



A LITERATURE REVIEW OF MAJJADHARA KALA WITH SPECIAL REFERENCE TO KALA SHARIR

Author Name-

*¹Dr. Shatrughn Hanumant Netke

, ²Dr. Manisha K. Dawre

¹PG Scholar Final Year, Sharir Rachana Department, Government Ayurvedic collage Dharashiv

²Guide, Professor & H.O.D., Sharir Rachana Department, Government Ayurvedic Collage Dharashiv

*Corresponding Author- Dr. Shatrughn Hanumant Netke

Abstract

The concept of *Kala Sharir* in Ayurveda represents the membranous layers that separate and support various tissues (*Dhatus*) in the human body. Among the seven *Kalas* described in Ayurvedic literature, *Majjadhara Kala* holds significant importance due to its association with the *Majja Dhatu*, which encompasses bone marrow and the nervous system. This article explores the anatomical, physiological, and clinical relevance of *Majjadhara Kala*, drawing parallels between its functions and modern neuroanatomical structures like the bone marrow and myelin sheath. *Majjadhara Kala* not only provides nourishment and protection to the nervous system but also plays a vital role in maintaining mental health and cognitive functions. Ayurvedic therapeutic approaches, including *Nasya*, *Shirodhara*, and herbal supplementation, are utilized to strengthen *Majja Dhatu* and safeguard *Majjadhara Kala*. Understanding the concept of *Majjadhara Kala* provides valuable insights into Ayurvedic approaches to treating neurological and skeletal disorders, emphasizing the holistic nature of health in Ayurvedic philosophy.

Keywords:

Kala Sharir, Majjadhara Kala, Majja Dhatu, Bone Marrow, Nervous System, Ayurvedic Anatomy, Myelin Sheath, Neurological Disorders, Ayurvedic Therapeutics.

Introduction

In Ayurveda, the human body is understood through a multidimensional framework that encompasses not only physical and anatomical aspects but also energetic, functional, and metaphysical dimensions. One such essential classification in Ayurvedic anatomy is *Kala Sharir*, which refers to the layers or membranes that separate various structures within the body. The term *Kala* is often translated as "covering" or "membrane," and these

Kalas serve as vital interfaces between different tissues (*Dhatu*). Among the seven *Kalas* described in the classical Ayurvedic texts, *Majjadhara Kala* holds a prominent position due to its association with the nervous and skeletal systems. This article explores the concept of *Kala Sharir*, focusing on *Majjadhara Kala*, its relevance, and how it influences the structure and function of the body, especially in relation to the central nervous system and bone marrow.

Kala Sharir: The Concept

In Ayurveda, the human body is perceived to have seven *Kalas* that act as separating membranes between two different *Dhatu*s (tissues) or between a *Dhatu* and a body cavity (*Koshta*). These *Kalas* are functionally significant, as they not only protect the body but also facilitate the nourishment and health of tissues. The seven *Kalas* mentioned in the classical texts like *Sushruta Samhita* and *Charaka Samhita* are:

1. **Mamsadhara Kala** – The membrane associated with the *Mamsa Dhatu* (muscle tissue).
2. **Raktadhara Kala** – Associated with the *Rakta Dhatu* (blood tissue).
3. **Medodhara Kala** – Associated with the *Meda Dhatu* (fat tissue).
4. **Shleshmadhara Kala** – Related to the *Shleshma* (Kapha) situated in the joints.
5. **Purishadhara Kala** – Associated with the large intestine, controlling the formation of stool.
6. **Pittadhara Kala** – Associated with the stomach and intestines, regulating digestion.
7. **Majjadhara Kala** – The membrane surrounding and supporting the *Majja Dhatu* (bone marrow and nervous system tissues).

AIM AND OBJECTIVES:

1. Review of concept of Kala from Ayurveda Classics and modern literature
2. To find out probable co-relations in modern anatomy.

