

CLINICAL PERSPECTIVES ON KALA SHAREERA; AN AYURVEDA REVIEW W.S.R.  
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Article Received on 18/02/2022

Article Revised on 10/03/2022

Article Accepted on 30/03/2022

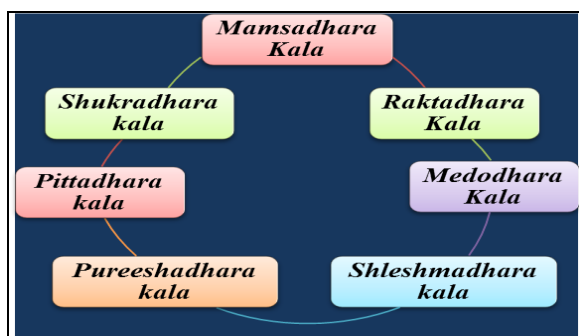
## ABSTRACT

Kala Shareera is important concept of Ayurveda anatomy which mainly talks about layers or membranes of body. The medical science reported presence of many membranes in body which form envelope to over the organs. These layers provide support and protect organs from outer shock. The fluid present with these layers or membrane gives lubrication to the body organs and improves their motions. As per modern science pleurae and pericardium are examples of membranes or layers which cover lungs and heart respectively. As per Ayurveda Kala can be defined as a separator between Dhatu and Ashaya, they are seven types; Shleshmadhara Kala, Raktadhara Kala, Medodhara Kala, Shleshmadhara kala, Pureeshadhara kala, Pittadhara kala and Shukradhara kala. The anatomical knowledge of these all layers is very important to know their clinical importance; considering this present article explored concept of Kala Shareera.

**KEYWORDS:** Ayurveda, Kala Shareera, Anatomy, Membrane.

## INTRODUCTION

*Kala* is the term defined in Ayurveda for various purposes including unit of time and membrane, etc., with respect to anatomical view it can be considered as membranous structure. *Kala* described as thin membranous entity, lines the internal cavity of *Ashayas* and blood vessels, etc. *Kala* separates *Dhatu* and *Ashaya*, here *Ashaya* described as cavity that holds *Dhatu*. The inner lining of the *Ashaya* that holds *Dhatu* is called *Kala*, which covered by a muscular layer and spread as a *Snayu*. *Kala* can also be used for cells because cells form a particular tissue. The *Kalarasa* means secretions of *Kala* forms the tissues; it also forms *Kapha* and *Pitta*.<sup>[1-5]</sup> As per Ayurveda there are seven types of *Kala* as depicted in **Figure 1**.

Figure 1: Types of *Kala Shareera*.Structural View on *Kala*

The body parts covered by *Snayus*, enveloped by *Jarayu* and smeared with *Kapha* are called *Kalas*. As per modern science it can be correlated with mucous membranes and epithelium. Therefore *Kala* is membrane which protected by *Snayus* and secrete mucous; thus *Snayu* and *Shleshma* are considered as components of *Kala*. *Kala* is made up of essence of *Dhatu* and enveloped by *Snaayu* and *Jarayu*. *Kala* separates hollow or lumen of organ from its lining tissue, therefore mucous membrane of the hollow organs can be considered as *Kala*. It is interposing structure between *Ashaya* and its *Dhatu*. *Kala* is covered by innermost muscular layer and outer serous membrane from one side while other side of *Kala* is smeared with *Shleshma*.<sup>[5-8]</sup>

*Kala* work as sub-mucous layer, if *Snayu* and *Jarayu* considered as innermost layer and submucosa of muscle cells respectively, then mucous layer can be considered as *Kala*. If peritoneal layers and the muscular sheath considered as *Snayu* and *Jarayu* respectively then mucous and submucous layers of muscle can be considered as *Kala*.<sup>[7-9]</sup>

Biological Significance of *Kalas*

- They form protective coating for *Ashayas*
- Lines boundary between the *Ashayas* and *Dhatu*s thus separate their entity

- They produce *Dhatu* (essences of tissues)
- Protect covering parts and provides lubrications
- Mucous act as buffer to protect stomach from harmful action of acids
- Provides support to holds vital parts of body

