International Journal of Research in Indian Medicine

Vol. 10th | Issue: 6th | Oct-Dec 2026 | e-ISSN: 2456-4435

Open-Access, Peer-reviewed, Double Bind e-Research Journal of Ayurveda

Article Received on: 13/08/2026 | Reviewed on: 23/09/2025 | Accepted on: 27/09/2026

A Critical Analysis of the Concept of *Srotas* with Special Reference to Charaka Samhita: A Functional Perspective

Charuta Parlewar[1]*, Ujjwala Upadhyay[2], Pradnya Dandekar[3], Smita Aswar[4]

1. Associate Professor & Head, Department of Samhita Siddhant, Shri Gurudev Ayurved College, Mozari, District Amravati, Maharashtra, India
2. Associate Professor, Department of Samhita Siddhant, CSMSS Ayurved College, Chhatrapati Sambhajinagar, Maharashtra, India
3. Professor & Head, Department of Kriyasharir, Mahatma Gandhi Ayurved College, Hospital & Research Centre, Salod (H), Wardha, Maharashtra, India
4. Professor & Head, Department of Samhita Siddhant, CSMSS Ayurved College, Chhatrapati Sambhajinagar, Maharashtra, India

***Corresponding Author:** drcharutaparlewar@gmail.com

Abstract

The concept of *srotas* occupies a fundamental position in Ayurvedic physiology and pathology. In *Charaka Samhita*, *srotasas* are described as pathways or channels associated with the formation, transportation, transformation, nourishment and elimination of various bodily constituents. The present conceptual study critically analyses the description of *srotas* in *Charaka Samhita* and its major commentaries and explores its possible functional correlation with different levels of biological organization, namely cells, tissues, organs and organ systems. Particular attention is given to the Ayurvedic concepts of *parmanu*, *samayoga*, *vibhaga*, *vivardhana* and the role attributed to *vayu* in developmental processes. The study suggests that *srotas* should not be equated exclusively with any single modern anatomical entity. Rather, it may be understood as a functional and dynamic concept encompassing pathways and processes operating at multiple levels of organization. Such a functional interpretation may provide a useful framework for comparative understanding of Ayurvedic physiology and contemporary biomedical sciences. However, these correlations should be regarded as conceptual interpretations rather than direct anatomical equivalences.

Keywords: *Srotas, parmanu, Samyog, vibhag, vayu karma, swabhav*

Introduction

Ayurveda considers the human body as a dynamic and continuously functioning system in which the production, transportation, transformation, nourishment and removal of various substances are essential for the maintenance of health.[1]

Within this framework, the concept of *srotas* occupies a central position in both physiology and pathology.

The term *srotas* is derived from the Sanskrit root *"sru"*, meaning to flow, ooze or move. [1] In Ayurveda, *srotas* refers broadly to pathways or channels through which different substances, including *dosha*, *dhatu*, *mala*, nutrients and other bodily constituents are transported or processed.

The classical literature uses several terms to describe different forms of spaces, pathways and conduits within the body, including *srotas* (channel), *sira* (vein), *dhamani* (artery) *rasayani* (lymphatic channels), *rasvahini* (capillary), *nad* i(duct), *panth* (passage), *marge* (track), *sarirchidra* (space inside the body), *samvrtasamvrta* (duct closed at one end open at another end), *sthana* (residence), *ashay* (container) and *niket*(abode) [2] These terms indicate that the Ayurvedic understanding of internal pathways is broader than the concept of a single visible anatomical tube.

Charaka Samhita describes *srotas* in relation to the formation, transportation, transformation and nourishment of bodily constituents. Importantly, the classical texts do not establish a direct one-to-one correspondence between *srotas* and the anatomical structures recognized by modern science. Therefore, interpreting *srotas* solely as veins, arteries, ducts or other identifiable anatomical structures may not adequately represent the breadth of the classical concept.

