iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 12 **Issue:** IX **Month of publication:** September 2024

DOI: https://doi.org/10.22214/ijraset.2024.64118

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 12 Issue IX Sep 2024- Available at www.ijraset.com

Anatomical Study of *Pittadhara Kala*

Dr. Asha Gochar[1], Dr. Mukesh Kumar[2], Dr. Saurabh Chandra Rohila[3], Dr. Sanju[4], Dr. Rakesh Kumar Sharma[5]
[1, 2, 3, 4]*MD Scholar (3rd Year), P.G. Department of Rachana Sharir, Postgraduate Institute of Ayurveda, Jodhpur (Rajasthan)*
[5]*Associate Professor, P.G. Department of Rachana Sharir, Postgraduate Institute of Ayurveda, Jodhpur (Rajasthan)*

Abstract: ***The Acharyas used their divine powers of observation, understanding and reasoning to explain Kala in the absence of sophisticated modern technology. Kala Sharir provides us with details about the body's major layers and membranes. The restricting barrier separating Dhatu and Ashaya is called a Kala. Additionally, they create and possess the Dhatus.***
Their roles inside the body provide insight into them. Pittadhara Kala is one of the particular Kalas and they are all situated at particular locations. Situated in the middle of Pakwamashaya. This study's goal and objectives were to compare Pittadhara Kala's functional features. Brihatrayi and the accessible commentary on it provided all the pertinent information. We also search different websites for research articles. A conclusion was reached once all the references had been gathered and examined. The study's conclusion is that Pittadhara Kala is comparable to the small intestine's mucous membrane in modern science. Therefore, it is crucial to have a thorough understanding of Kala for doctors to diagnose patients at the appropriate time and determine whether the illness is at the Kala level.
Keywords: Dhatu, Kala, Pittadhara Kala, Duodenum

I. INTRODUCTION

The *Garbhvyakaran* chapter of *Shaarir Sthana* contains an anatomical description of *Kala* by *Acharya Sushruta*. He says that *Kala* is the thin membrane that divides *Dhatu* from it's *Ashaya*. *Dhatus* is formed as a result of *Kala's* function. These are tiny components that change *Dhaturasa* into the corresponding *Dhatus* by their actions.Without the use of sophisticated contemporary technology, the *Acharyas* used their divine powers of observation, understanding and reasoning to explain *Kala*.
According to *Aacharya Dalhan*, the *Kala* can be functionally correlated with cells or formative factors and structurally correlated with fascia, septum, fibrous membrane, mucous membrane and serous membrane.
Similar to how wood's pith is noticed while chopping it, *Dhatus* is observed dissecting the muscles and *Snayu* is smeared with *Shleshma* on the *Kala.*

II. AIM & OBJECTIVES

1) To compile references to the idea of *Pittadhara Kala* from various *Ayuredic* writings.
2) To compile the references from many contemporary books about digestion and the small intestine.
3) To compare Pittadhara Kala's practical features.

III. MATERIAL & METHOD

The references for this conceptual study have been gathered from a variety of accessible *Ayurvedic* classic texts, including *Sushruta Samhita*, *Charak Samhita*, *Vagbhat Samhita* and others remarks regarding it. Modern textbooks are also used to compile literature. A search for research articles about *Pittadhara Kala*, the small intestine and digestion is also conducted on several websites. Every aspect has been examined, with an effort made to get the most optimal conclusions feasible.

IV. REVIEW OF LITERATURE

The *"Dhatwashayanter Maryada"* that divides *Dhatu* and *Ashaya* is *Kala.*
The cavity known as the *Ashaya* provides the *Dosha, Dhatu* and *Mala* with *Ashraya.* The three fundamental building blocks of *Kala* creation are *Snayu, Jarayu* and *Shleshma*; these three structures are comparable to the fiber, serous and mucous layers, respectively. The tissue's *Kala* are the stem's pith.
According to a description of *Kala*, the *Dhatus* of the body may be seen like the duramen of a piece of wood or stem comes to light through cutting into it becomes visible by taking away the ensuing layers. A large supply of *Snayus* covered in *Shleshma* and washed in *Jarayu* is given to these *Kalas*.
Kleda, which is located in the interior of *Ashaya* and is transformed into *Pakwa* by *Dhatwagni* and *Kala* by *Acharaya Vagbhata*, is said to be present.

It may also divide the muscle, covering the organ's outside and interior layers. It facilitates a variety of bodily functions, including lubrication, absorption, holding, moving and supporting. According to Samhita, there are seven Kalas.

