

## A REVIEW ARTICLE ON KALA SHARIR &amp; IT'S APPLIED ASPECT

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**ABSTRACT**

Ayurveda has a wide range of ideas on the human body. One of them is the concept of Kala. The term 'Kala' is used in classical texts to indicate a variety of things, including the indistinct, a unit of time, a membrane, etc. Kala refers to Guna or property and indicates its physiological entity. Kala' is the term stated by Acharya Sushruta in relevance of sheath or beholding membrane of internal organs and which is functional in nature. It also forms the structural support of underlying bodily organs. Its anatomical places as per mentioning of Ayurveda classics and its functional peculiarities can enable us to gain an insight over basic physiology of organs – Strotas which can guide in deciding treatment protocol of the affected organs in a disease.

**KEYWORDS:** Kala, Acharya Sushruta, Vagbhata.**INTRODUCTION**

Any Vaidya should have thorough knowledge of Rachna Sharir and is a very essential branch to become a good physician. (Ch. sha. 6/19). While studying the Ayurvedic texts, we find many concepts which are unable to correlate or interpret with modern science such as Tridosha, Dhatus, Malas, Kloma, Marma, Kala etc. To understand these concepts as per Ayurvedic science, we have to read the texts thoroughly along with their commentaries and interpret the Shlokas to conclude them. Kala is one of the concepts which still remain unexplained according to modern science.

Kala is a unique concept explained by Acharya Sushruta in "Garbhavyakarana Sharir" Adhyaya i.e. Embryonic life of fetus in Ayurveda. Concept of Kalas is also found in Sushruta Kalpasthana during the treatment of snakebite which contribute the presence and functioning Kalas till the end of life. Kalas which are minute and invisible, their activity results in production of the several tissues (Dhatus). In our whole lifespan, formation and development of Bhavpadarth as reconstructed and protected beneath these Kalas.

**DEFINITION OF KALA**

dyk% [kyq vfi llr HkofUr /kkrq vk" k; vUrj e;kZnk%A ¼lq-"kk- 4@5½ ;Fkk fg lkj% dk'Bs'kq fN/;ekus'kq n";rs rFkk fg /kkrq% ekals'kq fN/;ekus'kq n";rsAA

LUuk;qfHk% p izfrPNUuku~ IUrrka p tjk;q.kk "ys'e.kk osf'Vrka p vfi dyk Hkkxk% rq rku~ fonq%AA ¼lq-"kk- 4@5½

Kala is defined as a separator between Dhatu (tissues) & its Ashaya (organ or viscera). They are principally of 7 types.

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 & the organ which is made by that tissue.

According to Ayurveda, the Ashaya's or visceral organs are made up of Dhatus.

Example, Amashya is a site of Ama (improperly digested food or ama, ama is the product of first part of digestion of food in the stomach, when the food has been partially digested).

Amashaya is made up of Mamsa Dhatu or muscle tissue. The layers or membranes which separate the muscle tissue from the cavity of the organ are called Kala.

According to modern anatomy, the stomach is made up of 4 layers. The outer one is serous membrane; then comes the muscular layer, below the muscular layer we

have sub – mucous layer and finally below the sub – mucosa we have mucous layer which lines the interior of the stomach, i.e. lines the lumen of the stomach.

The sub-mucous and mucous layers which separate the muscular layer (Dhatu) from the lumen of the stomach (Ashaya) are called Kala's. Similarly, the membranes separating each muscle fibre from the others are also considered as Kalas.

### THE OTHER VERSION

Aashaya means avasthana pradesha (restricted or bounded space). By this we can understand that the boundary or demarcated lining between Rasa (plasma), Rakta (blood) etc tissues and their Ashayas (blood vessels) is called Kala.

Example, the layer forming a boundary around (surrounding) the plasma and blood and separating it from its bounded walls (Ashaya) is called Kala.

They can be compared to mucous membrane, epithelium and synovial membrane (covering the joint space i.e. Ashaya and separates it from the tissue i.e. bone tissue).

Kala also could be considered as cells because it is the cells which form a particular tissue. The cellular layer of a tissue separates it from the Ashaya (formed from that tissue).

The Kala rasa or secretions of the Kala forms the tissues. The Kala also produces kapha (mucous) and pitta (bile or digestive enzymes).

