

AN ANALYTICAL STUDY OF GRAHANI IN RELATION TO DIGESTIVE PHYSIOLOGY AND AGNI

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1. ABSTRACT

Ayurveda emphasizes the preservation of health and the management of disease through the maintenance of internal physiological balance. Among its fundamental principles, *Agni* is regarded as the cornerstone of life, as it governs the processes of digestion, transformation, and assimilation of food. Classical texts state that disturbance of *Agni* is the root cause of many pathological conditions. The proper functioning of *Jatharagni* ensures the conversion of ingested food into bioavailable nutrients, thereby supporting the nourishment, growth, and maintenance of body tissues. *Grahani* is described as the principal seat of *Agni* and represents a vital functional unit of the gastrointestinal system. It retains ingested food until digestion is completed, facilitates the action of *Pachaka Pitta*, and enables the separation of *Sara* from *Kitta*. The functional efficiency of *Grahani* is closely dependent on the state of *Agni*;

its impairment leads to defective digestion and manifests clinically as *Grahani Roga*. In the present era, such disorders are increasingly prevalent due to irregular dietary habits, sedentary lifestyle, and psychological stress. The present study aims to analyze the physiological (*Sharira Kriyatmaka*) aspects of *Grahani* through a critical review of classical *Ayurvedic* literature and to correlate these concepts with modern digestive physiology. This integrative approach provides a conceptual framework for improving diagnostic understanding and developing effective management strategies for *Grahani*-related disorders, with emphasis on restoration of *Agni* and maintenance of gastrointestinal homeostasis.

KEYWORDS: *Grahani, Agni, Jatharagni, Pachaka Pitta, Digestive Physiology, Small Intestine, Aharapachana, Sara-Kitta Vibhajana, Grahani Roga.*

2. INTRODUCTION

Grahani is described in *Ayurveda* as a specialized and functionally significant component of the *Mahasrotas* (gastrointestinal tract), playing a central role in the processes of digestion and metabolism. According to *Acharya Sushruta*, *Grahani* is situated between the *Amashaya* and *Pakwashaya*, and can be anatomically correlated with the small intestine. It is identified as the site of *Pittadhara Kala* and serves as the principal seat of *Pachaka Pitta*, which is primarily responsible for the digestion and transformation of ingested food (*Ahara Pachana*)

The concept of *Agni* is fundamental in *Ayurveda*, representing the biological fire that governs digestion, metabolism, and assimilation. Among its various forms, *Jatharagni* is considered the chief digestive force and is localized in *Grahani*. The predominance of the *Agni Mahabhuta* within *Pitta Dosha* highlights its critical contribution to digestive physiology. *Grahani* and *Agni* maintain an intimate *Adhara–Adheya Sambandha* (structural-functional interrelationship), wherein *Grahani* acts as the supporting structure while *Agni* performs the functional activity of digestion. This process is further regulated by the harmonious interaction of the three

Doshas, particularly *Samana Vata*, which facilitates retention, processing, and movement of food within the gastrointestinal tract. Functionally, *Grahani* is responsible for holding the ingested food until digestion is adequately completed, ensuring proper enzymatic action, and enabling the separation of nutritive essence (*Sara*) from waste products (*Kitta*). The efficiency of these processes depends on the integrity of *Agni*; any disturbance leads to impaired digestion and forms the basis of various gastrointestinal disorders.

From a modern physiological viewpoint, *Grahani* closely corresponds to the small intestine (*Laghu Antra*), which is the primary site for digestion and absorption. It receives partially digested food from the stomach, facilitates further enzymatic breakdown with the help of intestinal, pancreatic, and biliary secretions, and absorbs nutrients through specialized structures such as villi and microvilli. The remaining undigested material is then propelled towards the large intestine. Thus, both *Ayurvedic* and modern perspectives highlight the small intestine as a crucial organ in maintaining nutritional and metabolic homeostasis.^[1-4]

3. AIM

To analyze the physiological (*Sharira Kriyatmaka*) aspects of *Grahani* in relation to *Agni* and to correlate these concepts with modern digestive physiology.

4. OBJECTIVES

1. To study the concept of *Grahani* as described in classical *Ayurvedic* texts.
2. To understand the role of *Agni*, particularly *Jatharagni*, in the functioning of *Grahani*.
3. To analyze the physiological functions of *Grahani*, including digestion, absorption, and *Sara–Kitta Vibhajana*.
4. To correlate the *Ayurvedic* concept of *Grahani* with the structure and functions of the small intestine in modern science.
5. To explore the relevance of *Grahani* physiology in understanding the pathogenesis of *Grahani Roga*.