A. Pittadhara Kala

The sixth number, *Pittadhara Kala*, is thought to be situated between *Amashaya* and *Pakvashaya*, which is associated with the small intestine.Not only does *Grahani* house the *Chaturviddha Anna* that was launched from the *Amashaya* and on its path to the *Pakvashaya*, but it also facilitates full digestion, absorption, and assimilation through the secretion of *Pachaka Pitta* by *Pittadhara Kala*. In contemporary anatomy, the *Amashaya* is the region that comes before the small intestine or the stomach. *Grahani* is a *Pachakagni Sthana* that aids in food digestion.

Following food digestion, *Ahar* is transformed into *Aharras*, which is subsequently taken up by the *Pittadhara Kala* to support the seven *Dhatus* in their ongoing feeding. While discussing *Sarpdansha Chikitsa*, *Acharya Sushruta* also identified *Pittadhara Kala* as *Majjadhara Kala* in *Kalpasthana.*

V. DISCUSSION

Acharya Sushruta explains the concept of *Pittadhara Kala*. References to *Pittadhara Kala* can also be found in the *Sharangdhar Samhita* and *Ashtanga Samgraha*.All seven forms of *Kala* were mentioned by *Acharyas.* According to a description of *Pittadhara Kala Acharya's Sushruta*, it has four different types of food that are transported from *Amashaya* to *Pakwashaya.Pitta's* heating agency causes all food introduced into *Koshtha* of man to become *Jirnra* and undergo correct *Shoshan;* so, *Amashaya* and *Pakvashaya* seem to be the highest and lower limits of *Pittadhara Kala*, respectively.*Acharya Vagbhatt* claims that because the stomach is the seat of internal fire, it uses force to prevent food from moving from the *Amashaya* or stomach, into the *Pakvashaya.*intestines, which use the heat from the *Pitta* to break down food, absorb it, and permit it to pass through the digestive process. *Pittadhara Kala* is comparable to the mucosal lining of the small intestine.

Four layers make up the small intestine wall:

1) mucosal layer
2) The submucosa Layer
3) Muscular
4) Adventitia, or Serosa

The following structures are in charge of digestion and absorption, according to current anatomy. important characteristics in charge of digesting.Six

A. Mucosa

1) The major duodenal papilla, also known as the hepatopancreatic ampulla, is located 8–10 cm away from the pyloric orifice.
2) The minor duodenal papilla, located 6–8 cm distal to the pseudoorifice, is the site of the opening of the accessory pancreatic duct.
3) The existence of intestinal glands, or Liebkuhn crypts, which penetrate the lamina propria. These glands have columnar globlet cells lining them.

Paneth cells, enteroendocrine cells, and cells They were dispersed throughout the ileum and jejunum's mucous membrane.

B. Functional Anatomy

The glands mentioned above secrete mucus and digesting enzymes. Deep within the crypts, epithelial cells exhibit significant levels of mitotic activity.

villi. In this manner, every two to four days, the entire intestinal epithelium is replaced.

- Enterocyte: it takes in electrolytes and water.
- Goblet cells secrete mucus.
- Endocrine Cell:
- 1. Pancreatic Juice Secretion via Secretin
- 2-secretion of bile juice (CCK).
- Paneth cells release an enzyme called lysosomal.

C. *Relevant Features Responsible for Absorption*

The length of the small intestine, which offers a high surface area.

- Villi, which resemble fingers and have a huge blood supply in the form of a blood capillary plexus, which facilitates the quick absorption of nutrients into the blood.
- Plicae circularis to expand mucosal surface area.
- microvilli The tiny folds called microvilli aid in increasing the surface area.

D. SUBMUCOSA

It has an abundance of duodenal, or Brunner's, glands.

They release bicarbonate-containing alkaline mucus, counteracting the stomach's acidic secretions. the serosal sand the muscle layers precisely match the alimentary canal's overall structure.

VI. CONCLUSION

The duodenum is where the greatest digestion occurs, and its supporting features include the following. More surface area is provided by the small intestine's length. in order to absorb. The jejunum and ileum's whole mucosa is covered in a dispersed pattern of intestinal glands. The duodenum and jejunum have a considerable number of villi.

