

CRITICAL REVIEW ON *SROTOMOOL* OF *ANNAVAHA SROTAS* AND ITS SIGIFICANCE IN CLINICAL PRACTICE IN PRESENT ERA

**Dr. Sandeep Madhukar Lahange^{1*}, Dr. Archana Nivrutti Bhangare²,
Vikash Bhatnagar³**

¹Assistant Professor P. G. Deptt of *Sharir Rachana* National Institute of Ayurveda, Jaipur.

²Assistant Professor, Deptt. of *Kayachikitsa*, P.G. *Ayurvedic* College & Hospital Mandi Govindgarh (Panjab).

³Assistant Professor P. G. Deptt of *Sharir Rachana* National Institute of Ayurveda, Jaipur.

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***Corresponding Author**

**Dr. Sandeep Madhukar
Lahange**

Assistant Professor P. G.
Deptt of *Sharir Rachana*
National Institute of Ayurveda
Jaipur.

ABSTRACT

Srotas is defined as the channels through which the conduction of the nutrients for the *Dhatu* is takes place regularly. The vitiation, depletion and maintenance of existed bodily structures i.e. *Dhatu* are never possible without *Srotas*. The *Srotansi* are that channels by which conduction of the respective nutrients to their respective destination is possible. After that only that specific organ gets the pacification or depletion. Hence any organ cannot be maintained or cannot vitiate without *Srotas*. Every *Srotas* has its own *Srotomool* which carry or create the *Ras Raktadi Bhava Padarth* through it. As a tree is seriously affected by injury to its root, similarly the channels of circulation in the human body are seriously affected when their *Srotomoola* is being

injured or get vitiated. The utility of the knowledge of the *Srotomoola* (origin) of *Srotas* (channels) is not directly described in *Samhita*. Thus hypothesis is undertaken to understand the concept of *Srotomool of Annavaha Srotas* in scientific way because if we know the structure and function of the *Moola Sthan* of particular *Srotas* then it is easy for the management of various diseases conditions that *Srotas*.

KEYWORDS: Sharir, Srotas, Srotomoola, Annadrava Shoola, Bhava Padarth.

INTRODUCTION

Shareera is the basic subject of medical science. Without knowledge of the *Sharir*, a physician can never be successful in his field. The knowledge of this is very important to the

right concept of *Roga* and *Arogya*. The importance of the knowledge of Shareera is evident from the fact that all *Acharya* have described *Sharir Sthana* before starting with *Chikitsa Sthana*.

The core of *Ayurvedic* medicine is the *Srotas*, an interconnected web of bodily functions said to conduct a healing, sacred energy from head to toe. The *Srotas* which means channels are often thought to be different part of the body's transportation system. *Dosha*, *Dhatu* and *Mala* are the basic building element of the body. Their continuous and proper flowing in the body is essential for the health of the body. Those are maintained by *Anna* (food ingredient) who is transported through *Annavaha Srotas* from out side to meet the digestion process. *Amashaya* digest fully and separates the *Prasadbhaga* and *Kittabhaga*. *Prasadbhaga* transported in all parts of the body and maintained *Dhatus* whereas *Kittabhag* again formed *Dosha* and *Mala*.^[1]

The utility of the knowledge of the site of *Srotomoola* (origin) of *Srotas* (channels) is not directly described in *Samhita*. As a tree is seriously affected by injury to its root; similarly the channels of circulation in the human body are seriously affected when their *Srotomoola* is injured. With this view, *Sushruta* has described symptoms due to the injury at the site of origin of these channels of circulation. But whether these origins are to be treated in vitiations of *Srotas* or these are only organic parts, this is not very much clear from the classical description.

Srotas is defined as the channels through which the conduction of the nutrients for the *Dhatu* is takes place regularly. The vitiation, depletion and maintenance of existed bodily structures i.e. *Dhatu* are never possible without *Srotas*. The *Srotansi* are that channels by which conduction of the respective nutrients to their respective destination is possible. After that only only that specific organ gets the pacification or depletion. Hence any organ can not be maintained or can not vitiate without *Srotas*.

