

Review of *Kalasharir* with co-relation to membranes

Sonam Yadav^{*1}, Ashok Londhe²

1. PG Scholar
2. Professor, Phone No.:+919969190070; E-mail: : rajvaidyaashok@gmail.com

Dept. of Sharir Rachana, Dr. D. Y. Patil College of Ayurveda and Research Institute,
 Nerul, Navimumbai, Maharashtra, India. 400706.

***Corresponding author:** sonam2893@gmail.com

Abstract:

Anatomy is science that deal with the different structures of human body like bones, joints, *Twacha*, different sense organs and *kala* etc. Relevant knowledge of anatomy is very important for better understanding of diseases and their cure in form of medicinal or surgical process. *Kala* is unique *ayurvedic* concept explained by *Acharaya sushruta* in *sushrut samhita*. *Acharya Sushruta* while explaining the detailed development of body parts in *Garbhavyakaran Sharir* Chapter of *Sharir sthan* mentioned the concepts of *Kala*. There are total Seven *kala* in body. *Kala* is limiting membrane or layers in our body situated between *Dhatu* and *Aashaya*. These are Extremely minute particles and invisible to naked eye, similar to cell. They can be understood by their functions in the body. The word *kala* stand for the property or a quality so these are pecial membranes in the body which are having important role in performing body physiology. There are many layers

or membranes in the body which form an envelope over the organs. The cell membranes separating each cell from each other can be considered as *Kala*.

Keywords:

cell membrane, membranes, *sushrut samhita*, *Acharya Sushruta*, *Dhatu*, *Aashaya*, *Garbhavyakaran sharir*.

Introduction:

Kala sharir (limiting membrane)
 Aetiology of the word **klāa** From –
Concised pali- english dictionary By –
 A.P Buddhatadut Mahatre, Motilala Banasidas publisher, Reprint 1989

Kala – A sweat low sound Indisent & confused noise.

klāa: ¹ k: ¹ jala and la:- A small part of anything or any single part or portion of whole. All *kala* are included directly or indriectly in *mruduavaya*. **There are 64 *kala***. The term for the seven substrata of the elements orb *dhatu* of human body (viz flesh, blood, fat, phlegm, urine, bile & semen but according to Hema chandra, rasa ‘chyle’, *asthi* bone & *majja* ‘marrow’

take place of phlegm urine & bile). There are 3015 *kala* or atoms in every one of six dhatu, not counting the rasa. Therefore in all (8090) elements of the gross or material world sarvad an embryo shortly after conception.

- A designation of the 3 constituent parts of sacrifice.
- A menstrual discharge, any practical art any mechanical or fine art. (64 are enumerated in the saivantantra)

64 *kala* from monier's

Ayurveda Sharir has many terminologies which are fairly explained at many places in ancient compendia. Especially many terminologies like Kandara, Kurcha, Mansarajju, Sanghat, Simanta are described in fifth chapter of Sushruta Samhita. *Kala* is one of prime topic described by Sushruta in Sharirsthana. There are many basic principles of Ayurved like Tridosha, Panchamahabhut, Dravyaguna etc. used by Ayurvedist for management of diseases. But till date there is no such any clinical significance of *Kala* sharir is established.

Aim and Objectives:

To find out the applicability of *Kalasharir* described in Ayurved and co-relate with membranes in the light of contemporary science.

Material and method:

From various Classical texts i.e Charaka Samhita, Sushruta Samhita, Ashtanga Sangraha and Ashtanga Hridaya and Evidence based resources as journals, books and data based information from various modern texts.

***Kala* and membranes:**

Kala are seven in number & have been identified in ayurveda as limiting membranes. They are the inner linings of various body viscera's. According to sushrut, *kala* are sheath like structures enveloped by shleshma or mucoid material. They have also been recognised as inner most limiting lining of dhatu (tissue) & ashaya (body cavities).

In modern anatomical language they can be termed as mucous membranes. The epithelium are those lining or layers of cells which cover the tissue surfaces & all body cavities opening on it. Embryologically epithelium are derived from all 3 germinal cells. They are mesothelial cell layers lining internal cavities & proximal parts of urogenital tract lining. They line pericardial, pleural & peritoneal cavities endothelium's are those linings which line blood vessels & lymphatics.

As said above sushrut has identified seven such linings or layers which are known as *kala*.

Mamsadhara *kala*

The first *kala* is mamsa dhara *kala* with in this *kala* the network of sira (veins), snayu (fibrous tissue) & dhamani (arteries) are spread. Sushrut has compared the anatomical picture of mamsadhara *kala* with that of lotus stalk present in muddy water.

Raktadhara *kala*:

The second *kala* is raktadhara *kala*. This *kala* can be easily compared with endothelial lining of arteries, veins & lymphatics. The rakta dhara *kala* allows

blood to flow in blood vessels. Blood circulates with in arteries & veins. Therefore all the blood manufacturing & hemopotic organs like yakrit (liver) & pleeha (spleen) are the seat of rakta dhara *kala*. The word sira has been used here for artery & vein both.

Medodhara kala:

Third *kala* is known as medodhara *kala*. This *kala* supports the meda. Meda is found in anu asthi means short bones where as mija is found in sthool asthi or the large & heavy bones. Vasa (fat) is found in udergrah (abdomen) or peritoneal sac. Peritoneal sac is termed as vapavaham (omentum). Sushrut has indentified majja of 2 types as follows:

- Sarakta meda (red bone marrow).
- Peeta meda (yellow marrow) found in long bones.

The red bone marrow is found in short bones. The explanation concerning sarakta & peet meda has been defined by Sushrut. Sushrut has explained the term sneha which oozes out through manspeshi (muscles) as vasa (fat).

