

AN APPRAISAL OF THE CONCEPT OF KALA IN AYURVEDA

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ABSTRACT

Ayurveda holds opinion that in all bio transformation, Kala plays major role but the Vedic literature differ in opinion as they consider Kala as fraction, measure of time, collation etc. Ayurveda describes about 7 types of Kala specifying each in detail with its function. Then all the 7 Kala's are broadly divided into 3 categories as Snayu praticchanna Kala, Jarayu santata and Shlesma veshthith Kala.

KEYWORDS: Kala, Snayu praticchanna, Jarayu santata, Shlesma veshthith, Dhatus.

INTRODUCTION

Ayurveda incorporates all aspects of life whether physical, psychological, spiritual or social. All bio-transformation within the body occur through srotas, which are the sites for the action and the Kala plays a major role in this process. For better understanding of this transformation, the thorough knowledge of Kala is required. The word 'Kala' described by Ayurvedic treatise and Vedic literature differ in their sense.

In Vedic literatures, the meaning of Kala are taken in various senses as mentioned below.

1. Sixteenth part of the moon
2. Increase on capital invested (Interest or profit)
3. The fine arts (64 Kalas)
4. Measure of time
5. The long stroke in music
6. Fraction
7. Collation

In Ayurveda, the word Kala is used to denote various sense, they are namely

1. 30 Kasha make one Kala, twenty Kala make one Muhurta or one 10th of Kala.
2. Purusha (Karma purusha or the living man) has 16 Kalas and eleven prana. Dalhana while commenting says that the term Kala here stands for 16 qualities like sukha, dukha, iccha, dvesha etc.
3. Chikitsa chatushpada (4 limbs of Therapeutic) consist of 16 Kala (qualities). These 4 limb stands for the qualities of Vaidya, Paricharaka, Aushadha and Rogi.
4. Kala is variously identified as covering, sheath, aponeurosis, living membrane, secreting membrane

and so on. Majority of the people accept it as secreting membrane.

5. Even the Kalas are seven in number, which are present inside the dhatus (tissues) and asayas (hollow organs).

Just as pith (heart wood) is seen when the wood (stem of tree) is split / cut, similarly when the dhatus such as mamsa are cut, Kala becomes visible. These are differentiated as Snayu praticchanna (covered/ formed ligaments), Jarayu santata (expansion of/ continuation of foetal covering) and Shlesma veshthith (coated with kapha).

Kala is generally considered as membrane but not unanimously able to correctly identify the three kinds of Kala named above. The membranes formed during the embryonic period itself originate from three kinds of primary tissues- epithelial, connective and adipose tissues and this had been discussed in Sushrut samhita.

The moisture that remains inside the space in the dhatus (tissues) gets cooked (processed) by the heat present in them (tissues) forms into structure similar to those found in wood and become covered with snayu (tendoneus sheath), shleshma and jarayu (chorionic membrane). It is called as Kala because of formation from very little quantity of rasa and essence of dhatus (tissues) is described in Ashtang Samgraha, Sharirasthana.

Identification of these structures known as Kala has still remained a problem as these are generally assumed to be thin membrane, responsible for certain function. Moisture present inside the dhatu and asayas cooked by their own heat (of each dhatu and asayas) become transformed into structures called Kala or transformed

(literally cooked) by the heat of the tissue and are covered with fine fibrous and connective tissue surrounded by or bathed in lymph. Also the Kala is formed just as essence formed in the trees, which takes no part in the formation of acting tissues in plant life.

Classification of Kala

Totally 7 types of Kalas are described by Acharya Sushruta

1. Mamsadhara kala
2. Raktadhara Kala
3. Medodhara Kala
4. Shlesma dhara Kala
5. Mala dhara Kala
6. Pitta dhara Kala
7. Sukradhara Kala

Detail of these Kala is elaborated as follows -

1 Mamsadhara Kala (Sushrut Samhita, Sharirasthan 4/8-9)

Which is present inside the muscles and it allows the siras (veins), snayu (ligaments) and dhamani (arteries) to spread their branches inside the muscles.