Annavaha Srotas

The *Annavaha srotas* is derived from two words i.e. *Anna* (food ingredient) and *Srotas* (carrying passage). Food like *Ashit*, *Peet*, *Leedh* and *Bhakshya* are essential for life. The life is not exist without *Anna*. According to *acharya charak* *anna* is the *prana* of the living beings and *varna* (complexion), *prasannata* (cheerfulness), *swara* (good voice), *jivana* (life), *pratibha* (imagination), *sukha* (happyness), *santosha* (contentment), *pushti* (corpulence), *bala*

(strength), *medha* (intellect) all these are dependent on the *anna* (food). *Acharya* again explain about to *Pathya and Apathya* i.e *Pathya* is that which is not harmful to paths of the body and is according to liking. One which is harmful to the paths and disliked is certainly not at all desirable. Here path is the *marga* or passage or *srotas* which is carrying the *anna* (food ingredient) from environment to meet the process of digestion called as *annavaha srotas*.^[2]

Origin of Annavaha Srotas

According to *Dhanwantari* all parts of the body formed at same time due to *vayu*. these are very small in size, so not seen easily through naked eye. *Vayu* along with *pitta* demarcates channels according to purpose, similarly entering into *mamsa* (flesh) it demarcates muscles. *su.sha.4/28 Matrija bhava* is helpful in the origin of *Annavaha Srotas*. The minute essence of blood and *Kapha* is acted upon by *pitta* followed by rushing of *vayu*, thereby *antra*, *guda* and *basti* are formed. Here the means of *antra* is whole *mahasrotas* because of the formation of empty system due to *vayu* from mouth to anus. According to *Dalhan* *madhyam* means from throat to anus.^[3]

Panchbhautic Composition of Annavaha Srotas

The growth, variation and division in the *garbha* done through *mahabhuta*. Growth due to *vayu* and *akasha*, transformation /variation due to *pitta* and division due to *vayu mahabhuta*. Thus the main physical components of *annavaha srotas* are *Apya*, *Vayu*, *Akasha* and *Agni*. The main *mahabhuta* in *mukha* is *apya* due to *bodhak kapha*. In *anna nalika* main *mahabhuta* are *vayu* and *akasha*. *Amashaya* is the place of *kapha* and *pittas* then the main *mahabhuta* are *Apya* and *Agni*. *Kshudrantra* is the place of digestion, absorption and elimination of *mala* then the main *mahabhuta* are *Agni* and *vayu*.^[4]

Moola Sthan of Srotas^[5]

In spite of existence of numerous *srotas*, *Acharya Charaka* has categorized 13 number of *srotas* and *acharya sushruta* has described 11 pairs of *srotas* on the basis of clinical utility. The *Moola Sthan* or the source is so considered that without which the origin, maintenance and destruction of that specific carrier of the body nutrient cannot be possible and the place which controls the entire functional dealings and processes of that specific carrier.

Determination of Moola Sthan of Srotas: For the determination of *Moola Sthan* of *srotas* some points have been logically and categorically counted in various classics such as-

1. *Utpatti Sthan* (origin point of view)
2. *Sangraha Sthan* (related with storage)
3. *Vahan Sthan* (related with conduction /transportation)
4. *Naidanic dristikona* (with diagnostic point of view)
5. *Chikitsatmak Dristikon* (related with clinical point of view)

Among the above mentioned points, some points are considered in combination in some contexts and considered separately in some contexts to determine the source of Moola Sthan. But the clinical stand point has been considered in all the cases of determination of the Moola Sthan. Hence justification of the consideration of srotas Moola Sthan of respective srotas in the perview of above points is the contextual need.