From a contemporary perspective, the functions attributed to *srotas* may be examined at different levels of biological organization, including cellular, tissue, organ and systemic levels. Such an approach does not imply that *srotas* are identical to cells, tissues or organ systems. Rather, it provides a framework for understanding how the functional characteristics described in the classical texts may be conceptually compared with modern physiological organization.

A critical analysis of *srotas* is therefore necessary to understand the descriptions provided by *Charaka* and its commentators, examine their functional dimensions, and explore their possible relevance in the context of contemporary physiology.

Aim

Critically analyze the concept of *srotas* described in *Charaka Samhita* and explore its functional correlation with cells, tissues, organs and organ systems.

Objectives

1. To study the concept of *srotas* described in *Charaka Samhita* and its relevant commentaries.
2. To analyze the functional characteristics attributed to *srotas* in the classical texts.
3. To explore the possible conceptual correlation of *srotas* with different levels of biological organization, including cells, tissues, organs and organ systems.
4. To examine the relevance and limitations of interpreting the classical concept of *srotas* from a contemporary biomedical perspective.

Materials and Methods

The present study is a conceptual and literary analysis based primarily on *Charaka Samhita* and its relevant commentaries. Classical references pertaining to the concept of *srotas*, *parmanu*, *samayoga*, *vibhaga*, *vivardhana*

and related physiological and developmental concepts were reviewed.

Relevant modern physiology and anatomy textbooks were consulted to understand the corresponding concepts of cells, tissues, organs, organ systems and embryological development. Published research literature available through relevant databases and journals was also considered where appropriate.

The collected information was subjected to comparative and analytical interpretation. The correlations proposed in the present study are functional and conceptual in nature and are not intended to establish direct anatomical equivalence between Ayurvedic and contemporary biomedical terminology.

Discussion

Srotas as a Multilevel Functional Concept

In the Ayurvedic classics, particularly *Charaka Samhita*, *srotas* are described as pathways involved in the formation, transportation and nourishment of bodily constituents. The descriptions suggest that *srotas* are dynamic rather than static structures.

The ancient Ayurvedic scholars did not describe microscopic structures using the terminology of modern cell biology and histology. Nevertheless, their descriptions of the organization and functioning of the body provide a basis for examining the concept at different levels of biological organization.

Therefore, correlating *srotas* exclusively with a cell, tissue, organ or organ system would be an over simplification. The appropriate interpretation may depend upon the specific function, anatomical context and physiological process under consideration.

Correlation with the Cellular Level

In the view of *charak Samhita*, the number of *srotas* in the human body corresponds to the number of distinct types of bodily constituents (*bhav*).[3] Every bodily constituent *(bhav*) in the human body undergoes formation transport and depletion of bodily constituents. This statement of charak Samhita can be correlated with both the cellular level and the organ system level of human body. At the cellular level interpretation of this process is as follows-

1)Nucleus- contains genetic information and directs protein synthesis.

2)Rough endoplasmic reticulate- synthesizes proteins destined for secretion.

3)Golgi apparatus – modifies and packages these proteins.

4)Secretory vesicles – carry the products towards the cell membrane.

5)Cell membrane – releases the products by exocytosis.

6) – Extra cellular space – receives the secreted material such as hormone, enzymes, mucus or neuro transmitter.[4]

In this way at the cellular level, *srotas* represents pathways through which substances are synthesize, modifies, transported, exchanges and eliminated. The secretory pathway is therefore one modern cellular example of *a srotas* like transport system.

Even the etymological explanation, derivation of a word *srotas* is to secret is given by charak[5] and chakrapani explain that because of flowing or secretion, that is due to the flow of nourishing substances such as rasa dhatu and other dhatu.[6]

Ayurveda explains bodily functions through its fundamental philosophical principals; modern science elucidates their processes through cellular tissue level and molecular mechanism thus based on the available classical descriptions a direct scientific correlation between the function of srotas and cellular mechanism cannot be conclusively established.

