

## A REVIEW ARTICLE ON PUREESHA SROTAS WITH SPECIAL REFERENCE TO ITS APPLIED ANATOMY

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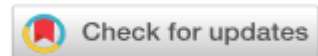
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## ABSTRACT

Ayurveda considers “*Sroto ayam hi purusha*”, that is the human body is made up of different types of channels for the transportation of *anna, jala, dosha, dhatu and mala*. *Srotas* are structurally similar to the *dhatu* that they carry inside. *Acharya Charak* has explained 13 types of *srotas* & their *mool sthana* whereas *Acharya Sushruta* considered 11 pairs of *Srotas*. *Purishvaha srotas* is one among these *srotas* that is carrying channel of *pureesha* or faecal matter of the body. *Mool Sthana* of *Purishvaha srotas* according to *acharya Charak* is *Pakvashaya* and *Sthula Guda* and according to *acharya Sushruta*, it is *Pakvashaya* and *Guda*. In modern science, these *srotas* can be compared with the different parts of the large intestine structurally as well as functionally. So, the disruption in *Purishvaha srotas* causes altered bowel habits, pain abdomen, distention of the abdomen etc. I hereby highlight the anatomical defects that can occur in the *mool sthana* of *Purishvaha srotas* along with its *dushti Lakshana*.

**Keywords:** *Srotas, Purishvaha, mool sthana, Pakvashaya, Guda, dushti lakshana, large intestine*

## INTRODUCTION

*Srotas* are the transport channels within the body concerned with carrying essential elements from the area of their production to different organs and tissues from where it is metabolised, secreted or excreted.

*Acharya Charak* said, “*Sarvanata Srotansi*” means the structures through which slow and regular movement of other elements take place<sup>1</sup>. According to *acharya Chakrapani*, the inner body channels through

which transport of *poshak dhatu* take place are called *srotas*. Acharya Sushruta explained *srotas* as extremely fine passages inside the body through which transport of *rasadi dhatu* takes place<sup>2</sup>. There are 13 types of *srotas* according to acharya Charaka and 11 types according to acharya Sushruta<sup>3,4</sup>. These are the synonyms of *srotas*- *sira*, *dhamni*, *Rasayani*, *Rasavahini*, *Nadi*, *pantha*, *marga*, *sharirachhidarani*, *sthana*, *aashaya*, *niketa* etc<sup>5</sup>. *Srotas* resemble the *dhatu* they are carrying inside in terms of shape, size and colour. So, the *aahar* and *vihar* opposite to *dhatu* *guna* cause *srotas dushti*<sup>6</sup>. The sign and symptoms of *srotas dushti* are- *Atipravriti* (Increased flow), *Sanga* (obstruction to the flow), *Siranam granthi* (appearance of nodules), *Vimargagamana* (diversion to the path of flow)<sup>7</sup>. *Pureehavaha srotas* is one among these *srotas* given by both acharya Charaka and Sushruta. *Moolasthan* of *Purishvaha srotas* according to acharya Charaka is *Pakvashaya* and *Sthula Guda* and according to acharya Sushruta, it is *Pakvashaya* & *Guda*<sup>8,9</sup>. *Pureehavaha srotas* is the transport channel of *mala* in the body which is one of the important elements of the living body as we know “*Dosh dhatu mala moolam hi shariram*”<sup>10</sup>. In modern anatomy, we can correlate *Purishvaha srotas* with different parts of the large intestine. These organs are mainly concerned with the storage, absorption, lubrication and excretion of matter reaching from the small intestine. Any anatomical defect inside these organs leads to disturbance in bowel habits, pain abdomen, bleeding, distension of abdomen, painful defecation which is similar to that of *Purishvaha srotas dushti Lakshna*.

#### AIM AND OBJECTIVES:

- To review literature related to *Pureehavaha srotas*
- To study applied anatomy of different parts of the large intestine.
- To correlate the applied anatomy of the large intestine with *Pureehavaha srotas dushti*

**METHODOLOGY:** Literature related to *Purishvaha srotas* will be explored from different *ayurvedic* classics. Anatomy of caecum, colon, rectum, anal canal and disease's part will be explored from books of anatomy, pathology and surgery.