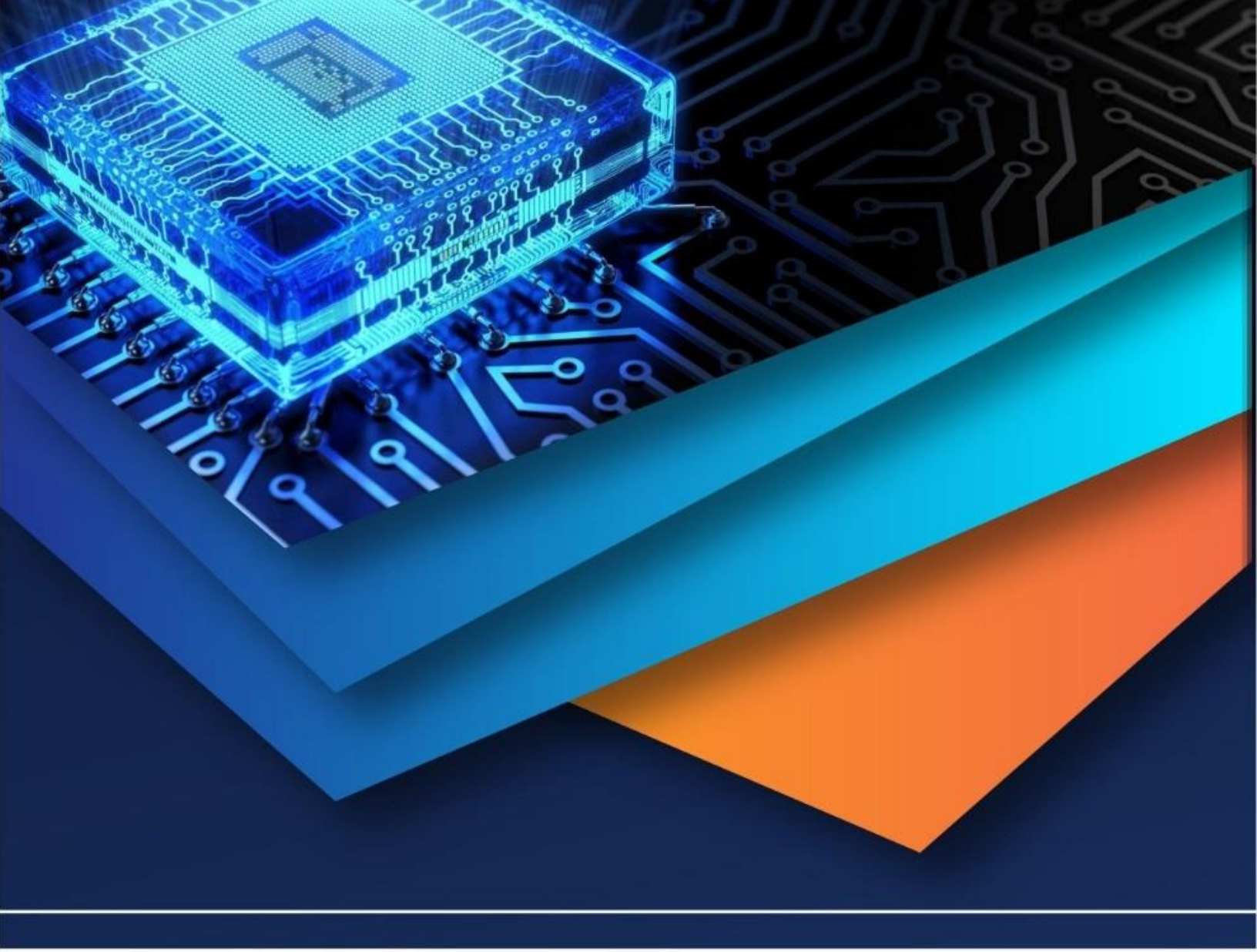
Therefore, we draw the conclusion that the longer, circular folds Moreover, the primary features of the small intestine are its intestinal glands, which aid in the basic physiologic processes of digestion and absorption. *Pitta*, allowing for simple correlation with *Pittadhara Kala.*

conclusion is that the small intestine's primary features are its longer length, circular folds, and intestinal glands. These features aid in digestion and absorption, which is *Pachak Pitta's* primary function, and allow us to readily associate with *Pittadhara Kala.*