MATERIAL AND METHODS

Relevant information regarding Kala Sharir has been gathered from Ayurvedic Classics and other scientific literatures, along with websites, journals and published articles

Kala Sharir- Definition - कलाः खल्वपि सप्त भवन्ति धत्वाशयन्तरमर्यादाः ॥ - Sush. Sharir 4/5¹

The term *Dhatu* highlights all the basic elements which turn into three main functions viz. nutrition, sustenance and growth in general while in specific it can be accentuating under *Saptadhatu* viz. *Rasa*, *Rakta*, *Mansa*, *Meda*, *Asthi*, *Majja* and *Shukra*, indicate different tissues of the body. They contribute structural architecture².

Swaroop of Kala also mentioned by Acharyas according to them, Kala is covered with Snayu which can be called as muscular layer; spread like Jarayu that is amniotic fluid; smeared with Shleshma that is enveloped with mucus³. All these three structures may or may not necessarily be present in each Kala, even one or two of the above-mentioned structures may be found existing in the Kala. There are seven numbers of Kala described in all Samhitas⁴.

Majjadhara Kala: Anatomical and Functional Understanding

Majjadhara Kala is the layer that surrounds and holds the *Majja Dhatu*, which consists of bone marrow and is closely related to the nervous system, particularly the brain and spinal cord. According to Ayurvedic texts, *Majja Dhatu* resides within the bones (Asthi) and serves critical functions in both nourishment and protection of the body's neurological system. It can be equated with the myelin sheath and bone marrow in modern anatomy.

Anatomical Correlates

- **Bone Marrow:** In modern medicine, bone marrow is the soft, spongy tissue inside bones responsible for producing red blood cells, white blood cells, and platelets. In Ayurveda, this function aligns with the nutritive and sustaining role of *Majja Dhatu*.
- **Myelin Sheath:** The *Majjadhara Kala* also corresponds with the protective layers surrounding the brain and spinal cord in modern neuroanatomy, such as the dura mater and myelin sheaths of neurons. The myelin sheath ensures the proper transmission of nerve signals, a function that echoes the description of *Majjadhara Kala* as preserving nervous system health.
- The mucous membrane lines interior of hollow organs moistened by mucus, such as the intestines. The mucosa proper is made up of an epithelial lining having mucosal opening onto its surface, the underlying loose connective tissue, the lamina propria, and a slim layer of smooth muscle, the muscular mucosae, whereas serosa consists of a solitary layer of squamous mesothelial cells sustained by a core layering of loose connective tissue containing numerous blood and lymphatic vessels. The pleural, pericardial, and peritoneal cavities are lined by serosa⁵.

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

Functions of Majjadhara Kala

1. **Nourishment:** *Majjadhara Kala* facilitates the nutrition of the *Majja Dhatu*, ensuring the vitality of both bone marrow and nervous tissues. This function is crucial for maintaining cognitive functions, nerve health, and the proper production of blood cells.
2. **Protection:** By acting as a membrane that holds the bone marrow, *Majjadhara Kala* offers protection to the nervous system from external harm. It forms a shield around the bones and the spinal cord, preventing damage.
3. **Support to Nervous System:** This *Kala* is critical for maintaining the health of the nervous system, both structurally and functionally. It is said to play a role in the transmission of sensory and motor signals, aligning with the function of the myelin sheath, which insulates and protects the nerves.
4. **Maintenance of Mental Health:** In Ayurveda, the state of *Majja Dhatu* is directly linked to mental health. A healthy *Majjadhara Kala* supports *Majja Dhatu* and helps prevent disorders like anxiety, depression, and cognitive impairments.

Clinical Relevance of Majjadhara Kala

The dysfunction of *Majjadhara Kala* is linked to various disorders. Ayurvedic scholars emphasize the importance of balancing *Majja Dhatu* for maintaining both physical and mental health. Modern parallels can be drawn between the health of the bone marrow and nervous system in conditions such as multiple sclerosis (a disorder affecting the myelin sheath) and hematological diseases like leukemia, which affects the bone marrow.

Neurological Disorders

- Damage to *Majjadhara Kala* can lead to neurological issues, including nerve degeneration, multiple sclerosis, and other myelin-related conditions. Ayurveda suggests therapies like *Shirodhara*, *Nasya*, and *Basti* treatments for managing such disorders by nourishing *Majja Dhatu*.