Role Mool sthan in disease management

In this context, after keen observation it is clear that the Moola Sthan of srotas can be divided basically into two type i. e. *Sthaniya niyantrak* (local controller) and *Sarvdehik niyantrak* (unique controller). The two centers each mentioned as Moola Sthan in context of one srotas. Primarily controls the activities of their corresponding srotas only. But there might be a super or unique controller who controls Moola Sthan of all srotas. Annavaha srotas is the super controller who controls all these mentioned stand points. Annavaha srotas is the basic substratum for all vital management procedures in the Ayurvedic line treatment. In disease of any srotas it is impossible to complete Vamanadi Panchakarma Shodhana Chikitsa as well as Dipan, Pachanadi Saptavidha Shaman Chikitsa without support of Annavaha srotas. In this regard Annavaha srotas is justified as unique or super controller of all srotas.^[6]

Amashaya as Moolsthan of Annavaha Srotas

The structure in which Anna (food) takes place in the form of Ama/Apakva is called as *Amashaya*. According to *Charaka Amashaya* is situated between *Nabhi* and *Stana*. *Amashaya* is situated above *pittashaya* because of opposite qualities and upward motion of *tejus (Agni)* just as the moon is to the sun. *Agni* cooks from below the food situated in the stomach for division in *Rasa* and *Mala* as the same cooks the rice grains with water kept in vessel into boiled rice. According to *Sharangdhar shleshmashaya* is situated in *Urah* and below this *Amashaya* is situated. Between *twostana (breast)* occupying the position in chest at the *Amashaya* *dwar* is *Hridaya* which is the substratum of *sattva*, *rajas* and *tamas*. *Chakrapanidatta* has divided it into two parts; *Urdhwa Amashaya* and *Adhoamashaya*.

Further Amashaya is related with Annalika (oesophagus) on its upper site and with Grahani below.^[7]

Physiological aspect

Amashaya is the seat of *Shlesma*.^[8] and Vagbhatta says specially the *kledak kapha* which help in the liquification of solid food materials.^[9] But according to *Charak* it is the seat of pitta specially. According to Chakrapani, Amashaya is the seat of both kapha and pitta. The upper portion of the Amashaya is the seat of kapha and the lower one that of pitta. Gangadhar says that Amashaya is the specific site of pitta because pachaka, ranjaka and bhrajaka-these three types of pitta are located there.

Functions of Amashaya

According to Charak, Amashaya is the place responsible for food digestion. Ashit, khadit, Peet and Leedh Ahar are digested here fully and its mature product thereafter reaches the entire organ through Dhamanias. Sushruta has stated that Amashaya is responsible for Sanghatbheda (Breakdown of hard food particles into the soft i.e. chyme), Snehan (Lubrication by mucus) of Ann and Anna Praklinna to make it easily digestible.^[10] Vagbhatta is the first person who said that the ranjaka pitta is located in Amashaya and imparts Ranjana of Rasa (red colour of the blood). Although the food composed of six rasas, immediately after it is ingested under goes the stage of Prapaka (preliminary digestion). It first becomes *Madhura* (sweet) and gives rise to the production of *Kapha* which is frothy nature. Next undergoing further cooking it becomes *Amla* (sour) and gives rise to the production of *Pitta* which is froth freely, then getting expelled from the *Amashaya*. It gets dried becomes solid and *katu* (pungent) and give rise to the production of *vayu*.^[11] Sharadghar has stated *Amashaya* is the seat of Pachak Pitta due to which Anna becomes *Vidagdha* and turns sour (*Amliya*). *Amashaya* is also helpful in *Vaman* and *Virechan*.^[12]

Acharya Charak and *Sushruta* have told that *Amashaya* is the *Moola Sthan* of *Annavaha Srotas*. *Amashaya* is situated between nabhi and stana. Here the digestion of food takes place. The division of digested food in to *Sara* and *Kitta* also takes place here. Later *Sara* is transported in all parts of the body through dhamani. This is the opinion of acharya charak. Other acharya too have got the same opinion. So it can be said as per *ayurveda*, the word *Amashaya* in a broader sense is attributed to *Moola Sthan* of *Annavaha Srotas*. The recent scholars consider only stomach as the meaning of *Amashaya* which is only the first part of digestive tract. Stomach is the place where ingested food first comes and resides. So it

should not be restricted only to the stomach. Actually anatomically, *Annavaha Srotas* is related with oesophagus, stomach and small intestine. The digestion and absorption takes place till the last part of small intestine. Since the *Anna* is present in this area. So when we say *moolsthan* of *Annavaha Srotas* then we should consider both stomach and part of small intestine as *Amashaya* and as *Parshwa* we consider part on either side of mid line of the body.

