

A CRITICAL STUDY OF ANNAVAHA SROTAS WITH SPECIAL REFERENCE TO ITS DEVELOPMENTAL ANATOMY

[Niraj Gole](#)¹, [Pankaj Gupta](#)², [Nisha Bhalerao](#)³, [Arvind Kumar Yadav](#)⁴

¹Assistant Professor, ²Associate Professor, ³Associate Professor, ⁴PG Scholar

¹Dept. of Rachna Sharir, SAM Ayurved College (M.P.), India

²⁻⁴P.G. Dept. of Rachna Sharir, Pt. Khushilal Sharma Govt. Auto. Ayurved College & Institute Bhopal (M.P.), India

Corresponding Author: nirajgole20@gmail.com

<https://doi.org/10.46607/iamj3209072021>

(Published Online: July 2021)

Open Access

© International Ayurvedic Medical Journal, India 2021

Article Received:01/07//2021 - Peer Reviewed:10/07/2021 - Accepted for Publication:11/07/2021



ABSTRACT

Ayurveda has its holistic approach to understanding the *Purush Sharir* by different theories like *the Srotas*, the concept of *Srotas* is a unique contribution in the understanding of the anatomy of the human body. There is a description of *Srotas* by 13 Acharya Charak and 11 pairs of *Srotas* by Acharya Sushrut, both Acharyas described *Annavaaha Srotas* and its Moolas. *Acharya Dhanwantari* all parts of the body formed at the same time due to *Va-yu*. *Vayu* along with *Pitta* demarcates channels according to purpose; similarly, entering *Mamsa* (flesh) demarcates muscles. *Matrija Bhava* and *PitrajBhav* are helpful in the origin of *Annavaaha Srotas*. In the classics, *Achar-ya* says about three Pillars of life viz *Ahara*, *Nidra* and *Brahamacarya*. *Ahara* is a basic need of all living things. *Annavaaha Srotas* is one of the types of *Srotas* described in all important *Samhita*.

Keywords: *Annavaaha Srotas*, *Sroto Moola*, *Annavaahidhamni*, *Amashaya* and *Vamparshava*

INTRODUCTION

Ayurvedic classics proclaim “*Srotomayam hi Shari-ram*” means the living body is a channel system comprised of innumerable channels which are designed as an inner transport system for divergent functions. *Srotas* is used as a generic term indicating all the macro channels and pathways in a living organism. *Srotas* is mentioned in various *Ayurvedic literature*. *Srotas* meaning channels or pores that are present throughout the visible body as well as in “invisible” or subtle levels of the cell, molecules, atoms, and subatomic strata. It is through these channels that nutrients and other substances are transported in and out of our physiologies. In *Srotas*, two entities are described in terms of body organs and are described as *Srotomoola* (Root of *Srotas*). The *Srotomoola* can be compared with the roots of the tree. Any injury to the roots leads to the destruction of the tree similarly injury to *Srotomoola* can affect the whole *Srotas*. So *Moolas* can be the physiological and anatomical controlling centre of the *Srotas*. In the classics, *Acharya* says about three Pillars of life viz *Ahara*, *Nidra*, and *Brahamacarya*. *Ahara* is a basic need of all living things. Human is trying to get food every day. *Ahara* gives energy to the body. *Acharyas* describe *Annavaaha Srotas* as especially important Vital of the body. It is *Moola Sthana* are *Amashaya*, *Vamparshva* and *Annavaahi Dhamnis*. In modern literature, *Annavaaha Srotas* can be correlated with the gastrointestinal tract. *Annavaaha srotas* and their components deal with the transportation of food materials. The gastrointestinal tract (GIT) arises initially during the process of gastrulation from the endoderm of the trilaminar embryo and extends from the buccopharyngeal membrane to the cloacal membrane. The track and associated organs later have a contribution from all the germ cell layers.

AIM & OBJECTIVES

- To Collect, Compile and Analyse the Literature *Srotas* given *Annavaaha Srotas* in *Ayurvedic Classics*
- To Study the Embryological Development Of GIT.
- To Study the Variation and Abnormality During Embryological Development Of GIT.