#### Types of *Kala*<sup>[9-11]</sup>

1. *Mamsadhara Kala*
2. *Raktadhara Kala*
3. *Medodhara Kala*
4. *Shleshmadhara kala*
5. *Pureeshadhara kala*
6. *Pittadhara kala*
7. *Shukradhara kala*

#### ***Mamsadhara Kala***

*Mamsa dhara kala* is membranes of muscles holding that supports blood vessels, holds the networks of *Siras*, *Snaayus*, *Dhamanis* and *Srotas*. The *Sira*, *Snaayus*, *Dhamanis* and *Srotas* nourish *Mamsa* with the support of this *Kala*.

#### ***Raktadhara Kala***

*Raktadhara Kala* embedded in the *Mamsa* and also present inside the *Sira*, *Yakrut* (Liver) and *Pleeha*. Functionally it can be correlated with epithelial blood vessels layers, hepatic cells, splenic cells and haemopoetic system.

#### ***Medodhara Kala***

*Medodhara Kala* is membranes that hold fat tissue or forms fatty layer, functionally it can be correlated with layer of adipose and fatty tissue of the abdomen.

#### ***Shleshmadhara Kala***

The *Shleshmadhara kala* is layers which hold mucus, present in all bony joints, *Shleshmadhara kala* provides lubrication for bony joints and facilitate their easy movement thus helps in restriction free movements of joints. It prevents joints from the shock and strain of repeated movement, functionally *Shleshmadhara kala* can be correlated with synovial membranes that cover inner surfaces of the joints. *Shleshma* secreted by this membrane as synovial fluid which supports joints movements.

#### ***Pureeshadhara Kala***

The *Pureeshadhara Kala* is membranes or layers that hold or form *Pureesha*; located in the *Pakwashaya* inside the *Antah Koshta*. This *Kala* found within the *Koshta* at the level of *Yakrit* and differentiates *Pureesha* at the site of *Unduka*. The *Pureeshadhara kala* helps to separate water and nutrients from the stools. Functionally it can be correlated with large intestine mainly caecum part with its inner layers along with process that segregates nutrients from *Mala*.

#### ***Pittadhara Kala***

The *Pittadhara Kala* is membranes which hold *Pitta*, this receives semi-digested food till to get fully digested.

*Pittadhara Kala* also secretes *Pitta* that helps in complete digestion of food. It digests all types of food including; *Ashita*, *Khadita*, *Peeta* and *Leedha*. *Pittadhara Kala* is situated between *Pakwashaya* and *Amashaya*. *Pittadhara Kala* after receiving semi-digested food from *Amashaya*, facilitate complete digestion of this semi-digested food materials and pushes finally digested food towards the *Pakwashaya*. *Agni* of *Pittadhara Kala* helps in the digestion of food materials. Functionally stomach and duodenum along with their inner layers and their secretions (acids and digestive enzymes) can be correlated with the *Pittadhara Kala*.

#### ***Shukradhara Kala***

The *Shukradhara Kala* is membranes or layers that holds or prepare reproductive fluids; this *Kala* pervades in the whole body and can be correlated with layers of testes where semen get produces.

#### CONCLUSION

*Kala Shareera* is anatomical concept of Ayurveda which deals with information related to the layers or membranes of body. The membranes or layers which form envelope to over the organs also provide support and protect organs from outer shock. Moreover the fluid of membrane provides lubrication to the body organs for their normal functioning. *Kala* act as a separator between *Dhatu* and *Ashaya*, also lines the internal cavity of *Ashayas* and blood vessels, etc. They are seven types; *Shleshmadhara Kala*, *Raktadhara Kala*, *Medodhara Kala*, *Shleshmadhara kala*, *Pureeshadhara kala*, *Pittadhara kala* and *Shukradhara kala*. The secretion of *Kala* forms tissues; it also forms *Kapha* and *Pitta*. The anatomical knowledge of these all layers is very important to know their clinical importance for diagnostic and therapeutic purposes.

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