

# Conceptual study of *Mamsadhara Kala*

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## Abstract:

*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*. While defining *Kala*, *Acharya Sushruta* has given beautiful example that how we can see the layer by layer of a tree when we take a transverse section of the wooden log, in the same manner the *Kala* is present in our body. Whatever the explanation we find it is in cluster form or in nutshell form. So here we have selected *Kala Shareera* among the many topics, here an attempt is made to understand the topic of *Kala*, the ancient traditional science in relation to the today's modern allied medical science. On analysing the collected review it is concluded that *Mamsadhara Kala* is Intermuscular Septa.

Keywords: *Kala*, *Mamsadhara Kala*, Intermuscular Septa

## Introduction:

Each and every concept mentioned in *Ayurveda* has its own importance. There are many concepts mentioned in the classics like *Asthi*, *Sandhi Shareera*, *Sira*, *Dhamani*, *Srotas Shareera* are scientific and worth understanding in modern words. Among these concepts *Acharya Sushruta* mentioned *Sapta Kala* in the body. While considering upon the *Ashaya* they had also thought of the linings making internal walls of the *Ashaya* designating them as *Kala* They presented it in a very silent way. 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 unravel and accumulate the hidden scientific information about *Mamsadhara Kala*, in different resources and its structure and function on common parlance, presents intended research work has been undertaken and planned to carry out.

Review:

Definition:

The *Kala* are seven in number and are the limiting or lining substances inside the *Ashaya* of the *Dhatu*<sup>1</sup>. *Acharya Dalhana* comments on above quotation and says that which does *Dharana Karma* is *Dhatu* like *Rasa*, *Rakta*, *Mamsa*, *Kapha*, *Pitta*, *Purisha* all these in their *Prakruta Avastha* does *Sharir Dharana* hence considered as *Dhatu*. *Ashaya* means the residing place. The covering present in between the *Dhatvashaya* is called as *Kala*<sup>2</sup>. *Ashaya* means an empty space. Whatever the matter stored in that empty space based on that its nomenclature is done. Like *Mutrashaya*, *Amashaya* etc. There are seven *Dhatu* in

the body. *Ashaya* are formed from these *Dhatu* only. *Dhatu Ashaya Maryada* means that which covers the internal lining of the that particular *Dhatu*. Like endocardium, endometrium, mucosa etc.

In the context of *Kala* a simile 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*<sup>3</sup> *Acharya Dalhana* comments on the above quotation as *Kala* is *santata* that which is present uniformly present. That which is covered by *kapha*, from which certain creatures take birth.

Formation of *Kala*<sup>4</sup>:

*Acharya Vagbhatta* describes about the formation of *Kala* as

*Kala* is such redundant matter (*Kleda*) as exists between the *Ashayas* and the *Dhatu*s and transformed by the *Swaushmana* into tissues pervaded with fibrous matter, serous and mucinous structures. It is like the heartwood of plants, the residual part of the essential *Dhatu* and is termed *Kala* on account of its structure. *Ashtanga Hridaya* also explains the same concept<sup>5</sup>.

The first *Kala* is a *Mamsadhara Kala*. In this *Kala* networks of *Sira*, *Snayu*, *Dhamani* and *Srotas* are present<sup>6</sup>. In the context of *Mamsadhara Kala* simile 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*.

*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 Poshana*<sup>7</sup>.

Functions of *Kala*:

Absorption (by small and large intestine)

Secretion (the small intestine)

Protection (chorion in the uterus)

Selectivity (kidney)

Modern aspect:

1. Membrane<sup>8</sup>: A thin layer of tissue that covers a surface, lines many body cavities or divides a space or organ.
  - a. Fibrous membrane: A membrane composed mainly of fibrous connective tissue. E.g. Fasciae, dura mater.

- b. 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.
- c. Mucous membrane:  
An epithelial tissue which secretes mucus, and lines many body cavities and tubular organs including the gut and respiratory passages.

Fascia<sup>9</sup>:

Fascia is term so vague that it signifies little more than collections of connective tissue large enough to be visible to the unaided eye. During development mesodermal cells differentiate into bone, muscle, vessels, renal and splenic tissue, etc but large numbers persists in connective tissues permeating all regions, not only as a loose connective microscopic component between, e.g. the fibres of muscle, nerve and tendon, but also in macroscopic accumulations between whole muscles and viscera. The arrangement of such connective tissue is highly variable. In dissection it appears as condensation on the surfaces of muscles etc, and is named investing fascia,. Between the muscles which moves extensively it takes the form of loose areolar connective tissue , facilitating movement. Peripheral nerves, blood and lymph vessels lie in loose fascia between other structures often bound together into neurovascular bundles.

Deep fascia:

It is also composed chiefly of collagenous fibres but these are compacted and often so regularly arranged that the deep fascia may be indistinguishable from aponeurotic tissue. In limbs where deep fascia is well developed their fibres are longitudinal or transverse condensing into tough inelastic sheath around the musculature. In the neck and limbs laminae of the deep fascia pass between groups of muscles and connect extensively with bone.

Septa:

It is a modification of deep fascia. Such intermuscular septa may incidentally separate muscles or groups with different actions, developmental histories and innervations.septa often connect rather than separate muscles which may be attached to both aspects of what is in fact an intermuscular aponeurosis.

### 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*. They are the limiting membranes. *Ashaya* means the *Avsathana Pradesha*, means the bounded space. Like in between the blood and plasma and its ashaya blood vessels. Here dhatu means that which does the *Dharana Karma* (which holds). *Kala* overlapped by *Snayu*, *Jarayu* and *Shleshma* cover different types of organs in the body. This category explains that *Kala* can be taken as tough fibrous membrane, mucous membrane and serous membrane. For e.g. stomach which is a muscular organ consists of four layers outer serous, then muscular, submucous and

mucous. The submucosa separates the muscular layer from mucous layer. 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 its probable modern correlation when we consider the definition of *Kala* as *Dhatu Ashaya Maryada*, deep fascia and its modifications like septa can be correlated, as it is present in between the *Dhatu* and *Ashaya*. And when we do dissection we see that each and every *Peshi* has its own covering, by virtue of which these muscles can be easily separated. These coverings form a platform for the network of vessels and nerves to travel. Intermuscular septas divide the muscles in a compartment for the easness of the actions.

### 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 which fulfills the classical criteria.

### References

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<sup>2</sup> Dalhana

<sup>3</sup> *Sushruta, Sushruta Samhita* of Maharshi Sushruta, Kaviraja Ambikadutta Shashtri, edited with Ayurveda-Tattva-Sandipika foreword by Dr. Pranajivana Manekchanda Mehta Chaukhambha Sanskrit Sansthan reprint edition, 2008, pg no 37.

<sup>4</sup> *Vagbhata, Ashtanga Sangraha*, edited by Vaidya Pandit Ramcandra shastri Kinjwadekar, English Inroducion by Vaidya Bhagwan Dash ,Sri Satguru Publications, reprint edition,1990, pg no 115

<sup>5</sup> *Vagbhata, Ashtanga Hridaya* edited with 'Vidyotini' hindi commentary by Kaviraja Atrideva Gupta, Chaukhamba Prakashan, Varanasi, 2012, pg no 250

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<sup>7</sup> Dalhana

<sup>8</sup> Encyclopedia Dictionary

<sup>9</sup> Gray, Gray's anatomy, the anatomical basis of medicine and surgery, edited by Peter L.Williams, published by Churchill Livingstone Robert Stevenson House 1-3 Baxter's Place, Leith Walk, Edinburgh EH1 3AF, Thirty-eighth edition, 1995, pg no 564