PLAN OF STUDY

- All the literature regarding *Annavaaha Srotas* and *Annavaaha Srotomoola* will be explored to arrive at a feasible conclusion.
- Collection of the literature finds and attempt to make a correlation between *Ayurved* classics and modern anatomy.

NIRUKTI

The word *Srotas* is derived from the Sanskrit root “*SRU GATAU*” *Dhatu*. The term *Srotas* means secreting, filtering, flowing, moving, oozing etc.

SROTAS PARYAY [SYNONYMS]

Acharya Charak has mentioned the synonyms of *Srotas* are *Srotansi*, *Sira*, *Dhamani*, *Rasayani*, *Rasavahini*, *Nadi*, *Panth*, *Marga*, *Shariracchidra*, *Samvrit*, *Asamvrita*, *Sthana*, *Ashaya* and *Niketa*⁵.

Acharya Vagabhatt has described the synonym of *Srotas* in *Ashtang Samgrah Sharir Sthan* 6th chapter. These are *Srotansi*, *Sira*, *Dhamani*, *Rasavahini*, *Nadi*, *Panth*, *Ayna*, *Marga*, *Shariracchidra*, *Samvrit*, *Asamvrita*, *Sthana*, *Ashyaya* and *Niketa*⁶.

SROTAS AAKRATI:-⁷

Colour- According to *Acharya Charak*, *Srotas* have their colour like that *Dhatu* which transported through it.

Size- *Anu* (Microscopic), *Sthula* (Macroscopic)

Shape- *Vritta* (Cylindrical), *Dirgha* (Long), *Pratana* (Reticulated)

SROTAS BHED [TYPES]:- Different texts of *Ayurveda* classified *Srotas* as (Table no.-1)

Table 1

| Acharya Charak ¹ | Acharya Sushrut | | Asthanga Hridaya ² | Sharangdhar ³ | Kashyap ⁴ |
|---|---|---|---|---|---|
| Pranavaahasrotas Udakovahasrotas Annavaahasrotas Rasavaahasrotas Raktavaahasrotas Manshavaahasrotas Medovahasrotas Asthivaahasrotas Majjivaahasrotas Shukravaashrotas Mutravaahasrotas Purishvaahasrotas Swedavaahasrotas | Bahirmukhsrotas ⁵ | Antarmukha Srotas/YogvahiSrotas-11 pairs ⁶ | 1.Bahirmukhsrotas – 9 in male and 12 in female same as Maharishi Sushrut 2.Antarmukha Srotas 13-same as Acharya Charak | Bahirmukhsrotas 10 in male and 13 in female. Additional Bahirmukhsrotas in both male & female named as Brahmrandh. | 1.Mahat –9 In males and 12 in female same as Bahirmukh srotas of Sushrut 2.Sukshma Nabhi and Romkoop |
| | 9 in male and 12 in female, they are – 1. Netra-2 2. Karana-2 3. Nasika-2 4. Mukha – 1 5. Guda-1 6. Mutramarg-1 and 3 extras 12 in females 7. Stanya-2 Apatyamarg -1. | 1.Pranavaahasrotas 2.Udakovahasrotas 3.Annavaahasrotas 4.Rasavaahasrotas 5.Raktavaahasrotas 6.Manshavaahasrotas 7.Medovahasrotas 8.Shukravaahasrotas 9.Mutravaahasrotas 10.Purishvaahasrotas 11. Aartavvahasrotas | | | |

Acharya Charak has also described *Manovaha Srotas* in different references.

GENERAL CAUSES OF SROTODUSHTI

Acharya charak has mentioned general causes of *srotodushti* in *Viman Sthan* 5th chapter *Srotovimaniya* and explained that food and conduct which is like *gunas* of *Vatadi Doshas* and opposite to *Gunas* of *Dhatus* are the causes of *Srotodushti*.⁷

Acharya Sushrut has not stated the general causes of *Srotodushti*.

Acharya Vagbhata has described *Srotodushti* like *Acharya Charak*.

GENERAL SYMPTOMS OF SROTODUSHTI AND SROTOIDDHA

Symptoms of *Srotodushti* are *Atipravriti*, *Sango*, *Siragranthi* and *VimargGaman*.⁸

Acharya Sushrut has not mentioned the general symptoms of *Srotodushti* and *Srotoviddha*.