REFERENCES

[1] Sushruta Samhita Dalhana Acharya Virachita Nibhandhasangraha Vyakhya Vaidya Yadavaji Trikamaji Acharya Choukhambha Surabharati Prakashana Reprint Edition2012. Page No: 354, Sharir Sthana Chapter 4, Verse No 4, 5.
[2] Sushruta Samhita Dalhana Acharya Virachita Nibhandhasangraha Vyakhya Vaidya Yadavaji Trikamaji Acharya Choukhambha Surabharati Prakashana Reprint Edition2012., Sharir Sthana Chapter 4, Verse No 17.
[3] Sushruta Samhita Dalhana Acharya Virachita Nibhandhasangraha Vyakhya Vaidya Yadavaji Trikamaji Acharya Choukhambha Surabharati Prakashana Reprint Edition2012., Uttertantra Ch.Apter No. 40
[4] Sushrut Samhita Sharir Sthana, Dr. B. G. Ghanekar, Ayurved Rahasya Deepika.
[5] Meharchand Lachmandas Publication- 1998 Gupt Kaviraj Atridev Ashtang Hrdayam.Varanasi: Chaukhambha Orientalia; 2014
[6] B. D. Chaurasia's Human Anatomy.6th Edition. New Delhi: CBS Publishers;2013 Sushruta, Sutrasthana 21, Vrana Prashnam Adhyayam, Verse No 10, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.88-89.
[7] Charak, Chikitsashtana 15, Grahani Dosha Chikitsam, Verse No 56-57, Tripathi Bramhanand, Charak Samhita Part 2, Revised Edition, Varanasi, Chaukhamba Surabharati Prakashan, 2002, Page.561
[8] Sushruta, Sharirasthana 4, Garbha Vyakaranam Shariram, Verse No13, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 1994, Page.30.
[9] Sushruta, Sharirasthana 4, Garbha Vyakaranam Shariram, Verse No12, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.30.
[10] Sushruta, Sutrasthan 15, Dosha Dhatu Mala Kshaya Vruddhi Vidyaniyam, Verse No7, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.57.
[11] Shri Dalhanacharya, Kalpasthana 4, Sarpadashtha Visha Adhyayam, Verse No45, Jadavaji Trikamaji Acharaya, Sushruta Samhita With Nibandhsangarha Commentary, Reprint Edition, Varanasi, Chaukhamba Surbharti Prakashana,1994, Page.470.
[12] Sushruta, Kalpasthana 4, Sarpadashtha Visha Adhyayam, Verse No39, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.43.
[13] Guyton A.C. Hall J.E., chapter 64, unit XII, secretory function of alimentary tract, Textbook of Medical physiology, Ninth Edition, Bangalore, Prism Book Publishers, 1996, page. 830.
[14] Sembulingm K. & Sembulingm P., chapter 41, section 4, Digestive system, Essentials of Medical Physiology, Sixth Edition, New Delhi, Jaypee Brothers Medical publishers, 2013, page 264.
[15] Sushruta, Sutrasthana 21, Vrana Prashnam Adhyayam, Verse No 10, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.88-89.
[16] Charak, Chikitsashtana 15, Grahani Dosha Chikitsam, Verse No 56-57, Tripathi Bramhanand, Charak Samhita Part 2, Revised Edition, Varanasi, Chaukhamba Surabharati Prakashan, 2002, Page.561
[17] Sushruta, Sharirasthana 4, Garbha Vyakaranam Shariram, Verse No13, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 1994, Page.30.

[18] Sushruta, Sharirasthana 4, Garbha Vyakaranam Shariram, Verse No12, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.30.
[19] Sushruta, Sutrasthan 15, Dosha Dhatu Mala Kshaya Vruddhi Vidyaniyam, Verse No7, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.57.
[20] Shri Dalhanacharya, Kalpasthana 4, Sarpadashtha Visha Adhyayam, Verse No45, Jadavaji Trikamaji Acharaya, Sushruta Samhita With Nibandhsangarha Commentary, Reprint Edition, Varanasi, Chaukhamba Surbharti Prakashana,1994, Page.470.
[21] Sushruta, Kalpasthana 4, Sarpadashtha Visha Adhyayam, Verse No39, Shastri Ambikadutta, Sushruta Samhita Part I, Reprint Edition, Varanasi, Chaukhamba Prakashan, 2005, Page.43
[22] Guyton A.C. Hall J.E., chapter 64, unit XII, secretory function of alimentary tract, Textbook of Medical physiology, Ninth Edition, Bangalore, Prism Book Publishers, 1996, page. 830.
[23] Sembulingm K. & Sembulingm P., chapter 41, section 4, Digestive system, Essentials of Medical Physiology, Sixth Edition, New Delhi, Jaypee Brothers Medical publishers, 2013



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY