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Sharir Kriyatmak aspect of Grahani

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ABSTRACT

Ayurveda aims at preservation of health and curing of the disease. *Ayurveda* emphasizes more on the normal condition of *Jatharagni* (digestive fire), that is why it has been mentioned as "Rogaha Sarvepi Mandagni." The food undergoes metabolic transformation by *Jatharagni* and results in maintenance of the body tissue elements by their growth and repair processes. According to *Charaka*, *Jatharagni* is the leader of all the factors concern with digestion in the body of all living beings. *Charaka* also states the seat of *Agni* is also known as 'Grahani' because it receives and retains the food. Further, the main function of *Grahani* is to support *Pachak Pitta* which is required for digestion of food, which is brought to this part on the way to *Pakwashaya*. *Grahani* not only helps in digestion and metabolism but also take care of separation of *Sara* and *Kitta*. Any impairment of *Agni* will impart the integrity of *Grahani*. *Grahani Roga* is one of the very commonly seen diseases in our society, may be because of perverted food habits, socioeconomically condition, modern lifestyle and mental state of human beings. The aim of this study is to describe the *Grahani* in its *Sharir Kriyatmaka* (physiological) aspect. So, that it will be easy to prepare efficient protocol for diagnosis and treatment of *Grahani Roga*.

Key words: *Grahani*, *Agni*, *Sharir Kriyatmak aspect of Grahani*, *Grahani Roga*.

INTRODUCTION

Grahani is the specialized part of *Mahasrotas*. According to *Sushrut*, organ which is located between *Amashaya* (stomach) and *Pakwashaya* (colon) is called as *Grahani* (small intestine). It is the site of *Pittadhara Kala*, it is considered as the site of *Pachak Pitta* which helps for the *Ahara Pachana*.^[1] *Agni* is located in *Grahani* (small intestine) is called as *Jatharagni*.^[2] *Agni Mahabhuta* is predominantly present in *Pitta Dosha*.^[3]

Grahani and *Agni* are having *Adhara Adheya Sambandha Jatharagni* rules the process of digestion supported by the three *Dosas*.

Laghu Antra (small intestine), is the part where most of the digestion takes place. The part of G.I. tract which is between stomach and large intestine is known as small intestine. Small intestine is *Matrija* organ and is the main site of *Agni*. Small intestine receives indigested food and sends almost digested food into the large intestine.^[4]

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AIMS

To scrutinize the classical texts to find out the *Sharir Kriyatmak* aspect of *Grahani* in *Ayurveda*.

OBJECTIVES

1. Study of *Grahani* according to different Ayurvedic texts.
2. Study the small intestine in its anatomical and physiological aspect.

Ayurvedic Aspect**According to Acharya****Sushrut**

Sixth Pittadhara Kala is situated between Amashaya and Pakwashaya

Charak

It is the part situated above the Nabhi, it is the site of Agni and does Grahana of Anna and it is supported and nourished by the strength of Agni.

Vagbhata

षष्ठीपित्तधरानामपक्रामाशयमध्यस्था।
साहिअंतरग्रेरधिष्ठानतयाआमाशयात्पकाशयोन्मुखअन्नबलेनविधार्य
शोषयतिपचति, पक्वचविमुंचति। दोषाधिष्ठितातुदौर्बल्यादाममेव।
ततोऽसावन्नस्यग्रहणात्पुनर्ग्रहणीसंज्ञा। (अ.सं.शा.5/23)

The sixth Kala is named as Pitta Dhara Kala and it is located in between Pakwashaya (intestine) and Amashaya (stomach). Being the abode of internal fire (digestive activity), it withholds by force, the movement of food material passing from the Amasaya (stomach) into the Pakvasaya (intestines); digests the food by the heat of Pitta, absorbs it and allows the digested food to move further; under the influence of decreased activity of the Doṣas present therein, it allows even undigested food to move further. Hence this is also known Grahani, in view of its (function of) with holding the food. Its strength is from Pitta itself, known also as Agni. Thus, activated by this fire (like activity) it maintains the welfare of the body.^[5]

Grahani as an organ

Grahani is situated between Amashaya (Stomach) and Pakvashaya (intestine) receives and retains the food for digestion. In Grahani, Pittadhra Kala is present.

Grahani is the seat of Agni and situated above the Nabhi (Umbilicus).^[6]

Grahani is small intestine where main digestive juices are secreted from Liver and Pancreas having properties of the Pachakapitta.

Grahani

It is helpful in holding the food and ensures the digestion as it holds (Grahana), it is named as Grahani.

The Grahani is located in the center of the Amashaya and Pakywashaya. The term 'Grahani' is derived from the fact that it takes Anna from the Amashaya. It is also known as Pacchyamanshaya, Laghwantra and Kshudranta.

अग्न्यधिष्ठानमन्नस्यग्रहणात्प्रहणीमता॥(च.चि.19/53)

Grahani is the seat of Jatharagni and it is helpful in holding food and thereby ensures digestion. The Grahani is the main place of Agni. It is in this Grahani that most of the digestive process takes place. Digestive bile produced in the liver and pancreas enters the Grahani through a carrier system and participates in the digestion of nutrients.

Types of Agni

1. Jatharagni : 1 depending upon Dosha Adhikya, Jatharagni divided into 4 type 1) Tikshagni 2) Vishmagagni 3) Mandagni 4) Samagni
2. Dhatwagni : 7
3. Bhutagni : 5

समानोऽग्निसमीपस्थःकोष्ठेचरति सर्वतः।

अन्नंगृहणतिपचतिविवेचयतिमुंचति॥ (अ.ह.सू.12/8)

Samana Vata is located near to Agni. It moves in the Koshtha, Ama-Pakwashaya i.e., alimentary tract and other abdominal viscera, keeps the ingested food particles in the alimentary canal for digestion. After that separates it as the essence and wastes and eliminates the waste product through the Gudamarg (Anus).^[7]

Ahara Parinamkar Bhava

Ushma, Vayu, Kleda, Sneha, Kala, Samyoga.

The factors present in the Sharir which are responsible for the digestion and metabolism of the ingested food are collectively called as Ahara Parinamkar Bhava.

Aharapaka

- Madhura Avasthapaka
- Amla Avasthapaka
- Katu Avasthapaka

Modern Aspect**Digestion**

Definition: Breaking down of large and complex molecule of food into small and simple molecules for the utility of body cell and synthesis of energy.^[8]

Phases

- Ingestion - *Prana Vayu*
- Movement - *Samana Vayu*
- Digestion - *Ushma, Kleda, Sneha* and *Kala*
- Absorption - *Samayoga*
- Excretion - *Apanvayu*

Physiological co-relation of Grahani (Small intestine)

Physiologically it holds the indigested food for the duration of its digestion before the *Kitta* or undigested food residue is propelled into the *Pakwashaya*.

The functional importance of small intestine is digestion and absorption. Maximum absorption of food takes place in small intestine.^[9]

Layer of intestine: Serous, Muscular, Sub mucosa, Mucosa.

First layer: Outer serous layer or outer peritoneal layer made up of tough fibrous tissue which gives protection to intestine.

Second layer: Muscular layer -It is made up of longitudinal and circular fiber. This muscular layer is main responsible layer to the movement like peristalsis.

Third layer: Submucosal layer majority of glands are situated in this layer. Eg. Brunner's gland, simple tubular gland

Gland

Simple tubular gland - directly open into lumen of intestine

- A) Enterochromaffin cell (Argentaffin cell) secret intrinsic factor
- B) Goblet cell- secret mucus
- C) Panth cell - secret cytokines

Brunner's gland - directly opens to duodenum. Secret mucus and trace of enzymes

Fourth layer: Mucous layer - innermost layer It is not a plain layer; it is having many folds which comprises villi and microvilli and this layer gets the rich supply of many lymph vessels.