Both the Vagbhata unanimously agrees with *Acharya Charak* for the reason of *Srotodushti*.

ANNAVAHA SROTAS

Annavaaha Srotas is obtained from two words i.e., *Anna* and *Srotas*. *Anna* such as *Ashita*, *Peeta*, *Leedha* and *Bhakshya* are necessary for life. *Anna* is essential for life existing. This *Srotas* of the body is the channel that carries the food undergoing biochemical changes and metabolism. According to *Acharya Charak* *Anna* is the *Prana* of the living being and

Varna, *Prasannata*, *Swara*, *Jivana*, *Pratibha* (imagination), *Sukha* (happiness), *Santosh*, *Pushiti*, *Bala*, *Medha* are all dependent on *Anna*.⁹ *Acharya Charak* again mentioned *Pathya* and *Apathy*, *Aahar* which is not harmful to *Paths* of the *Sharir*, or *Mann* is *Pathya* and *Aahar* which is harmful to *Paths* of the *Sharir*, or *Mann* is called as *Apathy*.¹⁰ In the *Shusrut Samhita Sharir Sthan* 3rd chapter *Acharya Dhanvantri* said that all the parts of the body are formed at the same time due to *Vayu*. These are very subtle in shape, so are not easily seen through the naked eyes.¹¹ *Acharya Shushrut* has described that the *Srotas* are differentiated from *Vata* which is associated with *Pitta*.¹² During *Jivotpati* as mentioned by *Acharya Sushruta*, *Aantra* is formed along *Guda* and *Basti* by the *Saara* of *Rakta* and *Kapha* is acted upon by *Pitta* followed by rushing of *Vayu*.¹³ A detailed narration of the *AnnavaahaSrotas* is available in *Charak Samhita*. *Acharya Charak* has explained 13 *Srotas* in *Srotoviman* chapter 5 of *Viman Sthan* and *Annavaaha Srotas* is one of them.¹⁴ *Acharya charaka* said that *Anna* is *Prana* of the living beings and *Varna*, *Prasannata*, *Swara*, *Jivana*, *Pratibha*, *Sukha* and *Santosa* all are dependent on *thaAnna*.¹⁵ *AnnavaahaSrotas* have their origin in *Amasaya* and *vamparshva*. The symptoms of their vitiation are these-such as *Annanaabhilasha*, *Aruchi*, *Avipaka* and *Chhardi* indicate the affection of *Annavaaha Srotas*.¹⁶ *Acharya Charak* further described

in the context of the *Hikka* and *Shwasa*. In this *Vata* along with *Kapha* obstructs the *Pranavaha*, *Udakavaha* and *Annavaaha Srotas* thus produce *Hikka*.¹⁷ *Acharya Sushruta* has also explained the *Annavaaha Srotas* in chapter 9th *Dhamni Vyakarna* in *Sharir Sthan*. *Ashita*, *khadit*, *pittam* and *lidha* having reached the *Annavaaha Srotas* are digested under the influence of the heat of *Pitta* within an appropriate time. The process of digestion depends on the heaviness and lightness of food intake which varies with time.¹⁸

Food carrying channels are two with their roots being *Amasaya* and *Annavaahi Dhamanis*, if injured, it causes *Addhayaman*, *Shula*, *Annadwasha*, *Chhardi*, *Pipasa*, *Andhya* and *Maran*.¹⁹ *Sushruta* has mentioned that when *Pitta* stays in the *Annavaaha Srotas* it becomes *Vidagdha* due to *Vidahi – Avidhahi anna*.²⁰

