

A CRITICAL REVIEW ON KALA SHARIR W.S.R TO MAMSADHARA KALA

Dr. Kannan Mani^{*1}, Vd. Sheetal A. Agrawal², Vd. Ashish S. Agrawal³ and
Vd. Priyanka K. Dighde⁴

¹Professor and HOD Rachana Sharir Dept., Jupiter Ayurved Medical College and Tarini
Ayurved Hospital, Shankarpur, Nagpur.

²(MD) Rasashastra and Bhaishajyakalpana

³(Professor and HOD) Sharir Kriya Dept., Smt. Vimladevi Ayurved Medical college,
Chandrapur.

⁴(MD) Rasashastra and Bhaishajyakalpana.

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*Corresponding Author

Dr. Kannan Mani

Professor and HOD Rachana
Sharir Dept., Jupiter Ayurved
Medical College and Tarini
Ayurved Hospital,
Shankarpur, Nagpur.

ABSTRACT

Kalas are membrane or layer present between *Sapta Dhatus* and *Asaya* which forms envelope or covering of the organs inside the body. They provide support & protections to the organs. "*Dhatvashyaantarmaryadakala*"^[1] According to *Ashtang Sangraha Sharirasthan*, *kleda* present between *dhatu* and *aashay* gets *paak* (solid) due to heat and called as *kala*. *Shareera Rachana* is one of the fundamental subject in *Ayurveda* in which there are many topics explained on like *Asthi*, *Sandhi Shareera*, *Sira*, *Dhamani*, *Srotas Shareera* and totally seven number of *Kala* have been explained by our *Acharya*. They form a protective coating for the *ashayas* as well as boundary between the *ashayas* and *dhatu*s. According to

Sushrutacharya, *kala* is that limiting layer of body organs and tissues which keep them in normal position. Here the word is used for organs also. *Kala* can be correlated with Membrane, Fascia, Covering etc. structures as per Anatomy. The term *Kala* is used for Membrane – This may be fibrous, mucous and serous, One of the *Sharir Ghatak* (Part of the body), Sheath, Septum, *Guna* (Qualities). Specific *kala* present in the specific organs. The seven *Kala*'s are *Mansadhara*, *Raktadhara*, *Medadhara*, *Shleshmadhara*, *Purishdhara*, *Pittadhara*, *Sukradhara* So here we have selected *kala Shareera* among the many topics, here an attempt is made to understand the topic of *kala*. *Kala*, the ancient traditional science in

relation to the today's modern allied medical science. *Mamsadhara Kala* can be assumed as Intermuscular Septa. There are many hidden concept of *Kala* and here we are talking about *Mamsadhara Kala*.

KEYWORDS: *Kala, Mamsadhara Kala, Intermuscular Septa, Dhātu, Ashaya.*

AIMS AND OBJECTIVES

- To collect the references from different *Ayurvedic* text regarding the concept of mamsadhara kala on the basis of *Ayurvedic* and modern view.
- To study kala.

MATERIAL AND METHOD

Literature of Ayurveda, bhrutrayee & laghutrayee along with their commentaries by different authors were refer for the study.

INTRODUCTION

Acharya Susruta mentioned seven^[2] types of *kala* these are • *Mamsadhara kala*. • *Raktadhara kala*. • *Medodhara kala*. • *Shleshmadhara kala*. • *Pireeshdhara kala*. • *Pittadhara kala*. • *Sukradhara kala*. *Kala* is structure in the form of membrane or layer. It separates the hallow or lumen of an organ from its lining tissue. Bottom line in the inner lining of hollow visceral organs producing mucous are considered *kala*. This *kala* holds embedded in it the networks and branches of *siras*, *snaayus*, *dhamnis* and *strotas*.

Mamsadhara Kala^[3]

*Taasaam prathamaa maamsadhara naama yasyaam
maamsa gataanaam (maamsevaa), Siraa Snaayu
Dhamanee Srotosaam prataanna bhavanti...*

(sushrut sharir sthan 4/8)

Mamasadhara kala provide the support & forms a protective shield covering on the delicate structure. Mamasadhara kala should have been explained after Rasa & Raktadharakala's according to chronology of formation of tissue. (Rasa-Rakta-Mansa-Medo-Asthi-Majja-Shukra). But Rasa (plasma) & Rakta (blood cells) are passing through the *siras* & *dhamnis* which in turn are embedded in the substance of *mamsa*. The substance of *mamasdhara* should be split to find the *Raktadhara kala*. Therefore *mamsadhara kala* is explained as the first

stratus. Mamsadhara kala can be compared as the muscle tissue & the protective sheath, the fine membranes binding the muscle cells and packing up the muscle fibres into different compartment along with embedded blood vessels intervening the muscle fibres.

Functions of Kala

Absorption, Secretion, Protection, Selectivity.

