

"Rasavaha Srotas: An Anatomical Exploration and Its Correlation with Cardiovascular Physiology"

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ABSTRACT

The human body is sustained through the coordinated functions of *Dosha*, *Dhatu*, and *Mala*, which are transported via specific channels termed *Srotas*. Each *Srotas* has a regulatory site termed *Srotomula*, which functions as its governing center. Classical texts compare *Srotomula* to the root of a tree, emphasizing its vital role in sustaining the channel's integrity. The present study undertakes a literary review to assess the concept of *Srotas* and *Srotomula* with special reference to *Rasavaha Srotas*. According to Charaka, Sushruta, and Ashtanga Samgraha, the *Hridaya* (heart) and *Dash Dhamanis* (ten great vessels) constitute the *Moola Sthana* of *Rasavaha Srotas*. These structures regulate the circulation of *Rasa Dhatu*, the primary nutrient essence derived from digested food, which serves as the foundation for

the nourishment and development of subsequent *Dhatus*. Physiologically, *Rasa Dhatu* supports growth, immunity, thermoregulation, and tissue maintenance. The Ayurvedic description of *Rasavaha Srotas* aligns with the vascular and capillary networks in modern science, which distribute plasma, lymph, and essential nutrients throughout the body. This review concludes that *Srotas* can be considered as anatomicophysiological pathways, while *Srotomula* represents their control sites, highlighting the integrative role of the heart and vascular system in maintaining systemic equilibrium.

KEYWORD- *Srotas*, *Srotomula*, *Preenan*, *Vardhan*.

INTRODUCTION

The human body is primarily made up of three types of materials:

*Dosha, Dhatu and Mal*¹. These materials exist in the body and need to be transported from their production sites to their action points. "*Srotas*" refers to the channels through which these substances are moved within the body².

There should be a monitoring or regulating site for *Srotas* termed as *Srotomula*. Sushruta and Chakrapani had given the definition but in sutra form. Chakrapani has compared the *Srotomula* with the root of the tree and said that as the injury to the root leads to the destruction of the tree, similarly injury to the *Srotomula* can affect the whole *Srotas*³. So, the *Srotomula* can be the physiological or anatomical controlling center of the *Srotas* due to which the body maintains its dynamic equilibrium. From the conceptual point of view, there is hardly any description of the term *Srotomula*. The research works enable an understanding of the concept of *Srotas* and *Srotomula*. The foremost work on *Srotomula* in detail was done by Deshpande A. who considered the *Srotomula* as the *Samgrahasthana*, *Samcharisthana*, *Abhivyaktisthana*, *Niyantraksthana*, *Samchayasthana* etc⁴. M.K. Madankumar concluded that *Srotomula* is better understood as the governing site of formed *Dhatu*s⁵. Deeja C.R. concluded that it is the master organ of the particular system which may be a developmental or generative place⁶. Pawar Pradeep Shivram concluded that the assessment of *mulasthan* cannot be ascertained always from the perview of an anatomical angle. In this regard, the controlling inputs of the functions of the and the physiological angles are also to

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be considered⁷. All these works give some direction about what *Srotomula* could be, but have not dealt with enough examples and details to explore the concept.

Ayurveda says "*Sharir Dharanat Dhatahv*"⁸. Among all *Dhatu*s, *Rasa Dhatu* is described as the first and most fundamental, being directly formed from *Anna Rasa*. It nourishes and supports subsequent *Dhatu*s, ensures systemic homeostasis, and is vital for immunity, growth, and thermoregulation. The transportation of *Rasa Dhatu* occurs through *Rasavaha Srotas*, which are governed by their *Srotomula*. Charaka identifies the *Hridaya* (heart) and *Dash Dhamanis* (ten great vessels) as its root, while Sushruta and other authorities additionally include *Rasavahi Dhamanis*.