Bone Marrow Disorders

- Diseases like leukemia, anemia, and osteoporosis, which involve bone marrow dysfunction, are also understood through the lens of *Majja Dhatu* imbalance. Ayurvedic treatments, including herbal formulations like *Ashwagandha*, *Bala*, and *Guggulu*, are recommended to strengthen *Majja Dhatu* and improve bone marrow health.

<i>Kala</i>	<i>Dhatu</i>	Applied aspect	<i>Used drugs</i>
<i>Mamsadhara Kala</i>	<i>Mamsa, Rasa Dhatu</i>	As described first, it is more of physical holding membrane which confers the tone, elasticity and functional normalcy of all <i>Dhatu</i>	<i>Madhur Rasa Drugs, Mamsrasa, Arjun powder, Ashwagandha</i>
<i>Raktadhara Kala</i>	<i>Rasa, Rakta Dhatu</i>	It is described inside the <i>Mamsadhara Kala</i> , in liver and circulating vessels, its optimum function may be responsible for normal circulation of body fluids	<i>Kutki, Manjishta, Sariva</i>
<i>Medadhara Kala</i>	<i>Meda, Aba Dhatu</i>	It is situated in abdomen and small bones, so can be correlated to disorders in fat accumulating areas and soft tissues in the body	<i>Guggulu,</i>
<i>Shleshmadhara Kala</i>	<i>Meda, Majja, Aba Dhatu</i>	All joints have Synovial fluid for its proper functioning, this can be correlated with this <i>Kala</i> .	<i>Shigru, Sneha Kalpana</i>
<i>Purishdhara Kala</i>	<i>Asthi Dhatu with its Upadhatu</i>	The origin of <i>Asthi</i> – bones is said at the site of this <i>Kala</i> , hence the diseases of <i>Asthi</i> will require medication which have effect on this <i>Kala</i>	<i>Tikta Rasa drugs, Tikta Ksheer Basti, Asthisamharak, Kukkutanda twak Bhasma</i>
<i>Pittadhara Kala</i>	<i>Majja Dhatu (organs related to Majja Dhatu; Nervous system, Eyes, Brain)</i>	The origin of <i>Majja</i> is said to be at the site of this <i>Kala</i> , hence the disorders of <i>Majja Dhatu</i> will need medication which will act at this site	<i>Sneha Kalpana, Bramhi, Jatamansi, Jyotishmati, Shankhapushpi, Yashtimadhu</i>
<i>Sukradhara Kala</i>	<i>Rasa, Rakta, Shukra, Oja</i>	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 <i>Kala</i>	<i>Sheha Kalpana, Shilajit, Suvarna Bhasma, Vanga Bhasma, various types of Rasayana</i>

Majjadhara Kala in Ayurvedic Therapeutics

In Ayurvedic therapeutics, balancing *Majja Dhatu* and *Majjadhara Kala* is of paramount importance in the management of neurological and skeletal disorders. Treatments focus on both nourishing the *Majja Dhatu* and protecting the integrity of *Majjadhara Kala*. The following therapies are commonly used:

- Nasya (Nasal Treatment):** Administering medicated oils through the nasal route is believed to strengthen the brain and nerves, enhancing the health of *Majjadhara Kala*.
- Shirodhara (Oil Dripping Therapy):** This treatment involves pouring medicated oil on the forehead, helping to calm the nervous system and support mental health.
- Basti (Enema Therapy):** Medicated enemas are often used to nourish *Majja Dhatu* and support the function of the spinal cord and brain.
- Herbal Supplements:** Herbs like *Ashwagandha*, *Bala*, and *Brahmi* are frequently prescribed to enhance the nourishment of *Majja Dhatu* and protect *Majjadhara Kala*.

Conclusion

The concept of *Kala Sharir* offers profound insights into the intricate relationships between tissues, organs, and their functional capacities. Among these, *Majjadhara Kala* plays a pivotal role in sustaining the health of the nervous system and bone marrow, highlighting the advanced understanding of anatomy and physiology present in Ayurveda. Its relevance is not limited to theoretical frameworks but extends to practical therapeutic approaches in managing modern neurological and hematological disorders. By understanding and supporting the health of *Majjadhara Kala*, practitioners can address some of the most challenging aspects of human health, ensuring the holistic well-being of both body and mind.

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