In *Vimana Sthana*, *Charaka* discusses the multiplicity of srotas, with some scholars considering them innumerable and others considering them numerable[7] In *Sharira Sthana*, the explanation regarding their innumerability refers to extremely minute units into which the organs of the body are divided, described as *parmanu*.[8]

From a contemporary perspective, this description may be conceptually compared with the microscopic organization of the body. Modern biology recognizes the cell as the basic structural and functional unit of the human body. The human body contains an enormous number of cells, each possessing specialized structural and functional characteristics.[9]

Some researchers have attempted to correlate the concept of Parmanu described in classical Ayurvedic literature with the modern concept of the cell.[10]

However, *parmanu* should not be regarded as synonymous with the modern biological cell without qualification. The comparison is better understood as a conceptual analogy concerning minuteness, multiplicity and organization rather than an assertion that the classical term *parmanu* specifically denotes the modern cell.

Samyoga, _Vibhaga_ and Cellular Proliferation

In *Sharira Sthana*, the classical description of developmental processes includes concepts of *samayoga* and *vibhaga*. These concepts can be examined alongside contemporary knowledge of fertilization, cellular division and embryonic development.

In modern embryology, fertilization involves the union of male and female gametes, namely sperm and ovum, resulting in the formation of a zygote. The zygote is a diploid cell containing genetic material contributed by both parents. Subsequent mitotic divisions result in an increase in cell number.

This process may be conceptually compared with the Ayurvedic descriptions of *samayoga* and *vibhaga*. The comparison is particularly useful for understanding the dynamic process by which an initially microscopic entity undergoes successive changes in organization and multiplication.

According to the classical interpretation, *vayu*, in association with *karma* and *svabhava*, is involved in processes of union and separation. [11] *Chakrapani* further elaborates upon the relationship of *vayu* with *karma svabhava* in this context. [12]

These descriptions may be examined alongside contemporary concepts of cellular proliferation, differentiation and developmental regulation. However, the two explanatory frameworks are based on different epistemological foundations and should not be considered identical.

Embryonic Development

Following fertilization, the zygote undergoes successive mitotic divisions, producing the early stages of embryonic development. The morula develops into a blastocyst, which subsequently implants in the endometrium. The inner cell mass contributes to the embryo, while the trophoblast contributes substantially to the

formation of the placenta and associated supporting structures.

During gastrulation, the three primary germ layers—ectoderm, mesoderm and endoderm—are established. These germ layers subsequently differentiate into specialized tissues and organs. The ectoderm contributes to structures including the nervous system and epidermis; the mesoderm contributes to structures such as muscle, bone, connective tissues, blood and components of the cardiovascular and urogenital systems; and the endoderm contributes to the epithelial lining of the digestive and respiratory tracts and associated organs.

Organogenesis follows these processes, resulting in the development of increasingly differentiated organs and organ systems.[13]

From a comparative perspective, the sequential processes of union, division, multiplication and differentiation may be discussed alongside the Ayurvedic concepts of *samayoga*, *vibhaga* and *vivardhana*. Such comparison is useful for exploring similarities in functional descriptions but should not be interpreted as evidence that the classical authors described modern embryology in contemporary scientific terminology.

Karma, _Svabhava_ and Developmental Abnormalities

Charaka attributes the union and disjunction of *parmanu* to *vayu*, *karma* and *svabhava*. *Chakrapani* provides further clarification regarding the role of *vayu* when associated with *karma svabhava*.[14]

The classical texts also discuss *daiva* and *purushakara* are two types of karma in which daiva is past action of atama who is taking rebirth and purushakar present action of the person and their relationship with health and disease.[15] In the context of fetal development, *Charaka* describes several factors that may contribute to abnormalities in the fetus, including factors associated with *karma* and *svabhava*.[16] if the past actions are not good then disjunction of parmanu takes place of an individual the sperm and ovum may undergo uneven divisions during conception leading to the formation of twins and this may result in the better growth of one fetus than the other fetus leading to their inequality [17]

These concepts may be discussed comparatively with modern knowledge of genetic and chromosomal abnormalities. Contemporary genetics recognizes that developmental abnormalities may arise because of numerical or structural chromosomal abnormalities, gene mutations, environmental factors and disturbances during gametogenesis, fertilization or embryonic development.