SYNONYMS OF ANNAVAHA SROTAS

In *Ayurvedic* text, there are many terms *Amashaya*, *Annamarg*, *Amapakvashaya*, *Kostha*, *Paktimarga*, *Bhaktamarga*, *Mahasrotas* etc. are used in the sense of *Annavaah Srotas*. *Acharya Charak* described the *Annavaaha Srotas* in the *Viman Sthan*, *Sharir Sthan* and *Chikitsa Sthan* while describing the pathology of *Hikka* due to obstruction in *Annavaaha Nalika*. *Kostha* is also called *Mahasrotas* which includes *Amashaya* and *Pakvashaya*. *Antahkostha* diseases are *Vaman*, *Atisar*, *Kasa*, *Shwasa*, *Udara* and *Jwar* etc.²¹ *Acharya Charak* while dealing with the *Trayorogamarga* in *Sutra Sthana* has given certain synonyms representing the *Kostha* in the body i.e., *Mahasrotas*, *Sharirmadhya*, *Mahanimna* and *Amapakvashaya*.^{2,23}

The Moolasthan of Annavaahasrotas *Acharuya Charaka* has mentioned *Moolasthan* of *Annavaaha Srotas* as *Amashaya* and *Vaama parshwa*.²⁴ *Maharishi Sushruta* has described “*Annavahe dwe*” which means *Annavaaha Srotas* are two in number. Further, he mentioned *Amashaya* and *Annavaahi Dhamanias* as the *Moolasthan* of the *Annavaaha Srotas*.²⁵ *Ghanekar* in his commentary had accepted the *Annapanali* and *Kshudrantra*. He explains that is *Annapanali* transports *Anna* to *Amashaya* and after

that *Kshudrantra* is the place where *Anna* is transported from *Amashaya*, and it is digested.

AMASHAYA STHAN

According to *Acharya Charak* *Amashaya* is situated between *Nabhi* and *Stana*.²⁶ The food in the *Amashaya* gets digested by the *Agni* and later categorizes *Anna* into *Rasa* and *Mala* like the rice grains with water kept in vessel converted into boiled rice with the help of *Agni*.²⁷ According to *Sushruta*, *Amashaya* is situated above *Pittashaya* because of the opposite qualities and upward motion of *Tejas (Agni)* just as the moon is opposite to the sun.²⁸ *Amashaya* is situated below *parshva*.²⁹ *Acharya Sushruta* further explained that *Sushira Snayu* is found at the end of *Amashaya*. *Sushira* means a hard structure with *Chhidra*.³⁰ Between two *Stana* occupying the position in the chest at the *Amashaya Dwara* in *Hridaya* which is the substratum of *Sattav*, *Rajas* and *Tamas*. Two muscles are found in the *Amashaya*.³¹ According to *Sharangdhar*, *Shleshmashaya* is situated in *Urah* and below it lies *Amashaya*. *Bhavaprakash* has mentioned that *Amashaya* is situated below *Shleshmashaya*. *Amashaya* is located in between *Nabhi* and *Stana*. *Chakrapanidatta* has divided it into two parts *Urdhwa Amashaya* and *Adhoha Amashaya*.

ANNAVAHI DHAMANI

According to *Acharya Shusruta* *Annavaahi Dhamani* is considered as *Moola* of the *Annavaaha Srotas*. *Acharya Ghanekar* said that *Annavaah Dhamani* is *Annalika* and *Kshudrantra*.³² According to *Acharya Charak*, after digestion the final essence part of *Aahara* i.e. *Anahara Rasa* is distributed to all parts of the body through *Dhamanias*.³³ *Charak* has also described *Kshudrantra* in the context of *Kosthang*, but a detailed description of its function is not available, only a description of *Pittadhara Kala* or *Grahani* is available. *Kshudrantra* is the seat of *Pittadhara kala*.³⁴

According to *Sushruta* part between *Amashaya* and *Pakvashaya* is indicated as *Kshudrantra*.

Bhava Prakash has used the word *Pachkashya* for *Grahani*.

✓ According to *Acharya Charak* it is situated above the *Nabhi* and below the *Amashaya*.³⁵

- ✓ Acharya Sushruta said that it is known as *Pittadharakala* and situated the *Amashaya* and above the *Pakvashaya*.³⁶
- ✓ According to Acharya Vagbhatta, it is situated between *Amashaya* and *Pakhvasaya*, this sixth *Kala* is known as *PittadharaKala*.³⁷