### KALA SWARUPA (STRUCTURE AND APPEARANCE OF KALA)

Kala	Site
<b>Mamsadhara Kala</b>	Muscles allover in Veins, arteries, and tendons
<b>Raktadhara Kala</b>	Inside Mamsadhara Kala, specifically in blood vessels, liver and spleen
<b>Medadhara Kala</b>	Abdominal as well as small bones or can be correlated to cartilages
<b>Shleshmadhara Kala</b>	At all joints
<b>Purishdhara Kala</b>	Lining of large intestine and rectum
<b>Pittadhara Kala</b>	Part of small intestine, can be correlated to duodenum
<b>Sukradhara Kala</b>	Present all over the body

Kala	Dhatu	Applied aspect	Used drugs
<b>Mamsadhara Kala</b>	Mamsa, Rasa Dhatu	As described first, it is more of physical holding membrane which confers the tone, elasticity and functional normalcy of all Dhatu.	Madhur Rasa Drugs, Mamsrasa, Arjun powder, Ashwagandha
<b>Raktadhara Kala</b>	Rasa, Rakta Dhatu	It is described inside the Mamsdhara Kala, in liver and circulating vessels, it optimum function may be responsible for normal circulation of body fluids	Kutki, Manjishta, Sariva
<b>Medadhara Kala</b>	Meda, Aba Dhatu	It is situated in abdomen and small bones, so can be correlated to disorders in fat accumulating areas and soft tissues in the body	Guggulu,

When we cut a wood, some liquid flows out of it. This can be considered as the essence of the tree or wood.

Similarly, when we cut a muscle, we can see the tissues flowing through it or oozing through it in the form of Rasa (plasma) and Rakta (blood).

The portions of the body which are covered by Snayus (ligaments and tendons), enveloped by Jarayu (membrane) and smeared with kapha (mucous) are called Kalas.

This appearance of Kala explained above fits into the category of mucous membranes and epithelium.

Thus the membranes which secrete mucous and protected by the snayus are called Kalas.

Snayu and shleshma are the components of Kala and they spread in its layers. The essence part of the dhatu remains in small part as layers. These structures are called Kala's.

### FORMATION AND STRUCTURE OF KALA /kkRok”k;kUrjDysnks foiDo% LoaLoeq’e.kkAA “ys’e Luk\_oijkPNUu% dyk[; % dk’Blkjo~A - A.Hru. Sharir 3/9

The liquid part present between Dhatu and Ashaya, by its own heat gets converted to Kala.

By studying the definition and formation of Kala, we can state that it is not only the physical entity rather act as both physical and functional part in production and circulation of respective Dhatu. The seven types of Kala mentioned in Ayurveda classis can be tabulated along with its applied aspect;

<b>Shleshmadhara Kala</b>	Meda, Majja, Aba Dhatu	All joints have Synovial fluid for its proper functioning, this can be correlated with this Kala	Shigru, Sneha Kalpana
<b>Purishdhara Kala</b>	Asthi Dhatu with its Upadhatu	The origin of Asthi – bones is said at the site of this Kala, hence the diseases of Asthi will require medication which have effect on this Kala	Tikta Rasa drugs, Tikta Ksheer Basti, Asthisamharak, Kukkutanda twak Bhasma
<b>Pittadhara Kala</b>	Majja Dhatu (organs related to Majja Dhatu; Nervous system, Eyes, Brain)	The origin of Majja is said to be at the site of this Kala, hence the disorders of Majja Dhatu will need medication which will act at this site	Sneha Kalpana, Bramhi, Jatamansi, Jyotishmati, Shankhapushpi, Yashtimadhu
<b>Sukradhara Kala</b>	Rasa, Rakta, Shukra, Oja	It can be correlated to nutrient supply to all body parts at cellular level, hence to increase the vitality and endurance one has to act on this Kala	Sheha Kalpana, Shilajit, Suvarna Bhasma, Vanga Bhasma, various types of Rasayana

## CONCLUSION

Kala Sharir gives us important information about membrane & layer of body which take part in many important functions of the body. According to the Ayurveda, the diseases are formed only when tissues are contaminated or vitiated by Doshas. 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 unique Ayurvedic principles of its relation with various Dhatu and its origin, we can get insight for its applied aspect.

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