The conceptual and clinical significance of *Rasavaha Srotas* lies in its correlation with modern anatomical and physiological structures such as the heart, major blood vessels, and capillary networks, which perform the function of nutrient circulation. Understanding its origin (*Moola Sthana*), functions, and pathological manifestations is crucial for integrating Ayurvedic knowledge with modern biomedical perspectives.

AIM

To describe *Srotas* and *Srotomula* of *Rasavah Srotas*.

MATERIAL AND METHOD

Method- LITERARY RESEARCH

Material-

Charak	Sushruta	Astanga Samgraha
<i>Hridaya, Dash dhamni</i> (च.सं. वि. 5/7)	<i>Hridaya, Rasvahi</i> <i>dhamni</i> (सु. सं. शा. 9/12)	<i>Hridaya, Dash dhamni</i> (अ.सं.शा. 6/18)

RASAVAHA SROTODUSHTI HETU, LAKSHAN AND SROTOVIDHHA LAKSHN

DUSHTI HETU (According to Acharya Charak)	DUSHTI LAKSHAN (According to Acharya Charak)
<i>Guru, sheet, Snigdha, atimatra aahara, atichintan</i> ⁹ .	<i>Asradha, aruchi, asyavairasya, arasagyata, hrillas, gaurav, tandra, angamarda, jwara, tama, pandutva, srotorodha, klaibya, angasada, krishangata, agninash, valaya, palita</i> ¹⁰ .

SROTOVIDHHA LAKSHAN (According to Acharya Sushrut)
<i>Sosh and features as in injury to pranvaha srotas, death</i> ¹¹ .

DISCUSSION

SROTAS

- The *Srotas* may be as an anatomicophysiological structure in the body namely duct, tube, capillary network intercellular space or other hollow space which starts with an opening and extends up to another end to provide nutrition and different important substances and removes the waste product by *Sravan Karma*.
- There will be a channel from blood vessels to sources through which the parinam prapt *rasa*

dhatu will be carried out by *shravana karma*.

RASAVAHA SROTAS-

- Capillaries are delicate blood vessels that exist throughout our body. They transport blood, nutrition, and oxygen to cells in our organ and body system through permeation.

What is *rasa dhatu*? *Rasa dhatu* originates from the *Rasa Gatau dhatu*, which is the most important *dhatu*, directly formed from *Anna Rasa* and containing all the necessary nutrients for the development of the remaining *dhatu*

of the body. It is the mool of 18 Bhav padarthas.

When the anna Rasa reaches the liver through *pittadhara kala* and there it mixes with different proteins, vitamins, hormones, enzymes and other substances, then the Rasa dhatu is formed. It is circulated by the Heart via 24 dhamni to the whole body. Plasma, lymph, tissue fluid, transcellular fluid, fluid in bone/ cartilage are Rasa dhatu.

The function of Rasa dhatu is: –

- *Prinan, tushti* (Providing nourishment and hydration)¹²
- *Raktapushti* (gives important material for blood formation-B12, protein, iron, copper etc)¹²
- *Snehan*, (the normal *Rasa dhatu* brings skin texture smooth and soft)¹³
- *Vardhan* (Supporting growth by providing nutrition, hormones, vitamins, and electrolytes.)
- *Dharan* (dosh dhatu mal samyata is needed for dharan and all these depend upon Rasa dhatu)
- *Yapan* (Flushing out toxins created by dhatupak)¹⁴
- *Avashtambhan* (giving immunity by antibody, agglutinin, hemolysin, precipitin, antitoxin, opsonin)
- *Snehan, Tarpan* (the normal *Rasa dhatu* brings skin texture smooth and soft)¹⁵
- *Taap niyaman* (Regulating body temperature by absorbing heat and evaporating it through the skin.