SROTO DUSHTI AND VIDDA LAKASHANA

Annavaaha Srotamsi gets vitiated due to untimely intake of excessive quantity of *apathya* food and impairment of *Jatharagni*. Symptoms of *Annavaaha Srotomoola Dusthi* and *Sroto Viddha lakashana* of *Annavaaha Srotas* are as described below. According to *Acharya Charaka Annavaaha Srotas* have their *Moolasthan* in *Amasaya* and *vamparshva*. The symptoms of their vitiation are these-such as *Annanaabhilasha*, *Aruchi*, *Avipaka* and *Chhardi* indicate the affection of *Annavaaha Srotas*.³⁸ According to *Acharya Shusruta* Food carrying channels are two with their roots being *Amasaya* and *Annavaahi Dhamanis*, if injured, it causes *Addhayaman*, *Shula*, *Annadweshha*, *Chhardi*, *Pipasa*, *Andhya* and *Maran*.³⁹

Modern view: Gastrointestinal tract is one of the most important systems in the body. It delivers nutrition to all cells in the body. It consists of the mouth, oesophagus, stomach, duodenum, small intestine.

The embryology of the human digestive system and the body cavities concerns the epithelium of the digestive system and the parenchyma of its derivatives, which originate from the endoderm. During the 4th week, the three distinct regions are foreguts, midgut, hindgut. extend the length of the embryo and contribute a different component of the gut. The oral cavity is formed by the breakdown of the buccopharyngeal membrane. the large midgut is generated by lateral embryonic folding which pinches off a pocket of the yolk sac. the hindgut will later be divided into a separate urogenital and rectal region that ends at the cloacal membrane⁴⁰.

VEINS OF GIT: These are -Portal Vein, Splenic vein, Superior mesenteric vein, Left gastric vein,

right gastric vein, Cystic veins, Superior Mesenteric Vein, Inferior Mesenteric Vein, Splenic Vein etc.

DEVELOPMENT OF GESTRO INTESTINAL TRACT

The whole gestation period is subdivided into 3 stages (a) Germinal, (b) Embryonic and (c) Fetal period.

(a) Germinal Period- It extends from the 1st to the 3rd week of development and begins at fertilization. This period includes cleavage division of the zygote and formation of morula, blastocyst and its implantation, differentiation of trophoblast and chorion appearance of bilaminar and trilaminar germ disc.

(b) Embryonic period- This period extends from the 4th to the 8th week and is characterized by the changes of shape and external appearance of the embryo. Each of the three germ layers undergoes individual differentiation and most of the tissues and organs of the body are formed.

(c) Fetal period- It extends from the 3rd month up to termination of pregnancy. This period is characterized by the rapid growth of the fetus without much tissue differentiation and complete development of the placenta.

CADAVERIC STUDY

The dissection of the gastrointestinal tract was carried out on a human cadaver following the guidelines of Cunningham's practical anatomy, Grant's dissector and other applicable manuals. The cadaveric study was carried out on the 6 cadavers in the Department of Rachna Sharir at Pt. KLS Ayurveda college, Bhopal. With the help of dissection instruments as per dissector. The dissection work had been performed in freshly preserved male and female cadavers which were a middle-aged group. The surface marking of the thorax region and abdominal region was clear and the skin in that region was soft smooth but without glare. Give required incisions and separate the superficial skin, subcutaneous tissue, fascia, muscles etc. and reached into the GI tract. Remove GI tract structures and then further study as per dissection guidelines in detail.