## DISCUSSION

*Srotas* are the micro or macro anatomical structures through which transport of *dosha*, *dhatu* or *mala* from one part of the body to other takes place. Any deformity in these channels affects the transport of bodily elements which they are carrying inside. ***Pureehavaha srotas***: It is concerned with the transportation of *mala*. *Mool Sthana* of *Purishvaha srotas* according to acharya Charak is *Pakvashaya* and *Sthula Guda* and according to acharya Sushruta, it is *Pakvashaya* and *Guda*. *Pakvashaya*: *Pakvashaya* is considered as a *Kosthanga* by Acharya charaka and as *aashaya* by Acharya sushruta. The anatomical position of *Pakvashaya* is given below the umbilicus that is “*Pakvashaya nabhiradha*”. *Guda*: According to Acharya Sushruta, it is the terminal part of *Sthoolantra*. It contains three *gudavalis* placed at one & half *angulas* distance to each other. These are *prahavini*, *visarjini* and *sanvirani*<sup>11</sup>. *Guda* is again divided into *Gudoshtha* (Anus), *Gudanalika* (Anal canal) and *Sthula Guda* (Rectum). *Pureehavaha srotas* gets vitiated in emaciated persons by suppression of defaecation urge, eating without hunger or by consuming a large quantity of food<sup>12</sup>.

#### Disorders of *Purishvaha srotas dushti*:

- ***Alaska/Vilambika*** - Obstruction to the flow of undigested food due to decreased *agni* or *kapha* and *vata dosha*. This undigested food is not able to excrete through the anus or vomit through the mouth.
- ***Atisara*** – Increased flow of watery stools through the anus.
- ***Vibandha*** – Due to suppression of the defecation urge for a long time or excess absorption by *vata* and *pitta*, *mala* gets hard and is difficult to defecate.
- ***Udavrata*** – Obstruction to the flow of *vayu* due to suppression of defecation urge leads to opposite movement of *vayu* towards mouth along with faecal matter.
- ***Arsha*** - Formation of *mansa Keela* in the pathway of anal canal causing its obstruction and leading to severe pain.

- **Bhagandar** – Discontinuity in *bhaga*, *basti* and *guda* region. It is a very painful condition and can cause bleeding during defecation. In *Apakva*

*vastha*, it is called *pidika* and in *pakva vastha*, it is called *Bhagandar*.

**Table 1:** Sign and symptoms of their *dushti Lakshna* and *viddha lakshana* are:

According to Acharya Charka ( <i>Dushti Lakshna</i> ) <sup>13</sup>	According to Acharya Sushruta ( <i>Vidhha Lakshna</i> ) <sup>14</sup>
Voiding small quantity of stools with difficulty ( <i>kricchena alpalpaam</i> )	Flatulence ( <i>anaha</i> )
Large quantity stools ( <i>atibahulam</i> )	Foul smell during defecation ( <i>durgandha</i> )
Defecation with sound and pain ( <i>sashabda shoolam</i> )	Nodules in the intestine ( <i>granthita antrata</i> )
Voiding watery stools or constipated stools ( <i>Atidravam atigrathitam</i> )	

In modern science, we can correlate the *mool sthana* of *Purishvaha srotas* to different parts of the large intestine. In this, caecum and colon can be correlated to *Pakvashaya* and rectum, anal canal to *guda*.

**Large Intestine:** It extends from ileocecal junction to the anus. It is about 1.5m long and is divided into caecum, ascending colon, descending colon, transverse colon, rectum and anal canal. In the angle between caecum and the terminal part of ileum, there is a narrow diverticulum called vermiform appendix<sup>15</sup>. Ascending colon and descending colon are fixed structures while caecum, transverse colon and sigmoid colon are mobile. There are four layers of the colon from the inner to the outer side that are- mucosa, submucosa, muscularis propria and serosa. Despite these four layers, the wall of the colon is thin and can undergo distension in obstruction<sup>16</sup>.