However, it is important to distinguish between these two frameworks. The Ayurvedic concept of *karma* is philosophical and causative within the classical worldview, whereas chromosomal abnormalities are explained through molecular and cellular mechanisms in contemporary biology. Therefore, a direct equivalence between *karma* and genetic abnormalities cannot be scientifically

established on the basis of the available classical descriptions.

Chromosomal Abnormalities: A Contemporary Perspective

Modern cytogenetics broadly recognizes two major categories of chromosomal abnormalities:

1. Numerical chromosomal abnormalities

These occur when there is an abnormal number of chromosomes, often resulting from errors in chromosome segregation during meiosis or mitosis.

Examples include:

- Down syndrome usually associated with trisomy 21.
- Edwards syndrome, associated with trisomy 18.
- Patau syndrome, associated with trisomy 13.
- Turner syndrome, characterized by monosomy X
- Klinefelter syndrome, commonly characterized by an additional X chromosome in a male.

2. Structural chromosomal abnormalities

These arise when chromosomes undergo structural changes. They may include:

- Deletion – loss of a chromosomal segment.
- Duplication – repetition of a chromosomal segment.
- Translocation – transfer or exchange of a chromosomal segment.
- Inversion – reversal of a chromosomal segment.[18]

Such abnormalities may occur spontaneously or may be inherited from a parent. They may arise during gametogenesis or early embryonic development.

The classical attribution of developmental changes to *vayu*, *karma* and *svabhava* can therefore be discussed as a philosophical and conceptual framework alongside contemporary explanations, but it should not be presented as a direct description of chromosomal mechanisms.

Correlation with the Tissue Level

A tissue is a group of cells that are structurally and functionally organized to perform specific functions. In modern histology, tissues are organized into different types according to their structural and functional characteristics.[19]

Charaka discusses the multiplicity of *srotas* in relation to the numerous material entities (*bhava-vishesha*) present in the body[20] This observation may be conceptually related to the diversity of tissues and tissue constituents present within the human body.

Body components such as *rasa*, *rakta*, *mamsa*, *meda*, *asthi* and other *dhatu* are described in the Ayurvedic framework in relation to specific physiological processes and pathways.

From a contemporary perspective, these descriptions may be compared with the organization of cells into tissues and tissues into increasingly complex structures. Nevertheless, Ayurvedic *dhatu* and modern histological tissues are not necessarily identical categories. The correlation should therefore be understood as functional and comparative rather than strictly anatomical.

Correlation with Organs

An organ is a structurally organized body component composed of different tissues that collectively perform one or more specific functions.[21]

The concept of *srotas* can also be examined at the organ level because many channels have specific *mulasthana* and are associated with particular physiological functions.

The *mulasthana* of a *srotas* may be interpreted as an important anatomical or functional site associated with the origin, regulation or maintenance of the process represented by that *srotas*. *Chakrapani* refers to *mulasthana* in the context of the *prabhava-sthana*.[22]

Thus, depending upon the context, the *mulasthana* may be considered a functional point of origin or an important site associated with the physiological activity of the respective *srotas*.

Correlation with Organ Systems

At a broader level, the major *srotas* described by *Charaka* may be discussed in relation to the integrated functioning of organ systems.

The major *srotas* include:

- *Pranavaha srotas*
- *Udakavaha srotas*
- *Annavaha srotas*
- *Rasavaha srotas*
- *Raktavaha srotas*
- *Mamsavaha srotas*
- *Medovaha srotas*
- *Asthivaha srotas*
- *Majjavaha srotas*
- *Shukravaha srotas*
- *Mutravaha srotas*
- *Purishavaha srotas*
- *Swedavaha srotas*

These *srotas* are described in relation to the transport, transformation, nourishment and maintenance of various bodily constituents.[23]

From a modern physiological perspective, an organ system consists of multiple organs and structures that work in a coordinated manner to perform major physiological functions. [24] Therefore, certain *srotas* may be conceptually compared with integrated physiological systems rather than with a single anatomical structure.

