

CONCEPT OF STROTAS – THE DUCT SYSTEM OF OUR BODY

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ABSTRACT

The principle entities ‘*dosha-dhatu-mala*’ form the base of physiological and pathological thinking in Ayurveda. To maintain continuity in life cycle, these bodily elements have to be continuously regenerated, nourished and replenished. The nutrients materials are supplied to the tissues through the process of transudation and at this level they are known as ‘*strotas*’. The internal transport system of the body is represented by *strotas* and has been given a place of fundamental importance in Ayurveda. *Strotas* are defined as hollow channels except *sira* and *dhamani* which spreads in the body and carries specific entities. Thus *strotas* are the channels of the body through which the materials needed for tissue building, nutrition and

other nutrient flow from one corner of the body to the other i.e. the materials are transported through the channels from the place of production to the place of need. Proper functioning of these ‘*strotas*’ is necessary to maintain the health and well-being of an individual. Any obstruction in these body channels causes several diseases in the body. Hence, to understand the disease process and develop a cure for the same, there is a need to study the fundamental concept of *strotas*.

KEYWORDS- *Dosha, dhatu, mala, strotas.*

INTRODUCTION

The living body has two basic components - one of them is *chetana*, which is responsible for giving life. Another component is a figure or shape, which is a body, composed of *panchamahabhuta*.^[1] Various structures produced by *panchamahabhuta* stay together and also maintain co-ordination with each other to keep homeostasis. Akasha is the basic *mahabhuta* from which others evolve. Wherever space exists, it is due to this *mahabhuta*. Body entities bearing properties of *Akasha mahabhuta* are - inter and intramolecular space, different channels, words, ears, etc.^[2] From this we can understand that, there existed a concept of minute and numerous individual living units in the body. Nowadays, such microscopic living units are known as 'cell' (basic structural and functional unit of human body) which can be considered as '*Anustrotas*'. Tissues is a group of structurally and functionally similar cells which work together to form an organ system are considered as '*Sthulastrotas*'.

The word *Strotas* is originated from the Sanskrit root '*Sru*' which means exude, ooze, flow, filter, permeate, etc. *Acharya Charak* defined strotas as "*Sravanaat Srotaamsi*" means from which *sravana* or flow of body substances takes place.^[3] According to *Acharya Charak*, strotas are the structural entities or the channels of circulation (*Murtimanta bhav vishesha*) carrying the *dhatu* i.e. tissue elements or their constituents undergoing transformation (*Parinamamapadhyamana*) to the destination (*Ayanarthen*).^[4] *Strotas* i.e. *Pantha* (passage), *Marga* (tracts), *Sthana*, *Aashaya*, *Niketa* (shelter), *Sanvrutaasanvruta sira* (open or blind passage) are all the synonyms of visible or invisible spaces within body, indicating all the micro and macro circulating channels or hollow spaces or passages in body.^[5]

AIM

To study the concept of *strotas* and its significance in health and disease.

OBJECTIVE

To understand the importance of *strotas* in the management of disease.

MATERIAL AND METHODS

For this study Ayurvedic literature is collected from the classical text of Ayurveda available in Central and Departmental library of Government Ayurved College, Nanded and related websites also surfed.

REVIEW OF LITERATURE

Utpatti of strotas

Utpatti of *strotas* takes place in the intra uterine life. *Vayu mahabhuta* is responsible for generation of *strotas*. With appropriate Agni, when differentiation takes place, *vayu* creates *strotas*.^[6] In this way, during the intrauterine life, due to differentiation of fertilized zygote, many *strotas* are created in which various body entities take their origin.

Strotas Swaroop

Strotas are localized within the space of body and from the root they are distributed throughout the entire body to any terminal structure of body. They are different from *dhamani* and *sira*.^[7] Colour of *strotas* is same as the *Dhatu* (tissue) that they are carrying (*Swadhatusamavarnani*). They have different shape and size viz. Small/minute (*anu*), Large (*sthula*), Round (*vritta*), Long (*dirgha*), Elongated and forming network (*pratana sadrushani*) etc.^[8]

Strotas Sankhya

Strotas are said to be innumerable i.e. there are cluster of *strotas* in the human body.^[9] These *strotas* are of two types *Abhyantara strotas* and *Bahirmukha strotas*.^[10] Out of these innumerable *strotas*, *Charakacharya* has described 13 main *abhyantara strotas* in the body. Three *strotas* connect the body to the external environment, seven *strotas* are associated with the seven *dhatu* or tissue and three *strotas* regulate the elimination of metabolic waste products.^[11]

- *Pranavaha strotas* – the channels for breathing.
- *Annavaha strotas* – the channels transporting solid and liquid foods.
- *Udanvaha strotas* – the channels transporting water.
- *Rasavaha strotas* – the channels carrying plasma and lymph.
- *Raktavaha strotas* – the channels carrying blood cells and specifically hemoglobin.
- *Mansavaha strotas* – the channels carrying muscle nutrients wastes.
- *Medovaha strotas* – supplying the various adipose tissues.
- *Asthivaha strotas* – the channels bring nutrients to the bones and transporting wastes.
- *Majjavaha strotas* – the channels supplying the bone marrow and nerves including brain.
- *Sukravaha strotas* – the channels carrying sperm and ova and supplying nutrients to them.
- *Purishavaha strotas* – the channels which carry faeces.
- *Mutravaha strotas* – the channels which carry urine.

