

Anatomical Study of Pittadharakala W.S.R. For Grahani**Pooja Jadhav¹**¹Associate Professor, Dept. of Rachna Sharir,
Mahaveer college of Ayurvedic Science Sundra, Rajnandgaon (C.G.)**Abstract**

Kala sharir gives us information about the important membranes and layers of the body which take part in many important components of body, kalas are the limiting membrane between dhatu and ashaya. They also produce and hold the dhatus. They specific kalas are located at specific sites, One of them is Pittadhara kala. It is situated situated between pakwamashya. As per the modern science pittadhara kala can be compared as mucous membrane of small intestine.

Thus a precise knowledge of kala is important for physicians to make a diagnosis at the right time & also to know if the disease is at the level of kala.

Keyword: Kala, Pittadhara Kala

Introduction

Ancient Indian literature like Veda, Puran Samhita etc, are rich with various knowledge regarding human health, behavior, social conduct etc. Acharya Sushrut described kaliaan anatomical sense in Garbhvyakaran chapter, He states kala is a thin membrane which separates dhatu from its ashya. As on cutting wood its pith is observed, likewise dhatus is found dissecting the musculature, the kala are covered by snayu spread as jarayu and smeared with shleshma. The sixth kala is known as pittadhara kala.

Discussion

Concept of pittadhara kala is explained by Acharya Sushrut. We find references about pttadhara kala in Ashtanga hridaya and Ashtanga samgraha and shrangdhar samhita. All Acharya's mentioned seven types of kala. Describing the structure of pittadhara kala Acharya Sushrut has stated that it holds four kinds of food (i.e. Asita, khadir, leedh, peeta) propelled from amashaya on its way to pakwashya. All types of food brought into koshtha of man becomes jirna and undergoing shoshan in proper time through heating agency of pitta. Thus amashaya and pakwashya appear to be upper and lower limit of pittadhara kala respectively. According to vagbhatt, being the abode of internal fire (digestive activity), it with holds by force, the

movement of food material passing from amashaya (stomach) into the pakwashya (intestine), digest food by heat of pitta, absorbs it and allows the digested food to move further. Pittadhara kala can be compared as mucous membrane of small intestine.

The wall of the small intestine is made up of four layers:

- MUCOSA
- SUBMUCOSA
- MUSCLELAYER
- SEROSA/ADVENTITIA

The serosal and Muscular layers correspond exactly to the general structure of alimentary canal. The submucosa is also typical except in the duodenum, where it contains Brunner's glands.

According to modern science following structures are responsible for digestion and absorption.

Relevant features responsible for digestion: (MUCOSA)

1. (a) Major duodenal papilla
 - 8-10 cm distal to phlorus
 - Hepatopancreatic ampulla open into this papilla
- (b) Minor duodenal papilla
 - 6-8 cm distal to pylorus
 - Opening of accessory pancreatic duct.
2. The presence of numerous depression or crypts that invade the lamina propria.

Crypts of Lieberkuhn (intestinal gland) Tubular invagination of epithelium into Lamina propria. In between the two intestinal villi, the epithelium is invaginated in lamina propria to form intestinal glands (crypts of lieberkuhn). These glands are lined by columnar cells, goblet cells, Paneth cells and enteroendocrine cells. They are really simple tubular glands distributed over the entire mucous membrane of jejunum and ileum. They open by small circular apertures on the surface of mucous membrane between the villi. They secrete digestive enzymes and mucous. The epithelial cells deep in the crypts show a high level of mitotic activity. The proliferated cells gradually move towards the surface, to be shed from the tips of the villi. In this way, the complete epithelial lining of the intestine is replaced every two to four days.

Enterocyte: Absorbing water & electrolytes.

Globlet cell: Secreting mucus.

- (a) Secretin- pancreatic juice secretion.
- (b) CCK- bile juice secretion.

Paneth cell: Secrete lysosomal enzyme.

Relevant features responsible for absorption:

- The Considerable length of small intestine.
- Circular folds (Plicae circularis) : To slow the passage of contents and to increase surface area of mucosa.
- VILLI
 - a. Villi are finger like projection.
 - b. Connective tissue core contains numerous blood capillaries forming a plexus.
 - c. The endothelium lining the capillaries is fenestrated thus allowing rapid absorption of nutrients into the blood.
- MICROVILLI

On each of the villi, there are even smaller folds that stick out like fingers called Microvilli. Increase the surface area.

Submucosa

The submucosa is almost completely occupied by highly branched, tubuloacinar duodenal glands (Brunner's glands). The acini of Duodenal glands secrete alkaline mucous with high

concentration of bicarbonates that protects the duodenal mucosa with form acid secreted by stomach.

Conclusion

The length of small intestine is more as compared to large intestine and circular folds (plicae circularis) increases absorptive surface area, villi are large and numerous in the duodenum and jejunum, but are smaller and fewer in the ileum. Intestinal glands are really simple tubular glands distributed over the entire mucous membrane of jejunum and ileum. The maximum digestion takes place upto dudeno- jejuna junction. So we conclude that due to above reasons i.e. greater length of small intestine, circular folds and intestinal glands. Location of pittadhara kala is same as these structures are lying in small intestine (mucous membrane), and perform functions digestion and absorption.

Reference

- 1) Ghanekar Dr. Bhaskar Govind, Ayurveda Rahunya Deepika Hindi Commentary on Sushrut Samhita Sharir Sthanam. New Delhi: Mehar Chand Lachmandas Publication; 1998.
- 2) Gupt Kaviraj Atridev. Astanga Samgraha. Varanasi: Chaukhambha Orientalia,2012
- 3) Gupt Kaviraj Atridev Astanga Hrdayam. Varanasi: Chaukhambha Orientalia,2012
- 4) Garg Krishna. B D Chaurasia's Human Anatomy. 6th
- 5) Singh I.B. Textbook of Human Anatomy. 7th Edition New Delhi: Jaypee Brother's Medical Publishers Ltd; 2014,