For example, the functions associated with *pranavaha srotas* involve processes that may be examined in relation to the respiratory and cardiovascular systems,[25] while *annavaha srotas* may be considered in relation to the gastrointestinal system.[26] Such comparisons, however, should be based on functional similarities rather than direct anatomical identification.

Mulasthana* of *Srotas

Charaka describes specific *mulasthana* for different *srotas*. These sites are important for understanding the functional organization of the respective channels.

The *mulasthana* may be interpreted as a principal site associated with the origin, maintenance or regulation of the function represented by a *srotas*. This interpretation is more appropriate than considering the *mulasthana* merely as a single anatomical point.

Thus, the concept of *mulasthana* supports the broader understanding that *srotas* are dynamic functional entities associated with multiple structural levels of the body.

Overall Interpretation

The critical analysis indicates that the concept of *srotas* cannot be adequately represented by a single modern anatomical structure. Its description in *Charaka Samhita* encompasses processes to originate or synthesize, develop persist and be wasted or eliminated.

At the microscopic level, the concept may be discussed in relation to the organization and functioning of cells. At the tissue level, it may be considered in relation to the coordinated activities of groups of cells. At the organ level, it may be associated with specialized structures performing particular physiological functions. At the systemic level, *srotas* may be understood as integrated pathways involving multiple organs and physiological processes.

Therefore, the most appropriate interpretation of *srotas* is as a **dynamic, functional and multilevel concept** rather than as a direct equivalent of a particular anatomical structure.

Conclusion

The concept of *srotas* described in *Charaka Samhita* represents a comprehensive functional framework for understanding the movement, metabolism, nourishment and excretion of bodily constituents. A critical examination of the classical descriptions suggests that *srotas* operate conceptually across multiple levels of biological organization.

The comparison with modern concepts of cells, tissues, organs and organ systems may provide a useful framework for contemporary interpretation of Ayurvedic physiology. However, these correlations should be regarded as functional and conceptual rather than as direct anatomical equivalences.

The concepts of *parmanu*, *samayoga*, *vibhaga*, *vivardhana*, *vayu*, *karma* and *svabhava* provide an important philosophical and physiological framework within the classical Ayurvedic system. Their comparison with contemporary concepts of cellular proliferation, embryogenesis and developmental abnormalities may stimulate further interdisciplinary research, provided that the epistemological differences between the two systems are appropriately acknowledged.

Thus, *srotas* may best be understood as a dynamic and integrated concept that describes the organization and functioning of the body at multiple levels. Further textual, interdisciplinary and evidence-based research is required to explore the clinical and physiological implications of this concept.

References:

1. Sarkar Arpita, Debnarayan Maity. "Critical analysis of srotas; A Literature Review"; international research journal of ayurveda & yoga, vol.5, no.7, pp.180-184.
2. Shastri Kashinath. Charak Samhita of Agnivesha, revised by Charak and Drudhbal with the vidyotini commentary. vimansthan chapter 5\9 revised edition Varanasi chaukhamba Bharti academy 2023; p 634.
3. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary vimansthan chapter 5\3 revised edition Varanasi Chaukhamba Bharti academy 2023; p631.
4. Sambulingam K.and Sembulingam Prema; Essentials of Medical Physiology; 5th edition Jaypee Brothers Medical Publisher 2010 chapter 1; p. 4-11
5. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sutrasthan; chapter 30\12 revised edition Varanasi chaukhamba Bharti academy 2023; p 513.