- *Swedvaha strotas* – the channels which carry sweat.

Strotas Mulasthanas

Strotomula is the 'area of origin and its impact' (*Mulam iti Prabhawasthanam*), from where the *strotas* or circulating channels arises.^[12] This part regulates & controls the all activities or functions of the particular *strotas*.

Samanya Strotodushti Hetu

Improper dietary habits and lifestyle leads to the vitiation of *dosha* which further contaminates the *dhatu* and this in turn contaminates the *strotas* since *dhatu*'s are carried by the *strotas*.^[13]

Strotodushti Lakshana^[14]

1. ***Atipravrutti*** (Excessive output): The term *Atipravrutti*, means excessive flow, refers to the excessive production or excessive discharge of the body fluid or increased functioning of the organ. For example - excessive urinary output in diabetes mellitus (*Prameha*), excessive loose motion in diarrhoea or cholera (*Atisar/ Visuchika*), excessive blood loss in menorrhagia (*Rakta Pradara*), etc
2. ***Sanga*** (stasis/ obstruction): *Sanga* means obstruction/retention or holding up, refers to the obstruction to the flow of the body fluids. For example - urine flow obstruction due to calculi or tumour (*Mutrasanga*), stasis of faecal material due to intestinal obstruction or gastroparesis (*Malasanga*), bile flow obstruction in intrahepatic or extrahepatic cholestasis (*Ruddhpath kamala*), etc.
3. ***Siragranthi*** (Obstructive growth in channels): *Siragranthi* means dilatation of veins causing obstruction to normal flow through *strotas* and the plaque or thrombus in the channel. For example - thrombus in blood vessels causing blood flow obstruction (Infarction).
4. ***Vimarga gamana*** (Retrograde movement): Due to some pathology of *Strotas*, there is the flow of fluid in the affected area through alternative channels i.e. reversal of the flow of the body fluids. For example - reversal of the flow of urine due to calculus obstruction causing hydronephrosis, vomiting of faecal material in intestinal obstruction, etc.

Concept of Strotovaigunya

Strotas perform function of the transmission of materials from one side to the other. The nutrient substances which nourish the *dhatu* undergo *paka* by the *ushma (agni)* of *dhatu*. This kind of *agnivyapara* and *paka* takes place at the level of *dhatuvaha strotas*. The *dushti* or

impairment of agni may lead to *khavaigunya* or *strotovaigunya* i.e. impairment of the function integrity of the *strotas*. It causes its inability to perform its normal functions. The *dosha* get vitiated and they interact with *dushya* of the affected region. This phenomenon is called as *dosha-dushya sammurchana*. At the site of interaction the process of disease initiates. According to *Sushruta Samhita*, this process in detail explained under the heading of *Shatkriyakala*.^[15] In which *chaya*, *prokopa*, *prasara* and *sthanasanshraya*, relate to accumulation, excitation, spread and initiation of symptoms of diseases. This fourth stage of *Shatkriyaka* is due to *khavaigunya* or *strotovaigunya*. Thus, all pathological lesions -acute or chronic, have their beginning at the level of *strotas*.

DISCUSSION

Strotas is a processing unit in which function of biotransformation occurs, for example, *dhatu utpatti* from previous *dhatu poshak ansha* into next *dhatu*. Manifestation of a disease in the body as a result of the defective *strotas* favouring the *dosha-dushya sammurchhana*. Now, we know the factors causing *strotodushti*, the best method is to prevent factors responsible for *strotodushti*. So, 'Prevention is better than cure'. *Nidana parivarjana* is the method by which '*swasthasya swasthya*' is maintained, which can play a key role in maintenance of homeostasis.

CONCLUSION

The disease diagnosis, as per the Ayurvedic pathology, is based on the malfunctioning of any of the three *dosha* i.e *Vata*, *Pitta*, and *Kapha*. When any one of these *dosha* creates a spillover effect in the human body, it can spread to another through circulation. The channels of circulation may get obstructed by the aggravated *dosha* and create hindrance in the fluid transportation. Clinically the disease symptoms begin to appear at the stage of *Srotovaigunya*. The complete management of the disease from its root can be done by treating the vitiated *Dosha* present in the *mulasthanas* based on the symptoms seen. Hence, by thoroughly understanding the concept of *strotas* in relation to body channels, a physician can take an accurate decision with respect to the treatment & prognosis of a disease

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