Assessment of *Amashaya* and *Vama Parshwa* as *Moolsthan*

The *Moolsthan* of *Annavaha Srotas* is *Amashaya* and *Vama Parshwa*. Since to the *Vama Parshwa* of *Amashaya*, *Pleeha* and descending part of *Vrahadantra* are present. We consider stomach as one part of *Annavaha Srotas mula* as *Amashaya*. It is situated in left hypochondriac region. Other structures which present in this region are spleen and descending large intestine. But spleen is related with blood and its mechanisms, hence it has been said as *Moola Sthan of Raktavaha Srotas*. Where as other structure, descending large intestine is related to *Purishavaha Srotas*. Both of these structures have not any role in digestion of food. So only stomach which is situated in left hypochondrium can be considered. When it is filled with food then it looks like distended on *Vama Parshwa*. In the word *Amashaya*, fundus and body part of stomach are included. Other structure considered under the word *Amashaya* is small intestine. It is taken under the broader sense of the word *Amashaya*. It has greater role in digestion, the inclusion can be justified. Within this the vessels related with absorption of broken down food materials, are also need to be included for justification of Sushruta's "*Annavahi Dhamanyah* " as a *Moola Sthan* of *Annavaha Srotas*.

According to *Charaka*, *Moolsthan* of *Annavaha Srotas* first is *Amashaya* situated in left region and second is *Parshwa*. This opinion is also possible as *Acharya* have considered two *Moolasthan* for each *Srotas*. So here too need to split it as two. When we say *Amashaya* which is situated in left region, we have to consider it as stomach. With the other word *Parshwa* we can taken either *Vama Parshwa* or *Dakshina Parshwa*. If we take *Vama Parshwa* there is no structure related with digestion other than stomach. So here is advisable to consider *Dakshin Parshwa* where we can take first part of small intestine. So, based on all discussion it can be finalised that "*Amashaya Mulam Vamam Cha Parshwa* " include stomach and first part small intestine together.

Assessment *Annavahi Dhamani* as *Moolsthan*

Annavahi Dhamani is taken as second *Moolsthan* of *Annavaha Srotas*. Some *acharya* say that *Annavahi Dhamani* is oesophagus. Here it is unfair to consider oesophagus because of

Dhamani is one which shows *Spandan* and carries *Rasa Raktadi Drava Dhatu*. According to *Acharaya Sushruta*, *Annavaahi Dhamani* are two in number which are situated in the entire part of *Amashaya* and *Kshudrantra*. Here *Dhamani* help in the travel of *Anna* towards below, digestion and absorption. *Dalhan* says that these are help in the separation *Rasa*, *Mutra*, *Sweda* and *Purisha* due to absorption of *Ahararasa*. *Ghanekar* correlate the superior mesenteric and celiac arteries to *Annavaahi dhamani*.

According to *Acharya Charak* after digestion the final essence part i.e. *Ahar Rasa* is distributed in the all part of body through *Dhamani* (vessels) present in small intestine. Hence *Annavaahi Dhamani* should be considered as vessels of small intestine involved in the absorption of food. *Sushruta* has mentioned '*Annavahe Dwe*' means the two types of *Annavaaha Srotas*. Further he mentioned *Amashaya* and *Annavaahi Dhamanies* as the *Moola Sthan* of the *Annavaaha Srotas*. *Ghanekar* has given his commentaries on this and accepts the *Annapranali* (esophagus) and *Kshudrantra* specially the *Grahani* as the *Annavaaha Srotas*. He clarifies that it is *Annapranali* which transports *Anna* to *Amashaya* and after that *Kshudrantra* is the place where *Anna* is transported from *Amashaya* and then digested. Hence *Amashaya* is included in *Annavaaha Srotas* and it does not need to be mentioned separately.^[13]