**Functions of large intestine<sup>17</sup>-**

- Absorption of water content, sodium, potassium and bile salts.
- Secretion of K<sup>+</sup> and Cl<sup>-</sup>
- Four types of motilities take place within the colon that is propulsive, retro pulsive, mass peristalsis and gastrocolic reflex.
- Recycling of various nutrients takes place in the colon.
- The sigmoid colon is the reservoir of faecal matter
- Rectum being sensitive to distension, the passage of faeces into rectum causes the urge to defecate.
- Anal canal allows the passage of faeces outside by allowing its expansion

**Applied anatomy of the large intestine:**

- ❖ **Inflammatory bowel disease:** It includes two idiopathic bowel diseases that are crohn's disease and ulcerative colitis. Crohn's disease is a chronic ulcerative disease characterised by transmural, non-caseating granulomatous inflammation affecting the terminal ileum and colon. Ulcerative colitis can be acute or chronic affecting chiefly the mucosa and submucosa of the rectum and descending colon. Abdominal pain, bloating and diarrhoea are the common symptoms. It can cause complications like mal-absorption, fistula formation, strictures formation and even development of malignancy<sup>18</sup>.
- ❖ **Tumours of the large intestine-** Benign tumours are usually referred to as polyp which means elevation from the surface. The incidence of polyp converting to malignancy increases when it is more than 1cm, multiple or flat. Carcinoma of the colon is the second most common carcinoma in the western world next to lung cancer. More than 95% are adenocarcinoma. It is firm or hard, irregular and with or without fixity. Clinical features include bleeding per rectum, pain abdomen, alteration in bowel habits and intestinal obstruction<sup>19</sup>.
- ❖ **Diverticular diseases-** Mucosa of colon herniates through the circular muscle fibres at weak points where blood vessels penetrate the colonic wall. Since it is acquired, it lacks the muscle coat, is thin and more prone to infections and perforations. The diseases are more common in the western

population wherein diet is very poor in fibres because of refining of sugar and flour. Clinical features include abdominal distension, heaviness, flatulence, pain, tenderness, bleeding per rectum and even mass can be felt in left iliac fossa<sup>20</sup>.

- ❖ **Faecal fistula:** Abnormal communication between two epithelialized structures is called a fistula. Faecal fistula can be colovesical, colovaginal, colocutaneous and coloentero. It can develop in postoperative patients and patients who complains of feculent discharge from wound or drainage sites. Some patients may develop features of septic shock due to infection. It is treated by controlling the infection at first and then resuturing<sup>21</sup>.
- ❖ **Colonic strictures:** Narrowing of the colon as a result of malignancy, tuberculosis, inflammatory bowel disease, diverticulum, radiation or endometriomas. Clinical features are progressive constipation, change in bowel habits, bleeding per rectum<sup>22</sup>.
- ❖ **Rectal prolapse:** Protrusion of mucous membrane or the entire rectum outside the anal verge. This condition is common in children and elderly patients. It can follow an attack of whooping cough due to excessive straining or an attack of diarrhoea resulting in loss of fat in ischioanal fossae<sup>23</sup>.
- ❖ **Haemorrhoids/Piles:** These are the varicosities of haemorrhoidal veins. Internal piles are due to dilation of superior haemorrhoidal plexus covered over by mucous membrane. External piles involve inferior haemorrhoidal plexus covered over my skin. More common in elderly and pregnant women due to increased venous pressure<sup>24</sup>.
- ❖ Another common disease is an anal fistula, anal fissures, pilonidal sinus, anal incontinence etc.

## CONCLUSION

*Srotas* are the transport pathways in the living body concerned with the transport of *dosha*, *dhatu* or *mala*. Among these, *Purishvaha srotas* is the channel for the transport of *pureesh* or faecal matter. The *moolsthana* of these *srotas* is *pakvashaya*, *sthulaguda* and *guda*

which can be correlated with caecum, colon, rectum and anal canal of the gastrointestinal tract structurally as well as functionally. Any anatomical defect in *Pureeshvaha srotas* due to different diseases causes vitiation of its function and result in *srotas dushti*. We can conclude the disorders of large intestine (*Pureeshvaha Srotas*) under the four main *Srotodushiti Lakshna*:

- **Atipravriti** - IBS, Ulcerative colitis, Crohn's disease - *Atisara*
- **Sanga** - carcinoma, polyp, strictures, diverticular diseases - *Alasaka, Vibandha*
- **Siranama granthi** - Haemorrhoids, any nodular growth- *Arsha*
- **Vimargagamna** - faecal fistula, anal fistula- *Bhagandra, Udavrata*

All the above-mentioned disorders ultimately lead to disturbed functioning of the large intestine causing signs and symptoms similar to *pureeshvaha srotas dushti* and *vidhha lakshana*. Main clinical features are pain abdomen, flatulence, alteration in bowel habits, constipation, tenderness, heaviness etc.

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