5. CONCEPTUAL & PHYSIOLOGICAL ASPECTS OF GRAHANI

5.1 Ayurvedic Aspect of Grahani

Grahani is described in *Ayurveda* as a crucial functional entity of the *Mahasrotas* (gastrointestinal tract), playing a central role in digestion, absorption, and metabolic transformation. The concept of *Grahani* is not limited to a structural organ but represents a dynamic physiological system governed primarily by *Agni*. Various classical texts provide detailed insights into its location, structure, and function, forming the foundation for understanding digestive physiology in *Ayurveda*.

According to *Acharya Sushruta*, *Grahani* corresponds to the sixth *Pittadhara Kala* and is situated between the *Amashaya* (stomach) and *Pakwashaya* (large intestine). *Acharya Charaka* describes *Grahani* as the organ located above the *Nabhi*, functioning as the seat of *Agni*, where ingested food is retained (*Grahana*) for proper digestion. The strength and functional integrity of *Grahani* are directly dependent upon the state of *Agni*.

षष्ठीपित्तधरानामपक्वामाशयमध्यस्था।

साहिअंतरग्नेरधिष्ठानतयाआमाशयात्पक्वाशयोन्मुखअन्नबलेनविधार्यशोषयतिपचति, पक्वचविमुञ्चति।

दोषाधिष्ठितातुदौर्बल्यादाममेव। ततोऽसावन्नस्यग्रहणात्पुनर्ग्रहणीसंज्ञा।

(अ.सं.शा.5/23)

Acharya Vagbhata elaborates that *Grahani* holds the ingested food until complete digestion occurs, facilitates its transformation through the action of digestive fire, absorbs the

processed nutrients, and subsequently allows the digested material to pass forward. In conditions of weakened *Agni* (*Mandagni*), *Grahani* fails to retain food adequately, leading to improper digestion and passage of incompletely processed food.

Functionally, *Grahani* is the site of *Pachaka Pitta* and *Pittadhara Kala*, where the primary digestive processes occur. It ensures proper retention, digestion, and transformation of food, followed by the separation of *Sara* (nutritive essence) and *Kitta* (waste). The term *Grahani* itself is derived from its ability to “hold” or “retain” food, highlighting its essential role in maintaining digestive efficiency.^[5]

5.1.1 *Grahani* as the Seat of *Agni*

अग्न्यधिष्ठानमन्नस्यग्रहणात्ग्रहणीमता॥

(च.चि. 19 /53)

Grahani is considered the principal site of *Jatharagni*, which governs the entire process of digestion and metabolism. The activity of *Pachaka Pitta* within *Grahani* can be correlated with digestive secretions such as bile and pancreatic enzymes, which aid in the breakdown and assimilation of nutrients. Thus, *Grahani* serves as the functional platform where *Agni* expresses its physiological activity.^[6]

5.1.2 Classification of *Agni*

Agni is broadly classified into three categories.

- ***Jatharagni*** – the primary digestive fire, further classified into four types: *Tikshnagni*, *Mandagni*, *Vishmagni*, and *Samagni*, depending on *Dosha* predominance.
- ***Dhatvagni*** – seven types, responsible for tissue-level metabolism and nourishment.
- ***Bhutagni*** – five types, responsible for elemental transformation of nutrients.

These different forms of *Agni* collectively regulate digestion, absorption, and metabolic processes at various levels.

5.1.3 Role of *Samana Vata*

समानोऽग्निसमीपस्थःकोष्ठेचरतिसर्वतः।

अन्नंगृह्णतिपचतिविवेचयतिमुञ्चति ॥

(अ.ह.सू. 12/8)

Samana Vata, situated in proximity to *Agni*, plays a vital role in coordinating digestive functions. It regulates the movement and retention of food within the gastrointestinal tract, supports the process of digestion, facilitates the separation of nutrients and waste, and ensures

proper elimination through the lower pathways. Its balanced functioning is essential for maintaining the efficiency of *Grahani*.^[7]

5.1.4 Ahara Parinamkara Bhava

The transformation of food (*Ahara Parinama*) is governed by six essential factors:

- *Ushma* (digestive heat)
- *Vayu* (movement)
- *Kleda* (moisture)
- *Sneha* (unctuousness)
- *Kala* (time factor)
- *Samyoga* (proper combination)

These factors collectively influence the digestion, absorption, and assimilation of food.