Just as bis (rhizomes of lotus plant) and mrinala (stalk of the lotus flower) present in muddy water in the ground grow constantly, similarly siras etc. (veins, ligaments and arteries) grow constantly inside the muscles. The Mamsadhara Kala is placed first among Kala's though it is said that from the rasa forms rakta and from rakta to mamsa etc. and this theory is applicable only in the case of tissue building and not in the case of merely holding the tissues as in the Kala. Sushruta call it sukshma (minute) because the layers of the skin have been described as of definite thickness and also because many of these membranes are fine or microscopic. It is evident therefore that the word Mamsadhara Kala implies the flesh or muscles holding membranes namely -

1. Deep Fascia (very thick)
2. Inter muscular septa (moderately thick)
3. Sarcolemma (thin or minute)

2 Raktadhara Kala (Sushrut Samhita, Shariasthan, 4/10-11)

Which is present inside the muscle, within which shonita is present, especially in siras (veins), localized in yakrit and pliha. Just as milky sap flows out when trees with milky sap are cut (or their bark bruised), similarly when muscles are cut, blood flows out quickly in great quantity. This may be correlated to endothelial membrane or thin mucous membrane inside the arteries, veins, liver and spleen, formed from epithelial tissues.

3 Medodhara Kala (Sushrut Samhita, Sharirasthan, 4/12-13)

Which is counted as 3rd Kala. Meda is mainly present in the abdomen and in small bones it becomes as majja. In big bone, majja remain inside them, whereas in all others (small, flat, curved bones), it is called sarakta meda. The pure fat present in the muscles is known as vasa. This

may be considered as membrane composed of adipose tissues (fat) such as sub cutaneous fascia, omentum etc.

4 Shlesma dhara Kala (Sushrut Samhita, Sharirasthan, 4/14-15)

It is present in all joints and supporting its life just like the wheel moves easily when its axis hole is lubricated with shlesma. This concept was accepted by all Acharya's while defining shleshmak kapha, which is present in joints of bones, it is a serous membrane formed from epithelial tissue.

5 Purish dhara Kala (Sushrut Samhita, Sharirasthan, 4/16-17)

Which is present inside pakwashaya and separates the mala (waste products, faecal matter especially) from the food material after its digestion and is situated inside the alimentary tract, commencing from yakrit and the intestines, this Maladhara Kala separates the mala at the level of unduk. This may be correlated to mucous membrane present inside the large intestine formed from epithelial tissue. It is Shlesma veshthith Kala.

6 Pitta dhara Kala (Sushrut Samhita, Sharirasthan, 4/18-19)

Which supports the 4 kinds of food and drinks, pushed from the amashaya and staying in the pakvashaya (small and large intestines). Foods which are eaten, chewed, drunk, licked, after reaching the koshtha (alimentary tract), in man, undergoes digestion there, in due course of time and gets absorbed by tejas of pitta. This pitta is also explained by some commentators as internal fire or digestive juices secreted by small intestines and also the absorptive apparatus. This also accounts for the name 'Pahyamanashaya' some time given to the small intestines to distinguish them from the large intestines or colon, which is called Pakvashaya.

It may be concluded as the mucous membrane present inside the stomach, duodenum and small intestines. It is also a Shlesma veshthith Kala.

7 Shukra dhara Kala (Sushrut Samhita, Sharirasthan, 4/20-21)

Which pervades the entire body in all living beings. Just as ghee is present in milk and jaggery in sugar cane juice (in invisible form) in the same way shukra is to be understood by the Acharyas, as being present in the human body, shukra comes out through the urinary passage of man from a distance of two angula beneath the orifice of the urinary bladder on the right side. Shukra present in the entire body comes out when man indulges in copulation with women, in a happy mind. This may be correlated to the mucous membranes of the testis, seminiferous tubules, epididymis, vas deferens and prostrate in the male and of vagina, uterus, uterine tubes and ovaries in females. This is also Shlesma veshthith Kala.

DISCUSSION

Kala may be considered as secreting membranes present in their respective Kala. Broadly these Kala may be correlated under following divisions;

1. **Snayu praticchanna Kala** – Membranes of the connective tissues such as fascia, aponeurosis, ligaments, tendons, external layer of organs of digestive, respiratory, circulatory, urinary, reproductive system etc. comes under this heading and Mamsadhara Kala may be its best example.
2. **Jarayu santata Kala** – Membranes formed from fibrous connective tissues help in making of superficial and deep fascia; forming part of muscles and separating them into functional units, these also form body cavities etc.
3. **Shlesma veshthith Kala** – Membranes formed by epithelial tissues, which secrete fluids are two, viz mucous membrane and serous membrane. Hence, Purishdhara Kala, Pittadhara Kala, Shukradhara Kala comes under Shlesma veshthith Kala.

In our opinion concept of Kala needs still more detail analysis and interpretation.

CONCLUSION

To conclude as per Vedic thought the Kala means fraction, component parts, qualities, part of time etc. whereas in Ayurveda the understanding of Kala helps to explore the concept of Anatomy, Physiology, Pathology and up to the extent which helps to plan treatment also. The word Kala holds wide range of meaning at different context, in different places depending upon various literatures.

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