PHYSIOLOGY

RASAVAHA

SROTAS –

Ras is made up by aahar Pak. firstly aahar is digested in the stomach and intestine which is called *Jathragni Pak* and that parinam prapta anna is now called anna rasa. Then through the *Pitta dhara Kala*, this anna rasa is absorbed and gone to liver through the villis of intestine and in liver it is mixed with different type of protein, vitamin, enzyme and other important substance then it is called *ras dhatu* (plasma) and also there is *ranjak Agni* which convert some of *ras dhatu* into rakt dhatu and then *Ras dhatu* (plasma) along with *Rakt dhatu* is circulated to all over the body through our heart and *dhamni* attached to heart, by the influence of vyan vayu. Then this plasma(rasa) go to the tissue level and in the tissue level there are many capillaries throughout the body, where the exchange of nutrients, Oxygen and waste material between the blood and the tissue or cell is done by these fine capillaries. Thus this rasa nourishes every cell, tissue organ and our whole body by providing essential nutrition for growth, repair, maintenance and also remove harmful toxins and other materials. Some of nutrient rich plasma are lakes out of capillary and this fluid is then collected by lymphatic system and return to the blood stream.

Ras is not separately circulated it is circulated in the form of ras-rakta complex or the form of lymph.

SROTOMULA

Srotomula may be as

- Place of origin or nutrition

- संग्रह स्थान/संचारी स्थान/अभिव्यक्ति or संचय स्थान
- Controlling or regulating center.
- Monitoring center
- *Chikitsatmak drishtikone* (related to the clinical point of view) is the main seat of the pathology of that channel.

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- *Hridaya* and the ten vessels (*Dhamaniyah*) is the site of origin of the *Rasavaha srotas* as per Maharshi Charak.
- According to Maharshi Sushrut, There are two *Moola sthanas* explained for *Rasavaha srotas* *Hridaya* and *Rasavahi Dhamanis*.

Hridaya

It is the place of *Oja* and *Chetana*, and it is attached to the *Dash Dhamanis*, who carry *Oja*.

The origin of the *Hridaya* is from *Sara* bhaga of *Kapha* and *Shonita*.

Hridaya is the place of *Prana* and *Vyana* *vayu*.

Dhamani

For *Dhamani*, *Hira*, *Nadi* word is used and *Sira* in *Agni Puran*, *Dhamani* in *Hridaya* is described by *Maharshi Charak*, *Sushrut*, *Astanga Samgraha* and *Astanga Hridaya*. The concept is where the *Dhamana* (*Spandana*) *Karma* takes place, that is known as *Dhamani*. where purified blood flow and spread in the whole body

Dhamani is calculated as constituents of *Pitraja Bhava* and is originated from *Prithvi Mahabhoota*.

The *Moola Sthana* of *Dhamani* before birth and after birth is *Hridaya*. Here the concept of *Charak* is more appropriate.

The number of *Moola Dhamanis* i.e. attached to the *Hridava*, are 10.

In सु.शा.9/3 *Sushrut* termed *Sira. Dhamani* as सादृशकर्मत्वात्', he further explained that *Sira*, *Dhamani* are responsible for *Rasa-Rakta Samvahana*. Thus, both *Sira* and *Dhamani* can be include in *Rasavahi Dhamanis*.

From an embryological perspective, it suggests that *Sira* is primarily responsible for transporting the *poshak tatva* (such as *rasadi dhatu* and *oja*) which provides the *foetus* with its nutritional supply. During *foetal* circulation, deoxygenated blood moves from the *foetus* into the placenta via the umbilical arteries, and flows through the network of *foetal* capillaries located in the placenta. As these capillaries are surrounded by maternal blood, the exchange of nutrients and gases occurs there, resulting in the blood that returns to the *foetus* through the umbilical vein being enriched.

From the above discussion, it can be said that the *Moola sthana* of *Rasavaha srotas* is *Hridaya* and *Dash Dhamanis*. As per Modern science, it can be said with the following names:

- i. Right Coronary artery
- ii. Left Coronary artery
- iii. Pulmonary trunk
- iv. Superior *venacava*
- v. Inferior *venacava*
- vi. Aorta
- vii. Pulmonary vein- 4 no.

