

CRITICAL ANALYSIS OF MAJJAVAHA SROTAS & MAJJADHATU

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ABSTRACT

Srotas are broadly classified into two; *Bahya* and *Abhyantara* even though they are innumerable in number as suggested by *Charaka*. The concept of *Srotas* will further help in the critical understanding of physiological aspects of human body. It is said that the entire functioning of the our body is dependent on *Srotas* as they carry *Sukshma* and *Sthula Bhava* and fulfill the wear and tear of the body. *Charaka* and *Susrutha* varies in the understanding of *Abhyantara Srotas* especially in the consideration of *Majjavaha Srotas*. *Susrutha* has not explained a special entity or a channel to carry *Majja Dhatu* in the body rather he believes it is present inside the *Sthula Asthi*, but *Charaka* clearly explains the *Srotas* for *Majja Dhatu Vahana*. This article will help in the brief understanding about the concept of *Majjavaha Srotas*, its *Mula* and *Majja Dhatu*.

Key words: *Srotas*, *Majjavaha Srotas*, *Majja Dhatu*

INTRODUCTION

Srotas are the structural and functional entities responsible for health and disease. These are channels of circulation which carry *Dhatu* undergoing transformation to their destination. The origin of *Srotas* is from *Akasha Mahabhoota* as they are *Avakashayukta* as it is rightly said all the channels and vacant places of the body are born from *Akasha*. Precisely *Srotas* is defined as the hollow channel, except *Sira* and *Dhamani* originating from root space and spreads in the body and carries specific entities. *Charaka* in specific told there is innumerable number of *Srotas* as there are innumerable structural entities are present in the body. But for our easy understanding they are broadly classified into two; *Bahya*

and *Abhyantara*. *Majjavaha Srotas* is one among the *Abhyantara Srotas* and has been explained by *Charaka*, while *Susruta* has excluded it. The term *Majja* can be looked in different angles as it prevades all over the body.

SROTAS

The term *Srotas* carries wide range of meaning. *Srotas* are the structural and functional entities identified for the catering of metabolites in the body. In their colour and form they are stated to take after the *Dhatu* they transport; they may be cylindrical, either *Sthula* or *Anu*, *Dirgha* or *Prathana*.¹ Concept of *Srotomaya Purusha* is stressed by *Charaka* as none of the elements in the body can flourish or decay independently. The *Srotas*

are modifications of the *Pancamahabhuta* in which different elements undergo transformation, transmutation, circulation and transportation. The number of *Srotas* is innumerable because as many structural / physiological factors are present in human body so many are the number of *Srotas*. They carry the *Dosha* throughout, and they even carry *Atindriya* like *Satva* and *Atma*. There are 9 *Bahya Srotas* like *Sravana*, *Nayana*, *Vadana*, *Ghrana*, *Guda*, *Medra* and *Sharagadara* identified the 10th one as *Masthaka* as one *Bahya Randhra*. *Abhyantara Srotas* are 13 pairs according to *Charaka* and *Vagbhata* whereas *Susrutha* mentions 11 pairs.

Pra-

na, Udaka, Anna, Rasa, Rakta, Mamsa, Meda, Asthi, Majja, Sukra, Mutra, Purisha & Sweda are the *Sukshma Srotas* where *Susrutha* excluded *Asthi, Majja & Sweda* and included *Arthava*

Majjavaha Srotas

Majjavaha Srotas is one among the *Abhyantara Srotas* enumerated by *Charaka*. *Majjavaha Srotas* is not mentioned by *Susrutha* because he has explained *Srotas* on the basis of *Viddha Lakshna*. In the context of *Asthi Bhagna* he says that when injury occurs to *Asthi, Majja* will come out and cause complications. *Mula sthana* of *Majjavaha Srotas* are *Asthi* and *Sandhi*.² *Ashtanga Samgrahakara* says *Parva* and *Asthi* are the *Mula Sthana* of *Majjavaha Srotas*. *Mula Sthana* are the principle organs as far as *Majja Dhatu* is concerned and they have to be included in locations of *Majja Dhatu*. *Asthi Dhatu* as *mula* can be justified as it is the previous *Dhatu*. But *Sandhi* as the main location or *Mula* is not very clear. This can be hypothetically explained. *Asthi* is hard, it may become brittle. For *Asthi* to be durable *Sneha* quality is needed as *Vata* make it po-

rous and takes protection in this place. *Dhatu* previous to *Asthi* is *Meda* and next to *Asthi* is *Majja*. There should be some exchange between this *Medodhatu* outside the bone and *Majjadhatu* inside the bone. In routine such mechanism is always active for homeostasis of body. There can be waning and increment in qualities of body entities depending upon the everyday diet. For this reason *Asthi* can be important, as *Majja* can never exist if these do not exist.³