Succus Entericus

- Secretion from small intestine
- Volume 1800 ml/day
- Highly alkaline in nature
- Composition: water 98.5%, solid 1.5%
- Organic substances - proteolytic, lipolytic, amylolytic
- Other organic - mucus, intrinsic factor, defensins
- Inorganic

Movement of small intestine

- Mixing movement
- Propulsive movement
- Peristalsis in fasting
- Movement of villi

Small intestine composed of 3 segment

- Duodenum - releases bile and pancreatic secretion, active site of digestion
- Jejunum - active site of nutrient absorption
- Ileum - active site if nutrient absorption - water, vitamins, minerals

Function of small intestine

- Mechanical functions - mixing movement of small intestine are help in the mixing of chyme with the digestive juices.
- Secretion - the succuseintericus, interokines, GI hormones (secritin, cholecystokinin)
- Digestion - digest proteins with the help of proteolytic enzyme (peptidases), digest carbohydrate with the help of amylolytic enzymes

(sucrose) and digest fat with help of lypolytic enzymes

- Absorption - the villi and microvilli are increasing the surface area of small intestine the facilitates the absorptive function
- Hemopoetic function - intrinsic factor plays important role in erythropoiesis
- Hydrolytic function - intestinal juice helps in all the enzymatic reactions of digestion

Grahani Roga (Disease)

Grahani Roga is common disease in India and also superimposed over a pre-existing *Agni-Dusti*. There is also *Dushti* of *Kledaka Kapha*, *Pachak Pitta* and *Saman Vayu*. It may also occur as a sequel of other disease like *Atisara* (Diarrhea). *Grahani* is precipitated after *Atisara* (Diarrhea). A person who has been relieved of *Atisara* but it still having *Mandagni*, if he takes injudicious food, it leads to vitiation of *Agni* and then damages the organ *Grahani* and expels digested or Mal-digested substances.^[10]

DISCUSSION

The name *Grahani* is given to that of gastro-intestinal tract of our body where ingested food is supposed to get retained for a longer period for the purpose of getting disintegrated and absorbed. The organ *Grahani* is situated above *Nabhi Pradesh* (umbilical region), which acquires the strength through *Agni*. The main strength of organ *Grahani* is *Pitta* in which *Agni* resides and keeps the living human body healthy and normal. *Pittadhara Kala* is part of digestive system. It is a substratum for the *Agni*. Physiology and pathology of the body is depending on status of *Agni*.

Aharpachana or the digestion of food is the main function of the *Pachaka Pitta*. The *Ahara-Pachana* in *Amapakwashaya* has been described as *Avasthapaka* i.e., the change in the state or form of the food substances. This is the stagewise change where the *Jatharagni* plays an important role on the ingested food particles. As per *Vagbhata Vipaka* is the final *Rasa* (taste) produced by the *Jatharagni* on a substance at the end of digestion. The taste mentioned in *Vipaka* is

that of the end product of digestion of that substance. *Sara-Kitta-Vibhajana* is a process carried out by *Jatharagni* in the *Mahasrotas* and it's also the function of *Grahani*.

Digestive system is frequently exposed to many pathogens and allergens because of the food. Consequently, many diseases are occurring in the *Pittadhara Kala* or *Grahani*. *Grahani* is the most affected part and the *Grahani Roga* can manifest.

The functional importance of small intestine is digestion and absorption. Maximum absorption takes place in small intestine. Diagnostic approach according to Modern Science could be investigating altered gastrointestinal motility and visceral hypersensitivity, post infectious reactivity, brain-gut interactions, alteration in fecal micro flora, bacterial overgrowth, food sensitivity, carbohydrate malabsorption, intestinal inflammation, Low levels of vitamins A, B₁₂, E, D and K Low Sr. Ca, Alb, Folate. Treatment approach according to Ayurveda can be considered with respect to *Dosa-Dusya* Balancing, *Agni Pradipana*, *Amavisha Nirharana*, *Srotas* involved, *Avastha-Pakavichar*, *Bhutagni-Pakavichar*, *Purish Pariksha*, *Vishishtha Lakshana*, *Avasthavichar* and *Mansika* involvement of food takes place in small intestine.

CONCLUSION

Grahani which is disturbed functions of the bowels and intestines. *Grahani* (small intestine) is the seat of *Agni* (digestive fire). Food is held here until it is completely digested by *Agni* (or digestive fire). After the food is completely digested, it then passes on to the next part of the digestive tract for absorption, but if the *Agni* is weak, then the food is not completely digested and passes on in a half digested form. Considering all these parameters related to *Grahani* as a organ *Dosha*, *Dusya*, *Agni*, *Ama*, *Srotas*, *Avasthapaka*, *Vipaka* and *Bhutagni Paka* in proper way in *Garahani Roga* is necessary to proceed for successful treatment.

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