6. Dwivedi Lakshmidhar. Charak Samhita of Agnivesh with Ayurved Dipika Commentary and Tattva Prakashini Commentary and Jalpakalptaru commentary; sutrasthan chapter 30\12 Chaukhamba. p 619.
7. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sharirsthan chapter 7\17 revised edition Varanasi chaukhamba Bharti academy 2023; p812
8. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sutrasthan chapter 12\7revised edition Varanasi chaukhamba Bharti academy;2023; p 215.
9. Gytan,Arthur c, & john. E hall; Text book of Medical Physiology; 10th ed harcourt international, 2001; chapter 2; p.9.
10. Agrawal, Akash kumar, C.R Adav, M.S Meena. "Physiological aspects of Agni' Ayu. Vol31, no.3, jul-sep 2010, pp. 395-398.
11. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sharirsthan chapter 7\17revised edition Varanasi Chaukhamba Bharti academy 2023; p 812.
12. Dwivedi Lakshmidhar. Charak Samhita of Agnivesh with Ayurved Dipika Commentary and Tattva Prakashini Commentary and Jalpakalptaru commentary; Charak; sharirsthan chapter 7\17 Chaukhamba p 1128.
13. sadler T.W. Langman's Medical Embreology 15th ed, Wolters Kluwer; 2023-chapter 3 p 35-50.
14. Dwivedi Lakshmidhar. Charak Samhita of Agnivesh with Ayurved Dipika Commentary and Tattva Prakashini Commentary and Jalpakalptaru commentary; vimansthan chapter 7\17 chaukhamba publisher p 1128.
15. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sharirsthan chapter 2\44 revised edition varanashi chaukhamba Bharti academy publisher Reprint 2023; p 754.
16. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sharirsthan chapter 2\29 revised edition varanashi chaukhamba Bharti academy publisher Reprint 2023; p 751.
17. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary sharirsthan chapter 2\16 revised edition varanashi chaukhamba Bharti academy 2023; p 747.
18. sadler T.W. Langman's; Medical Embreology 12th ed; Wolters Kluwer;2012-chapter 2 p 11-20.
19. Sambulingam K.and Sembulingam Prema; Essentials of Medical Physiology; 5th edition Jaypee Brothers Medical Publisher 2010 chapter 1; p. 3
20. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary vimansthan chapter 5\3 revised edition Varanasi chaukhamba Bharti academy 2023; p 631

21. K.Sambulingam Prema sembulingam; Essentials of Medical Physiology; 5th edition Jay pee Brothers medical publisher (p) Ltd 2010 chapter 1; p. 3
22. Dwivedi Lakshmidhar. Charak Samhita of Agnivesh with Ayurved Dipika Commentary and Tattva Prakashini Commentary and Jalpakalptaru commentary; Charak; vimansthan chapter 5\7 chaukhamba publisher p 828.
23. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary vimansthan chapter 5\9 revised edition varanashi, Chaukhamba Bharti academy 2023; p634
24. 24) Sambulingam K.and Sembulingam Prema; Essentials of Medical Physiology;5th Edition Jay pee Brothers medical publisher 2010 chapter 1; p3
25. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary vimansthan chapter 5\7 revised edition varanashi chaukhamba Bharti academy publisher Reprint 2023; p632
26. Shashtri Kashinath. Charak Samhita of Agnivesh revised by Charak and Drudhbal with the vidyotini commentary vimansthan chapter 5\9 revised edition varanashi, Chaukhamba Bharti academy publisher Reprint 2023; p63.

Conflict of Interest: *Non* Source of funding: *Nil*

Cite this Article:

Charuta Parlewar, Ujjwala Upadhyay, Pradnya Dandekar, Smita Aswar, "A Critical Analysis of the Concept of Srotas with Special Reference to Charaka Samhita: A Functional Perspective".(2026),

Ayurline: International Journal of Research In Indian Medicine:10(6),

Article Url: ***https://www.ayurline.in/index.php/ayurline/article/view/1143***

Crossref DOI: ***https://doi.org/10.52482/ayurline.v10i6.1143***