Hridaya is the *Moola sthana* of *Rasavaha Srotas*. Rasa being the first nutrition pool of the body; where Heart is the only organ which is involved in the circulation of *Rasa* through the *Rasavahini Dhamanis* throughout the body.

Heart is the *Moola sthana* of *Rasavaha Srotas* since it has the role in regulation and distribution of the formed *Ras* throughout the body uninterruptedly.

CONCLUSION

- The *Srotas* may be considered as an *Anatomicophysiological* structure in the body namely duct, tube, capillary network, intercellular space or other hollow space which starts with an opening and extends up to another end to provide nutrition, different important substances and removes the waste product by *Sravan Karma* i.e. oozing or permeation .
- The *Srotomula* can be considered as the structure in the human body through which *Srotas* can be nourished and controlled or monitored.
- The capillary system of the body may be concluded as *Rasavah Srotas*.
- Heart and major blood vessels attached to it may be concluded as the mool of *Rasavah Srotas*.

REFERENCES

1. Susruta Samhita, Kaviraj Dr. Ambikadutta Shastri Volume 1, Sutrasthan 15/3, Reprint edition, Chaukhamba Sanskrit Sansthan Varanasi, 2012, p.73.

2. Agnivesha, Charaksamhita, Acharya YT(editor), Sharirasthan 7/16, Reprint ed., Chaukhamba Surabharati Prakashana, Varanasi, 2011, p. 339.
3. Ibid 2 Vimanasthan 5/8, p. 251.
4. Deshapande A. et al., Srotomulam Vichara evam RASAVAHA Moola Sthana Vivechanatmaka Abhyasa, PGdissertation, Dept. of Sharir, Nanded, 1995.
5. M.K. Madankumar et al, Comprehensive study in theMulasthan of Pranavaha and Rasavaha Srotas w.s.r. toapplied aspect of Hriday, PG dissertation, dept. of RachanaSharir, Alva's Ayurveda Medical College, Moodbidri, 2010.
6. Deeja C.R. et al, A review on Pranavaha SrotomulaSthanas, IJAAR vol.1 issue 2 Nov-Dec. 2013.
7. Pawar Pradeep Shivram et al, An analytical outlook of determination of the Mulasthan of Srotas, IRJP 2012.
8. Charaksamhita, Dr. Brahmanand Tripathi, Volume I, Vimansthan 5/25, Chaukhamba Sanskrit Pratishan. Varanasi, 2016, p700.
9. Charaksamhita, Dr. Brahmanand Tripathi, Volume I, Vimansthan 5/14, Chaukhamba Sanskrit Pratishan. Varanasi, 2016, p699.
10. Charaksamhita, Dr. Brahmanand Tripathi, Volume I, Vimansthan 5/7, Chaukhamba Sanskrit Pratishan. Varanasi, 2016, p697.
11. Susruta Samhita, Dr. Bhaskar Govind Ghanekar, Sharira sthanam 9/16, Meharchand

- Lachhamandas Publications New Delhi, 2018, p241.
12. Sushruta. Shonitvardaneeya Adhyaya, In Ayurveda-Tattva Sandipika. Susruta Samhita (by Kaviraja Ambikadutta Shastri), Reprint. Varanasi, India: Chowkhamba Prakhsan; 2010; 75.
 13. Yadavji Trikamji Acharya Susrutha Samhita of Susruta with the Nibandha-sangraha Commentary of Sri Dalhana-charya Varanasi; Chaukhamba Surbhara-ti Prakashan; 2012. Sloka [Su.Su.15/5(1)]; p.67
 14. Davidson's Principles and Practice of Medicine, edited by Nicki R. Colledge, Brain R. Walker, Stuart H. Ralston; Churchill Livingstone Elsevier; 21st edition.
 15. Agnivesha. Rogabhishagjitiyam Viman, In Acharya Trikamji Jadavaji. Charaka Samhita (Charaka and Dridhabala with Chakrapanitika), Reprint. Varansi, India: Chowkhamba Prakhsan; 2007; 278.

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