5.1.5 Stages of Digestion (*Avasthapaka*)

The process of digestion occurs in three sequential stages:

- ***Madhura Avasthapaka*** – initial stage of digestion
- ***Amla Avasthapaka*** – intermediate stage
- ***Katu Avasthapaka*** – final stage

These stages represent the progressive transformation of food under the influence of *Agni*.

5.2 Modern Aspect

5.2.1 Concept of Digestion

Digestion is the physiological process through which complex food substances are broken down into simpler, absorbable forms that can be utilized for energy production, growth, and tissue repair. This process involves coordinated mechanical, chemical, and enzymatic activities within the gastrointestinal tract.^[8]

5.2.2 Phases of Digestion

From an integrative perspective, the phases of digestion can be correlated with *Ayurvedic* concepts as follows.

- Ingestion – regulated by *Prana Vayu*
- Movement – governed by *Samana Vata*
- Digestion – facilitated by *Ushma*, *Kleda*, *Sneha*, and *Kala*
- Absorption – achieved through proper integration (*Samyoga*)
- Excretion – controlled by *Apana Vayu*

5.2.3 Physiological Correlation of *Grahani*

Grahani can be closely correlated with the small intestine, which is the principal site for digestion and absorption. It retains partially digested food until the digestive processes are completed and then propels the residual waste toward the large intestine. This functional similarity highlights the relevance of *Grahani* in understanding modern gastrointestinal physiology.^[9]

5.2.4 Structure of the Small Intestine

The wall of the small intestine is composed of four distinct layers.

1. **Serosa** – protective outer covering
2. **Muscular layer** – facilitates peristalsis through circular and longitudinal fibers
3. **Submucosa** – contains glands such as Brunner's glands
4. **Mucosa** – innermost layer with villi and microvilli, increasing surface area for absorption. Specialized cells include goblet cells (mucus secretion), enterochromaffin cells, and Paneth cells, which contribute to digestive and protective functions.

5.2.5 Intestinal Secretions (Succus Entericus)

The small intestine secretes an alkaline fluid known as succus entericus, which contains digestive enzymes responsible for the breakdown of proteins, carbohydrates, and fats. It also includes mucus, intrinsic factor, and antimicrobial substances that aid in digestion and protection.

5.2.6 Movements of the Small Intestine

- Mixing movements for uniform distribution of chyme
- Propulsive movements (peristalsis) for forward movement
- Fasting movements
- Villi movements aiding absorption

5.2.7 Segments and Functional Specialization

- **Duodenum** – major site for enzymatic digestion with bile and pancreatic secretions
- **Jejunum** – primary site for nutrient absorption
- **Ileum** – absorption of vitamins, minerals, and water

5.2.8 Functional Importance

The small intestine performs multiple functions, including:

- Mechanical mixing
- Enzymatic digestion
- Nutrient absorption
- Hormonal regulation
- Support of hematopoiesis through intrinsic factor

5.2.9 *Grahani Roga*^[10]

Grahani Roga is a significant disorder described in *Ayurveda*, primarily resulting from impairment of *Agni*, especially *Jatharagni*. The condition is closely associated with the vitiation of *Pachaka Pitta*, *Kledaka Kapha*, and *Samana Vata*, which collectively regulate digestion, absorption, and movement of food within the gastrointestinal tract. Disturbance in these factors leads to derangement of digestive processes and functional integrity of *Grahani*.

One of the important etiological factors is *Mandagni* (diminished digestive fire), which results in incomplete digestion of food and formation of *Ama* (metabolic toxins). This *Ama* further aggravates *Doshas* and impairs the normal functioning of *Grahani*. The condition is often observed as a sequel to *Atisara* (diarrhea), where incomplete restoration of *Agni* leads to chronic digestive disturbances. If an individual resumes improper dietary habits—such as intake of incompatible, heavy, irregular, or untimely food—before complete recovery of digestive strength, it further weakens *Agni* and predisposes to *Grahani Roga*.

Clinically, *Grahani Roga* is characterized by irregular bowel habits, passage of partially digested food, alternating diarrhea and constipation, abdominal discomfort, heaviness, anorexia, and general weakness. The retention capacity of *Grahani* is compromised, leading to either premature expulsion of undigested food or improper processing within the gastrointestinal tract.