Shleshmadhara kala

The fourth *kala* is known as shleshmadharakala present in synovial membrane. This is present practically in all sandhi (joints).it has been compared like the lubricant in a wheel axis which permits the (wheel) to move round in free manner. Similarly the shleshma with the shleshmadhara *kala* allow all bony joints to move freely on their respective axis. This synovial membrane is lubricated with synovial fluid.

Purishdhara kala: The fifth *kala* is known as purishdhara *kala*. This *kala* is

meant for supporting fecal matter. It is found in pakvashaya (large intestine & rectum) with abdominal cavity. This *kala* extend from yakruit (Hepatic) to whole large intestine or the remaining segments of large intestine which surround other viscera's of abdomen purishdhara *kala* (membrane) has property of separating , kitta & sara bhag right from unduk (caecum). This version of purishdhara *kala* is appropriate because most part of food is absorbed in small intestine & fecal matter processed from caecum upwards & passes through ascending colon , hepatic flexure, transverse colon, descending colon, rectum & sigmoid colon. Thus location of purishdhara *kala* in pakvashaya is very precise.

Pittadhara kala:

The sixth *kala* is pittadhara *kala* it holds all the four type of food intaken by mouth into intestine. The four kinds are asit, khadit (swallowed), peeta (dru-liquid) & leedh (licked) & brought into kshudrantra (small intestine). Here it is digested & absorbed in due course of time by the action of pitta (digestive enzymes). Here the term koshttha is used in reference to laghu antra (small intestine) where pittadhara *kala* is labelled as 'grahani' sushrut has also described pittadhara *kala* in following.

Shurkdhara kala:

The last & 7th *kala* identified by sushrut is shurkadhara *kala*.c according to sushrut this has its functional present all over the body in all living being , according to sushrut it is found within whole body . Here the term shukra is used for oestrogenic & androgenic

hormones which circulate in the entire body. They have been compared with sugar cane juice or ghrīt (ghee) present in milk. As these items can not be independently identified in milk or can be similarly shurka in form of hormone cannot be isolated from body, but its action can be realised by every living being.

Observations and results:

There are seven *kalas* present in the body and these are the limiting membranes between Dhatus and Aashyas. *Kala* are not only the partitions between the Dhatu and Aashaya but also they possess some properties and perform some activities in the body.

Conclusion

Kala sharir give us important information about membrane & layer of body which take part in many important functions of the body. They also produce & holds the important components of the body like blood, mucus, stools etc. Since the *kala* are the sites of the production & holding many important body elements, the disease also should logically have origin from them or at least show their initial manifestation in the *kala*. Thus a precise knowledge of *kala* is important for the physicians to make a diagnosis at the right time & also to know if the disease at the level of *kala*. According to the Ayur. The disease are formed only when tissues are contaminated or vitiated by doshas. Even before the disease get manifested in the ashay or dhatu they would have damaged the *kalas*. These *kala* give the early signals of an impending disease. (just like one need to open the gate of the compound before reaching the main door

or entering the home). Thus the knowledge of *kala* sharir is important to help in precise diagnosis of disease & also enables the doctors to provide timely treatment.

References:

1. Concised pali English dictionary by A.P. Buddhataadut Mahatre, Motilal banasidas publisher, reprint 1989
2. Sushrut samhita sharir sthan chpt 4 commentator dr.ambikadutt shashtri, Varanasi. Chukhamba, Sanskrit sansthan, 2005.
3. Kaviraj Kunjalal Bhishgratna Sushrut Samhita, Kalpasthan Vol.III, Chowkhamba Sanskrit Series office, Varanasi Edition 4th 2009 Editor – Dr. Laxmidhar Dwivedi,
4. Dr. Kevalkrishna Thakral, Sushrut Samhita, Sharir Sthan Vol.II, Chowkhamba Orientaliya, Varanasi. Reprinted- 2017
5. Acharya priyavat Sharma Charak Samhita of Agnivesh Vol. II, Commentator – Acharya Vidyadhar Shukla, Acharya Ravidatta Tripathi, Chowkhamba Sanskrit Pratishthan, Delhi. Reprinted- 2017, Cha. Chi. 15/16
6. Kaviraj Kunjalal Bhishgratna, Sushrut Samhita, Sharir Sthan Vol.II, Chowkhamba Sanskrit Series office, Varanasi, Reprinted- 2007 Edition 3rd Dr. Laxmidhar Dwivedi Su.
7. Kumar Ashwini W., Critical and Comparative Study on *Kala*

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| <p>Shareer W.S.R. to Mansadhara Kala RGUHS-2004.</p> <p>8. Dr. Sumati Khot ,Basic concept of Kala (membrane), Review article published in IJAAM Vol. 3 issue (2015) .</p> <p>9. Prof. K. R. Srikantha Murthy, Vagbhata's Astang Hridayam Vol. I, Sutra and Sharir Sthan, Chowkhamba Krishnadas Academy Varanasi.</p> <p>10. Yadav Sharma Sushrut Samhita, Sharir Sthan Vol.I Chowkhamba</p> | <p>Surabhi Prakashan, Varanasi 2012 Su. Sha.</p> <p>11. Study of ratadharakala wsr to Atherosclerosis.(research journal of holistic health management ISSN 22454-7832) by yashasvi khobragade, dr sachin khedikar.</p> <p>12. Parshuram shashtri Vidyasagar, Editor Shararngdhar Samhita, Choukhambha Orientalia, Varanasi 2000</p> <p>13. Ayurvedic kriya sharir by Prof. Dr Yogesh Chandra mishra.</p> |
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