There are many concepts mentioned in the classics like *Asthi*, *Sandhi Shareera*, *Sira*, *Dhamani*, *Srotas Shariram*. Among these concepts, *Sushrutacharya* mentioned *Sapta Kala* in the body. While considering upon the *Ashaya* they had also thought of the linings making internal walls of the *Ashaya* called them as *Kala*. *Ashaya* are formed from these *Dhatu* only. *Dhatu Ashaya Maryada* means that which covers the internal lining of that particular *Dhatu*. Like endocardium, endometrium, mucosa etc.

Among the *Sapta Kala*, *Mamsadhara Kala* is one described by *Sushruta* and other *Acharya*. So the collection and comprehensive review of information regarding *Mamsadhara Kala* becomes significant. Hence to resolve and stockpile the hidden scientific information about *Mamsadhara Kala*, in different resources and its structure and function in the body.

The first *Kala* is a *Mamsadhara Kala*. In this *Kala* networks of *Sira*, *Snayu*, *Dhamani* and *Srotas* are present.^[4] In the context of *Mamsadhara Kala* metaphor is explained as the stalk of the lotus flower, sinks in the mud and spreads the surrounding area; in the same pattern the *Sira*, *Dhamani*, *Srotas* and *Snayu* by taking the support of *Kala* spread and nourish (Functional support) the *Mamsa*.

Swaroop of kala; In the context of *kala* a metaphor is explained, when the transverse section of the wooden log is taken, the underlying structures are visible (like phloem, xylem), similarly when the transverse section of *Mamsa Dhatu* is taken then the underlying *Rasa Raktadi Dravya* is visualised. The different parts of the body are covered by *Snayu*, *Jarayu* and *Shleshma* are called as *Kalabhaga*.^[5] *Acharya Dalhana* comments on the above quotation as *Kala* is *santata* which is uniformly present and covered by *kapha*.

Formation of *Kala*^[6]: *Acharya Vagbhatta* describes about the formation of *Kala* as (*Kleda*) which exists between the *Ashayas* and the *Dhatus* and mutate by the *Swaushmana* into tissues interpretate with fibrous matter, serous and mucinous structures. *Ashtanga Hridaya* also explains the same concept.^[7]

Dalhana while explaining this quotation raises a question as why the *mamsadhara kala* is placed first though it is said that from *Rasa Rakta* is formed and from *Rakta Mamsa* is formed etc. to this he answers that it is applicable only in the case of *Dhatu Poshana* and not in the case of *Dhatu Dharana*. From this it is clear that *Kala* is the holding substance and has nothing to do with the *Dhatu Poshan*.^[8]

Modern aspect

1. Membrane^[9]: A thin layer of tissue that covers a surface, lines many body cavities or divides a space or organ.

a. Serous membrane: A mesothelial tissue which lines certain internal cavities of the body, forming a smooth, transparent, two-layered membrane lubricated by a fluid derived from serum. The peritoneum, pericardium, and pleura are serous membranes.

b. Fibrous membrane: A membrane composed mainly of fibrous connective tissue. E.g. Fasciae, dura

c. Mucous membrane:

An epithelial tissue which secretes mucus, and lines many body cavities and tubular organs including the gut and respiratory passages.

Fascia^[10]

Fascia is collections of connective tissue. During development mesodermal cells differentiate into bone, muscle, vessels, renal and splenic tissue, etc but large numbers persists in connective tissues permeating all regions, e.g. the fibres of muscle, nerve and tendon, but also in macroscopic accumulations between whole muscles and viscera.

Deep fascia

It is also composed chiefly of collagenous fibres but these are compacted and often so regularly arranged.

Septa

It is a modification of deep fascia. Such intermuscular septa may incidentally separate muscles or groups with different actions.

DISCUSSION

Kala Shareera forms an important topic in *Shareera Rachana*. As explained in our classics that *Kala* are such structures which are present in between the *Dhatu* and *Ashaya Kala* can be

correlated with Membrane, Fascia, Covering etc. structures as per Anatomy. The term *Kala* is used for Membrane – This may be fibrous, mucous and serous, One of the *Sharir Ghatak* (Part of the body), Sheath, Septum, *Guna* (Qualities). Specific *kala* present in the specific organs. The seven *Kala's* are *Mansadhara*, *Raktadhara*, *Medadhara*, *Shleshmadhara*, *Purishdhara*, *Pittadhara*, *Sukradhara*. When we consider the *Mamsadhara Kala* it is explained in our classics as it is the first *Kala*. In this *Kala*, networks of *Sira*, *Snayu*, *Dhamani* and *Srotas* are present. To do modern correlation it can be deep fascia and its modifications like septa can be correlated, as it is present in between the *Dhatu* and *Ashaya*. These coverings form a platform for the network of vessels and nerves to travel.

CONCLUSION

When consider the overall review of *Kala Shareera*, it is concluded as the limiting membranes. In case of *Mamsadhara Kala*, it is considered as intermuscular septa the intermediate lining which fulfills the classical criteria.

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