From a modern perspective, *Grahani Roga* can be correlated with functional gastrointestinal disorders such as malabsorption syndrome, irritable bowel syndrome (IBS), and chronic enteritis, where there is altered intestinal motility, impaired digestion, and defective absorption. Factors such as stress, dietary irregularities, and microbial imbalance further contribute to its pathogenesis.

Thus, *Grahani Roga* represents a condition where disturbed *Agni* leads to functional impairment of the digestive system. Management primarily focuses on restoration of *Agni*

(*Agnideepana*), digestion of *Ama* (*Ama Pachana*), correction of *Dosha* imbalance, and regulation of diet and lifestyle to re-establish normal digestive physiology.

6. DISCUSSION

Grahani, as described in *Ayurveda*, represents a crucial functional entity of the gastrointestinal system where ingested food is retained for adequate digestion, transformation, and absorption. Situated above the *Nabhi Pradesh*, it derives its functional strength from *Agni*, particularly *Jatharagni*, which governs the entire process of digestion and metabolism. The integrity of *Grahani* is therefore directly dependent on the status of *Agni*, and any disturbance in *Agni* leads to impairment in both physiological and pathological processes within the body.

The role of *Pachaka Pitta* in *Grahani* is central to *Aharapachana* (digestion of food). The process of digestion is described in *Ayurveda* through the concept of *Avasthapaka*, which denotes the sequential transformation of food at different stages within the gastrointestinal tract. During this process, *Jatharagni* plays a pivotal role in converting ingested food into assimilable forms. The final outcome of digestion, known as *Vipaka*, reflects the ultimate metabolic transformation of nutrients. Furthermore, the separation of *Sara* (nutritive essence) and *Kitta* (waste products), termed *Sara–Kitta Vibhajana*, is an essential function attributed to *Grahani*, highlighting its role in both digestion and absorption.

From a pathological perspective, the gastrointestinal system is continuously exposed to dietary irregularities, environmental factors, and microbial agents, making *Grahani* particularly susceptible to dysfunction. Impairment of *Agni* leads to the formation of *Ama*, which further disrupts *Dosha* equilibrium and compromises digestive efficiency. This establishes the pathophysiological basis for *Grahani Roga*, wherein defective digestion and absorption manifest clinically.

Correlation with modern physiology reveals that the functions attributed to *Grahani* closely resemble those of the small intestine, which is the principal site for digestion and nutrient absorption. Modern diagnostic approaches in such conditions include evaluation of altered gastrointestinal motility, visceral hypersensitivity, post-infectious changes, gut–brain interactions, microbial imbalance, and malabsorption states. Deficiencies of essential nutrients such as vitamins A, B12, D, and minerals further indicate impaired absorptive function.

The management of *Grahani*-related disorders in *Ayurveda* emphasizes restoration of *Agni* (*Agnideepana*), elimination of *Ama* (*Ama Pachana*), and correction of *Dosha* imbalance. A comprehensive approach includes consideration of *Dosha–Dushya* involvement, *Srotas* status, stages of digestion (*Avastha* and *Vipaka*), and clinical evaluation such as *Purisha Pariksha*. Additionally, dietary regulation and attention to psychological factors play a significant role in restoring normal digestive function.

Thus, an integrative understanding of *Grahani*, combining classical *Ayurvedic* concepts with modern physiological insights, provides a rational framework for better diagnosis and effective management of digestive disorders.

7. CONCLUSION

Grahani represents an important functional unit of the digestive system and is considered the principal seat of *Agni* (digestive fire) in *Ayurveda*. It plays a vital role in holding food until proper digestion occurs and ensures the transformation of food into absorbable nutrients. When *Agni* functions efficiently, digestion and absorption take place normally, supporting overall health. However, when *Agni* becomes weak (*Mandagni*), digestion remains incomplete, leading to the passage of partially digested food and the development of digestive disorders such as *Grahani Roga*. The proper functioning of *Grahani* depends on multiple factors, including *Dosha*, *Dushya*, *Agni*, *Ama*, *Srotas*, and the stages of digestion such as *Avasthapaka* and *Vipaka*. Disturbance in any of these components can affect digestive efficiency and lead to disease. Therefore, a comprehensive understanding of these factors is essential for accurate diagnosis and effective management. An integrative approach that focuses on restoring *Agni*, correcting *Dosha* imbalance, and maintaining proper dietary and lifestyle practices is crucial for the successful management of *Grahani*-related disorders. Thus, understanding *Grahani* from both *Ayurvedic* and modern perspectives provides a strong foundation for improving digestive health and preventing disease.

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