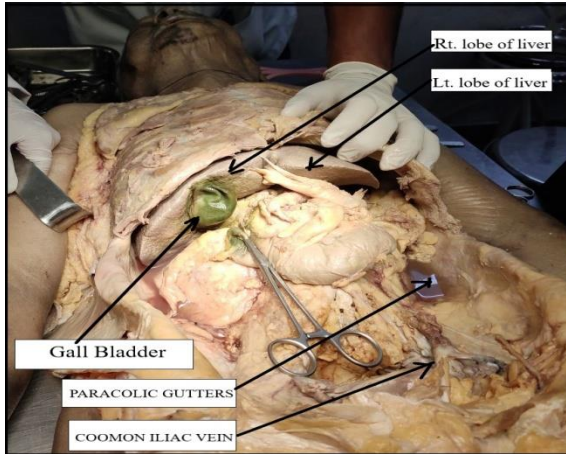


Figure 1: Abdominal cavity Dissection

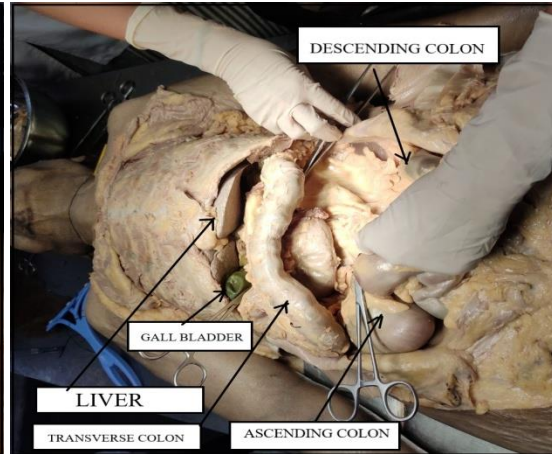


Figure 2: liver, transverse colon and ascending

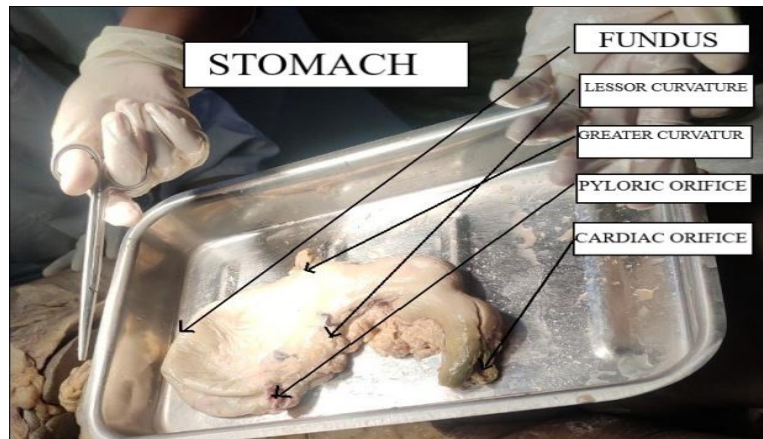


Figure 3: External features of stomach

DISCUSSION

This Discussion entitled section comprises many subheadings. Each subheading has *Ayurvedic* and Modern literature along with an elaborate discussion on *Srotas*, *Srotmoola*, *Annavaaha Srotas* and *Annavaaha Srotas Moolas* as per *Ayurvedic* literature from different sources. The discussion on the development of *Annavaaha Srotas* as per the *Ayurvedic* literature and modern anatomy. Discussion on *Sadbhavas* of fetus related to the development of *Annavaaha Srotas*. Discussion of *Utpatti* of *Sarvpratham Anga* in *Garbha*, different *Acharyas* expressed their views in the view of *Annavaaha Srotas*. Discussion on *Bijansa* is responsible for the formation of each structure in the body. Any defect in the *Bijansa*, *Bijabhaga* or *Bijabhagavyav* formed structure has a congenital defect in it. Here *Acharya* indicates that the *Bijanasa*

dashti form the various developmental abnormalities of the fetus. Here are the defects that take place during embryogenesis that affect the GI tract.

CONCLUSION

With the help of discussion and analysis through all possible points of view, the conclusion has been drawn. The *Srotas* can be considered as the anatomical structure of the body, which are tubes, pores, openings etc. and provide nourishment to the body. *Srotas* can be correlated with be a capillary network of the body. The function of transportation and digestion of food is regulated by a passage called *Annavaaha Srotas* in modern anatomy it can be correlated with the part of Git from the oral cavity up to the ileocecal junction. The *Moolasthan* of *Annavaaha Srotas* is *Amashaya* which can be correlated with the stom-

ach. The *Vama Parshwa* can be considered as the left hypochondrium region of the abdomen cavity. *Annavaahi Dhamani* can be correlated with the tributaries superior mesenteric vein. The *Panchmahabhuta*, *Akasha Mahabhut* forms the lumen, *Vayu Mahabhut* responsible for the movement, *Agni Mahabhut* is the secretions like enzymes, acids, *jala mahabhut* is the mucus part and *Prithvi Mahabhut* forms the walls of the whole GIT. *Garbha* is formed by *Matraj Bhav* are responsible for the formation of the soft organs like the liver, stomach intestine etc., and *Pitraj Bhav* are responsible for the formation of arteries and veins of *Annavaaha Srotas*. The part of the *Annavaaha Srotas* simultaneously developed from the foregut and midgut. The defect in *Bijansa*, *Bijabhaga* and *Bijabhagavyav* leads to a congenital defect of the fetus and the same is responsible for developmental defects in the gastrointestinal tract.

