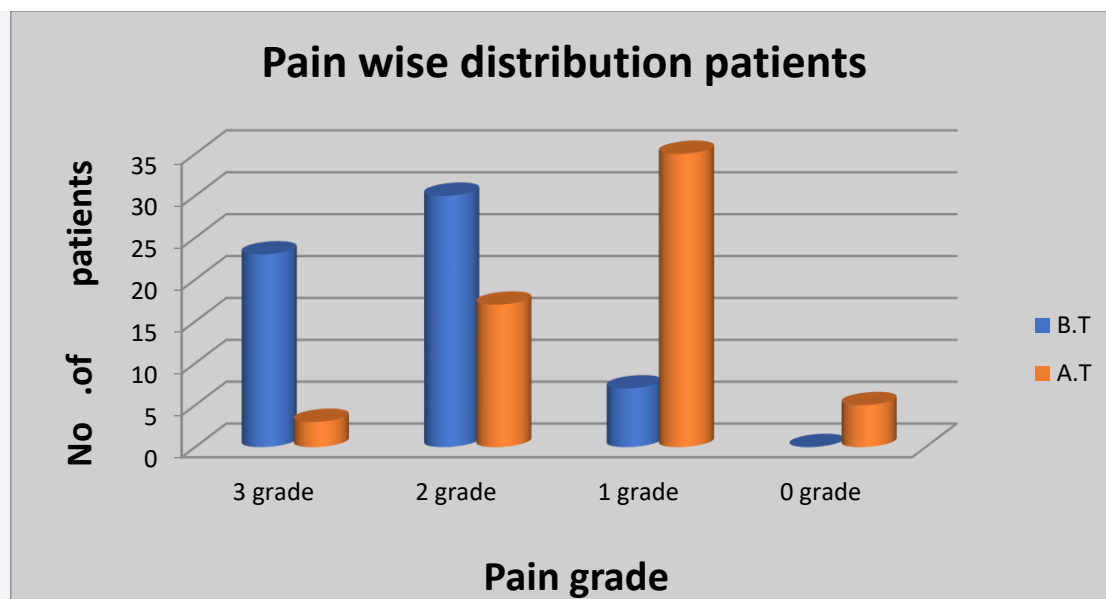
Structural Study Observations:

In the *dorsum* of foot, skin is smooth with minimal subcutaneous fat. Veins are superficial and prominent. The Great *Saphenous* Vein is formed as the medial upward continuation of the *dorsal venous* arch, located approximately 2 *angulas* (~3 cm) proximal to *kshipra marma* (first inter-metatarsal space). This corresponds directly with *Sushruta's* prescribed site for *siravedh* in *vatakantaka*.

Clinical Study Observations:

Table 1: Distribution of Patients according to *Ruja* (Pain)

Pain Grade	BT (Before Treatment)	BT %	AT (After Treatment)	AT %
Grade 3 (Severe)	23	38.33%	3	5.00%
Grade 2 (Moderate)	30	50.00%	17	28.33%
Grade 1 (Mild)	7	11.66%	35	58.33%
Grade 0 (No Pain)	0	0.00%	5	8.33%
Total	60	100.00%	60	100.00%



Distribution of Patients According to Ruja (Pain) Before & After Treatment]

Anatomical Structure Labels / Key:

- Bar chart showing dramatic shift from Grade 2 & Grade 3 pain before treatment (BT) to Grade 1 & Grade 0 after treatment (AT).

Table 2: Wilcoxon Signed Rank Test for *Ruja* (Pain) within Group

Group	Stage	N	Mean	Median	W Value	P Value	Significance
Trial Group	BT	60	2.267	2	1540	< 0.0001	Extremely Significant
Trial Group	AT	60	1.300	1	1540	< 0.0001	Extremely Significant

Table 3: Overall Effect of Therapy According to % Relief in Patients

Sr. No.	Improvement Grade	Relief Criteria %	No. of Patients (%)
1	Marked Improvement	76% - 100%	5 (8.33%)
2	Moderate Improvement	51% - 75%	33 (55.00%)
3	Mild Improvement	25% - 50%	17 (28.33%)
4	Unchanged	00% - 24%	5 (8.33%)

Summary of Clinical Efficacy: Average % relief in symptom score was **46.11%**.