Ghanekar comments on the above reference given by *Sushruta* that "*Moolavidha Lakshanam*" is injury to site of origin, further he comments on the symptoms "*Andhyam Maranam Va*" that these symptoms may be found in *Stabdhatata* (shock) or *Murchha* (syncope) or *Hridbhedha* (heart failure) occurring in trauma on *Amashaya* or *Kshudrantra*. Further in reference of *Sadyopranahar Marma* *Ghanekar* states the reason of syncope that are excessive bleeding due to trauma of *Sira* and *Dhamani* and vasomotor instability as may be found in trauma of Umbilical region. According to him all important organs are present in abdomen and this abdominal cavity is situated behind the *Nabhi*. So death occurs if there is trauma to *Nabhi*. Injury to *Nabhi* causes the rupture of intra-abdominal structures causing excessive bleeding; this in turn causes reflex inhibition of heart, shock and death. When the intestine is pierced by pointed foreign body perforation may occur. Extravasated intestinal contents collect in peritoneal cavity to cause peritonitis which may lead to death.^[14]

Assessment of Parshwa as Moolsthan

In general meaning of "*Parshwa*" is being near. *Parshwa* has become a common word in term of body, where it means that area which is situated on either side of the *Pristhavansha*. On the dorsal side area above the ribs upto *Skandha Pradesh* is called as *Ansa*. In the anterior

aspect i.e. in chest part, area with ribs is called as *Parshwa*. According to *Sushruta* the *Apalapa Marma* are situated below *Amsakuta* in the upper portion of *Parshwa* and covering the space on the pelvic bone and attached to *Parshwa* are *Nitamba Marma*. In this way, *Apalapa Marma* is situated below the *Amsakuta*. *Parshwa* is situated below the *Apalapa* and below the *Parshwa Shronikand* is situated. With all these references, *Parshwa* can be said as the space above *Shronikand* where the portion of *Amashaya* and *Pakvashaya* are situated. It is two in number i. e. *Dakshina Parshwa* and *Vama Parshwa*. According to Gananath Sen body is divided into different regions occupied by different organs. If we consider *Vama Parshwa* as the meaning of *Moola Sthan* of *Annavaha Srotas* then it includes part of *Amashaya*, *Pleeha*, *Vrahadantra* (desending part of large intestine), Left Kidney and Left Ureter also. Where as in general, apart from *Amashaya* there is no direct relation of other organ or parts with the *Moola Sthan* of *Annavah Srotas*.

DISCUSSION

Srotas are related with each-other, when one *Srotas* is vitiated other *Srotas* are also get affected. If *Annavaha Srotas* is vitiated it affect other *Srotas* like *Pranavaha*, *Rasavaha* and *Purishavaha Srotas*. Such the effects are also evidently proved in modern medical science that the digestive system is the site which makes availability of a lot of elements, extrinsic factors, vitamins, energy producing molecules etc, useful in the function of other systems as well as eliminate the waste and toxic materials.

In *Ayurveda*, *annavaha srotas* is a tube like structure formed by flow of *Vayu* which is extended from mouth to anus and included *Annalika*, *Amashaya*, *Kshudrantra* and *Pakvashaya*. While Gastro-intestinal tract is originated from endoderm, which is a first in the form of a flat sheet, is converted into a tube by formation of head, tail and lateral folds of the embryonic disc. This tube is the gut. The gut consists of foregut, midgut and hindgut. Oesophagus, stomach and superior part of duodenum are derived from foregut. Jejunum, ileum and ascending colon are derived from midgut. While left one third of transverse colon, descending and pelvic colon, rectum and anal canal are derived from hindgut.

Srotas is a long tubular structure which extended from mouth to anus includes *Amashaya* and *Pakvashaya* while Gastro-intestinal tract is the same structure which included oesophagus, stomach, small intestine and large intestine. According to *Ayurveda* *Amashaya* is situated between *Nabhi* and *Stana* whereas according to modern medical science stomach is situated mainly in left hypochondrium which similar as mention in *Ayurveda*. *Amashaya* is the

