STUDY OF PITTADHARA KALA DUSHTI AND MALABSORPTION (TROPICAL SPURE) W.R.T SANGRAHANI

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ABSTRACT
Ayurveda has emerged as a new hope for the world in terms of its usefulness in treating various diseases with minimal adverse effects. It is important that the system is explained to the modern world in the language and the terminology they understand. Kalas are the important physical and functional components of the body. They form a protective coating for the ashayas and also form a boundary between the ashayas and dhatus. By producing the mucous, they buffer and protect the organs like stomach and intestine from the corrosive action of acids and other digestive enzymes. The pittadhara kala not only serves as a protective lining membrane but also as a secreting and absorbing structure. These are nothing but srotamsi which compose kala. Now a day many peoples are suffering from malabsorption of nutrients. Pittadhara kala dushti may leads to grahani rog and it produce malabsorption in the body. This article is an effort to explain the pittadhara kala and applied physiology explained in Ayurvedic texts in view of modern day knowledge.

KEYWORDS: Pittadhara kala, Kala, Grahani, Malabsorption.

INTRODUCTION
Definition of Kala
By definition it is clear that the Kalas are the layers or membranes present at the junction of the dhatus and their aashayas.
They form a screen or partition between the tissue and the organ which is made by that tissue. According to Ayurveda, the ashaya’s or visceral organs are made up of dhatus.

The layers or membranes which separate the muscle tissue from the cavity of the organ are called Kala.\(^2\)

‘The kleda or moisture or liquid portion present in between dhatu and ashaya is processed by the heat of the body and converts it into kala’.\(^1\)

According to Vagbhata

‘The kleda or moisture present in between the dhatu and its aashaya, reacting to its own heat gets converted into Kala. It is called Kala because it is made up of small quantity of the essence of dhatu or dhatu rasa which oozes from the dhatu just like the liquid oozes when a fresh wood is cut. It is enveloped by snaayu (muscle fibers, ligaments and tendons) and Jarayu (membrane). There are total seven membranes.

Pittadhara Kala

The 6\(^{th}\) Kala is called as Pittadhara Kala (the membranes or layers which hold Pitta). It receives and retains the semi-digested food until it is totally digested. It is after the action of Pitta secreted by Pittadhara Kala that the food is totally digested.

The Pittadhara Kala receives the semi-digested food propelled from Amashaya (stomach). It distinctly holds the food till the food is totally digested and also digests all the four types (ashita – chewable, khadita – swallowed, peeta – drinks, leedha – licked) of foods.

Pittadhara Kala is located in between Pakwashaya and Amashaya. It receives the semi-digested food from the amashaya, digests it completely and later pushes the digested food towards Pakwashaya (large intestine) where it is contained until faeces are formed.

Pittadhara Kala bears the agni or metabolic fire in it. This agni digests the food received from the stomach. Agni becomes the main factor of digestion and absorption and hence this place is considered as Grahani.\(^3\)

Grahani is a term given for small intestine mainly duodenum or first part of the small intestine. This is the site which receives the semi-digested food from stomach, holds it for a time and digests it properly.
Functionally, the stomach and duodenum, their inner layers and all the secretions including acids and digestive enzymes (gastric juice, hydrochloric acid, bile, pancreatic juice etc) draining into these organs should be considered as agni as Pittadhara Kala.

**Modern view**
The cell membranes separating each and every cell are also considered as KalA.

The absorptive surface of the small intestine is greatly enhanced by the numerous folds and finger-like projections called villi and microvilli. It has been estimated that given all the folds, villi and microvilli, the total absorptive surface of the small intestine is about the size of a half of a basketball court.!

Absorption of nutrients takes place all along the intestine, but each segment of the intestine absorbs only certain nutrients. Most of vitamins, calcium are absorbed in upper part and B12 is absorbed in ileum. Amino acids is absorbed faster in duodenum and jejunum and slower in ileum. Most of the fat is absorbed in upper part of the small intestine.\(^7\)

The pittadhara kala not only serves as a protective lining membrane but also as a secreting and absorbing structure. The pittadara kala is roughened by a series of folds. Microscopically these folds are millions of finger like projections known as villis. The villus is lined by a single layer of epithelial cells and contains a small dhamani, a sira and a rasavahini.

The epithelial cell that like the serous cavities provide a smooth moist surface. In most case they compose the semi permeable membrane through which the digested food or undigested food pass to and from the course of their secretory and excretory activities. These are nothing but srotamsi which compose kala.

**Malabsorption (tropical sprue)**
Symptoms of tropical sprue may include any of the following:

- abdominal pain,
- diarrhea which may get worse on a high-fat diet,
- excessive gas
- indigestion,
- irritability of muscle,
- cramps,
- numbness
paleness,
- weight loss

There are many symptoms associated with malabsorption. Weight loss, diarrhea, greasy stools (due to high fat content), abdominal bloating and gas are suggestive of malabsorption.

Vitamin and mineral deficiencies resulting from malabsorption may cause glossitis (sore tongue), cheilosis (a fissuring and dry scaling of the surface of the lips and angles of the mouth) and anemia.

Chronic diarrhea is often the first symptom prompting one to seek medical evaluation, although diarrhea need not be present for one to have malabsorption. Steatorrhea, or fatty stools, is indicative of malabsorption. Stools will be frothy, foul smelling, and a ring of oil may be left on the toilet water.

These all symptoms are similar with the symptoms of grahani roga.

**Grahani nidan**

Grahani nidan in astang sangrahamidan sthana 8 adhyay shlok no21-29 shows symptoms similar to the malabsorption.

Patient of grahani passes stool, which are sometime binding, sometimes very loose with foul smell. The quantity of stools is more than the quantity of food he consumes. Due to improper absorption of food, he becomes weak and suffers from various diseases due to low immunity. There is presence of thirst anorexia, abnormal taste in mouth, excessive salivation, feeling of darkness, oedema on hand and feet, pain in bone and joints, vomiting and fever.\(^4\)

It is due to ama and vata and is difficult to cure symptoms. Gurgling sounds in the intestine, malaise, weakness, elimination of watery, cold, solid, fatty, inadequately processed, copious, sticky feces accompanied with pain in the waist appearing once in 15,30 or 10 day intervals or even daily, pronounced during day and subsiding by night and continuing for long time confirms occurrence of sangrha grahnani.\(^5\)

**CONCLUSION**

Considering above references, we can compare, the pittadhara kala dushti results in malabsorption that the tropical spure which symptoms are similar with the sangrahamani rog describe in Ayurveda.
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