Overall **90.51%** of patients showed positive clinical improvement in pain reduction.

Discussion

The present study type was conceptual and clinical study entitled “*Study of Rachana Sharir of Vedhya Sira in Vatakantaka as per Sushruta Samhita w.s.r. to Calcaneal Spur.*” Trial group comprising 60 patients of *vatakantaka* (*calcaneal spur*) were treated with *siravedh*.

A) Structural Study Discussion:

Acharya Sushruta has given exceptional importance to *siravedh* in *chikitsa*. Except *Acharya Charaka*, everyone has included *siravedh* in *panchakarma* therapy. In *sharir sthana*, ‘*siravyadhvidhi*’ *adhyaya*, *Sushruta* explained disease wise distribution of site of *siravedh*. In *vatakantaka*, *siravedh* is to be done at 2 *angul* above *kshipra marma*.

‘*Angushtho-angulyor*’ *Madhya* is the site of *kshipra marma* (सु.शा ६/२५).⁽⁶⁾ However, *Sushruta* did not name the specific vein to be punctured or specify whether dorsal or plantar aspect of foot should be chosen. Cadaveric dissection revealed that in the plantar foot, vessels are deep beneath thick skin and muscular layers. In contrast, on the dorsum, skin is smooth with minimal subcutaneous fat, and the Great *Saphenous Vein* is superficial, prominent, easily accessible, and situated approximately 2 *angulas* (~3 cm) above *kshipra marma*. Thus, Great *Saphenous Vein* is the anatomical equivalent of *sushrutokta vedhya sira* in *vatakantaka*.

B) Clinical Study Discussion:

Siravedh performed at this specific site resulted in statistically extremely significant reduction in *ruja* (pain) ($P < 0.0001$). Maximum patients (33) were aged

46-60 years (5th & 6th decade), corresponding to natural age-related increase in *vata dosha*. Male preponderance (37) and higher incidence in labours (20) and rural habitats (34) correlate directly with physical exertion and walking on uneven ground surfaces.

Importantly, while *siravedh* produced rapid relief in *ruja* (pain), follow-up radiographic X-rays showed no structural reduction in the calcified spur bony osteophyte. This demonstrates that *siravedh* acts on symptomatic pain and inflammatory congestion without dissolving bony exostosis.

C) Probable Mode of Action of Siravedh:

According to *Sushruta*, *rakta* is considered the fourth *dosha* (सु.शा 21/३). Vitiation of *vata dosha* causes local blood morbidity (*rakta dushiti*). Performing *siravedh* lets out *dushita rakta*, evacuates local inflammatory mediators, relieves venous hypertension, breaks *Dosha-Dushya sammurcchana*, and rapidly subsides *ruja* (pain).

Conclusion

From the structural and clinical study, the following conclusions are established:

Structural Study:

- 1) The Great *Saphenous Vein* in the foot is anatomically located two *angulas* proximal to *kshipra marma*.
- 2) The Great *Saphenous Vein* is the anatomical identity of the unnamed *vedhya sira* described by *Acharya Sushruta* for *vatakantaka*.

Clinical Study:

- 1) Maximum clinical incidence occurred in 46-60 years age group, males, manual labours, rural residents, and patients with chronicity < 3 months.
- 2) *Siravedh* provides statistically extremely significant ($P < 0.0001$) relief in *ruja* (pain) in *vatakantaka* (calcaneal spur), with 90.51% overall patient improvement rate.
- 3) *Siravedh* provides functional and symptomatic relief without altering radiographic bony spur architecture, serving as an effective emergency parasurgical intervention.

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