considered as the seat of *Pitta* and *Kapha* specially *Pachaka Pitta* and *Kledaka Kapha*. The different gastric juices and hydrochloric acid secreted by stomach cells can be attributed the same properties of *Pitta* as liquefaction and breakdown of the *Anna*. While hydrochloric acid helps in the transformation of pepsinogen into pepsin and combination of B12 with intrinsic factor. Likewise mucus is secreted by glands of stomach have the properties of *Kledaka Kapha* as lubrication of *Anna* and protect the stomach wall. *Amashaya* is the seat of *Ranjaka Pitta* which transforms *Rasa* into *Rakta* by *Ranjana Karma* whereas according to medical science this is similar to the function of vitamin B12 because of the B12 Transcobalamin-II complex which is finally secreted into the portal circulation from where it is taken by the liver, bone marrow and other cells for the formation of blood.

Anatomically, *Annavaha Srotas* is related with oesophagus, stomach and small intestine because the digestion and absorption takes place till the last part of small intestine. *Moola Sthan* of *Annavaha Srotas* is *Amashaya* and *Vama Parshwa*. In *Vama Parshwa- Amashaya*, *pleeha* and descending part of *vrahadantra* are present. According to medical science stomach is the part of digestive system. It is situated mainly in left hypochondriac region. Other structures present in this region are spleen and descending large intestine which are the parts of *Raktavaha Srotas* and *Purishavaha Srotas* respectively. So, only stomach which is situated in left hypochondrium and it looks like distended on *Vama Parshwa* when it is filled with food.

Amashaya and *Vama Parshwa* have been considered as *Moola Sthan* of *Annavaha Srotas*, *Annavahi Dhamani* also considered by acharya sushrut. *Annavahi Dhamani* plays vital role in the *Prinan Karma* of *Rasadhatu* by carrying *Paramsukshma*, *Tejobhuta* and properly digested *Panchbhautik Ahararasa* to all the parts of the body. *Amashaya* is storage site of *Panchbhautic Anna* and along with *Vama Parshwa* it is basic substratum for all disorders which originated from the respective *Srotas*. Some diseases are directly related to *amashaya* e.g. *Alsaka*, *Visuchika*, *Amlapitta*, *Annadrava Shoola*, *Jwar* etc. Basically physicians conduct *Vaman Karma* with support of *Amashaya*, *Virechan Karma* with support of *Amashaya* and *Pachyamanashaya* and *Basti Karma* with support of *Pakvashaya*. *Amashaya*, *Pachyamanashaya* and *Pakvashaya* are nothing but the sub portion of *Annavaha Srotas*.^[15]

As per *Ayurveda Amashayaanta* is the place of *Sushir Snayu* and function of *Snayu* is to bind and thereby help in weight bearing whereas medical science has described that pyloric sphincter is the last part of the stomach and similar in function, structural hardness and

strength. The binding nature here is clear in the fact that the sphincter is always in a constricted state thereby bearing the weight of the contents present above it. According to *Acharaya Sushruta Annavahi Dhamans* are two in number and situated in the entire part between *Amashaya* and *Pakvashaya*. *Acharya Charak* said that after digestion the final essence part of Aahar i.e. *Aahar Rasa* is distributed in the all part of body through *Dhamanies* (vessels). Hence *Annavahi Dhamanies* should be considered as vessels of small intestine involved in the absorption of food.

CONCLUSION

Anatomical consideration of annavaha srotas and its *Moolsthan* in scientific way will be helpful in diagnosis and management of any disease condition of *Annavaha Srotas*. Disturbance in the physiological co-ordination between these moolasthan of annavaha srotas will be manifested as disease. *Amashaya* is storage site of *Panchbhautic Anna* and along with *Vama Parshwa* it is basic substratum for all disorders which originated from the respective *Srotas*. After digestion, the final essence part of Aahar i.e. *Aahar Rasa* is distributed in the all part of body through *Dhamanies* (vessels). Hence *Annavahi Dhamanies* should be considered as vessels of small intestine involved in the absorption of food. So *Amshaya* can be considered as a Moola Sthan with storage, diagnostic and clinical poit of view whereas *Vama Parshwa* as *Moola Sthan* as clinical stand points and *Annavahi Dhamani* as *Moola Sthan* as conduction point of view.

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