REFERENCES

1. Charak Samhita Vidyotinitika, Shastri K, Chaturvedi G, 1st edition. Varanasi: Chaukhambha Bharati Academy; 2008. Vol.i, ch.Viman 5/6 Page no.710.
2. Astanga Hrdayam Vidyotinitika, Kaviraja Gupta Atrideva, 1st edition. Varanasi: Chaukhambha Prakashan; 2016. Vol. I, Asthanghridayasharir 3/40-41Page no.254
3. Sharangdhar Samitajeevanprada hindi tika, chaukhambha orientalia edition 2017 Purvkhnad 5/44-page n. 42
4. Bradhhajeevaktantrahindividdhotani tika, Pandit Hemraj Sharma Varanasi Chaukhambha Sanskrit Sansthan edition 2009
5. Sushruta Samhita Ayurveda TattvaSandipika, Shastri Ambikadutta, 1st edition. Varanasi Chaukhambha Sanskrit Sansthan; 2014. Vol. I, Su. sha.5/6 Page no.97.
6. Sushruta Samhita Ayurveda Tattva Sandipika, Shastri Ambikadutta, 1st edition. Varanasi Chaukhambha Sanskrit Sansthan; 2014. Vol. I, Su. sha. 9/12 Page no.55.
7. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 5/23 page -14
8. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 5/24 page -71
9. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Sutra 27/349-350 page -567
10. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Sutra 28/41 page -575
11. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 3/30 page-34
12. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 4/28 page-42
13. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 4/26 page-41
14. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 5/6 page -710
15. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Sutra 27/349-350 page -567
16. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 5/7 page -710
17. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Chikitsa 17/21page -511
18. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 4/20 page-40
19. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 9/11 page-96
20. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sutra 46/504 page-286
21. Kavirajatrived Gupta, Vidyotini Commentary on Astanghridaya, Varanashi: Chaukhamba Bharti Academy, 2018. Astanghridaya sutra 12/46 page -127
22. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sutra 11/48 page-235
23. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Chikitsa 17/21-24 page -511
24. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 5/7 page -710

25. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 9/11 page-96
26. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 2/17 page -690
27. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Chikitsa 15/8 page -453
28. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sutra 21/12 page-116
29. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sutra 21/12 page-116
30. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 5/40 page-62
31. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 5/45-47 page-63
32. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 9/11 page-95
33. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. Chikitsa 15/8 page -453
34. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. sharir 6/14 page -901
35. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 2/17 page -690
36. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sutra 21/12 page-116
37. Kavirajatrived Gupta, Vidyotini Commentary on Astanghridaya, Varanashi: Chaukhamba Bharti Academy, 2018. Astanghridayasharir 5/44 page -127
38. Shastri Kashi Nath, Vidyotini Commentary on Charka Samhita, Varanashi: Chaukhamba Bharti Academy, 2018. Ch. viman 5/ page -710
39. Shastri Dr. Ambika Dutta. Sushrut Samhita, Ayurved Tattva Sanddipika Varanasi, Chaukhamba Sanskrit sansthan Varanasi, 2012. Su. Sharir 9/11 page-95
40. Chaurasia B.D. Human Anatomy 2nd vol. 7th ed. CBS Publishers & Distributers 2015 Chap. 29th-page no.274

Source of Support: Nil

Conflict of Interest: None Declared

How to cite this URL: Niraj Gole et al: A Critical Study Of Annavaaha Srotas With Special Reference To Its Developmental Anatomy. International Ayurvedic Medical Journal {online} 2021 {cited July 2021} Available from: http://www.iamj.in/posts/images/upload/1521_1528.pdf