Sandhi are lined by *Shleshmadhara kala*, which is unctuous.⁴ Hypothetically this must be helping in transmitting outer *Medodhatu* to inner cavity of bone, as *Majja* is generated here.⁵ *Fourth kala* is *Sheshmadhara* and it exists in all joints. As oiling of axis of wheel keeps movements of wheel in proper condition, this adhering *Shleshma* keeps human joints in appropriate condition.⁶ Any disturbance to this lining could alter coolness in joints. Due to friction and movements there is always extra generation of *Teja*. *Majjadhatu* should be supported properly by balance between *Usna* and *Sita* and there is a reference correlating *Majjadhara kala* as *Pittadhara kala* according to *Dalhana*.⁷ This can be the hypothetical explanation for *Sandhi* being the *Mula* for *Majjavaha Srotas*. It is clear that after formation of *Majja* inside the bone is protected by *Asthi* itself. It is interesting to note that *Asthi* is considered to be *Vata Sthana* and *Majja* resides in it which has the qualities just opposite to *Vata*, so that it can control *Vata* which resides in *Asthi*.⁸

Third Kala according to *Susrutha* is *Medodhara kala* and *Meda* is situated in the *Udara* (abdomen) and *Anuasthi* (small and flat bones), where inside the *Sthula asthi* long bones *Majja* is present and in rest it is *Sarakta Meda*.⁹

MAJJA DHATU

Nirukti of Majja

Majja is considered to be the *Sara* of *Asthi* just like the *Sara* found inside the tree according to *Vachaspatyam* and *Shabda kalpadruma* says *Majja* is the unctuous part found inside *Asthi*

Utpatti of Majja Dhatu

Sharagadhara says, *Majja Dhatu* gets originated from its previous *Dhatu*; *Medas*.¹⁰ *Majja Dhatu* is formed from *Meda* by *Uttorottara Dhatu Poshana*. *Charaka* gives a different says *Vata* creates pores in *Asthi* and *Meda* gets filled inside and *Majja* gets formed.¹¹ *Parasara* opines that food becomes *Rasa* on next day, *Rakta* on the third day, *Mamsa* on the fourth, *Meda* on the fifth day, *Asthi* on sixth day, *Majja* on seventh and *Sukra* on eighth day. There are several other opinions on the time taken for the formation of *Dhatu* from *Ahara rasa* extending from *Ahoratra* to one month.

Panchabhoutic predominance of Majja Dhatu

According to *Dalhana*, *Majja* is predominant of *Ap Mahabhuta*.

Location of Majja Dhatu

Majja being a *Dhatu* it should be present throughout the body. It may be present in certain places in large quantity and functioning specifically to certain places. Such places can be concluded as the locations of *Majja Dhatu*. *Majja dhatu* is present *Majjavaha Srotas* and gets circulated throughout the body in its *Srotas*.

Guna and Karma of Majja

Susrutha says the chief quality of *Majja* is providing *Bala* and *Snehana* to the *Shareera*.¹² *Vishesh Karma* of *Majja* is *Purana*.¹³ It does the *Purana* of *Asthi* and *Sukra Pushti*.

Parimana of *Majja Dhatu* is one *Anjali*.¹⁴

Upadhatu and Mala of Majja Dhatu

Except *Sharangadhara*, none of them gives any opinion about *Upadhatu* of *Majja*. According to him *Upadhathu* of *Majja* is *Kesha*.¹⁵

Charaka and *Susruta* says the *Mala* of *Majja Dhatu* is unctuous secretion of *Netra* and *Twacha*.¹⁶ *Vagbhatta* says *Sneha* or unctuous secretion of *Purisha* is also considered to be the *Mala* of *Majja*.¹⁷

DISCUSSION AND CONCLUSION

Charaka gives a different dimension for the formation of *Majjadhatu*, he says *Vata* creates pores in *Asthi* and *Meda* gets filled inside and we can say *Majja* gets formed by the collective effort of *Asthi*, *Vata*, *Meda* and *Panchamahabhuta*. It should be understood further that *Meda* is the chief entity which results in the formation of both *Asthi* and *Majja*. It will be always right to say *Meda* is essential for the existence of both *Asthi* and *Majja*. *Meda* being the previous *Dhatu* contributes for the formation of *Asthi* by *Uttorothara Dhatu Poshana* and it gets filled inside the *Asthi* to form *Majja*. *Asthi* and *Majja* does the *Dharana* and *Purana* of the entire body indirectly with the help of *Medas*.

Just like any other *Dhatu* it is generated in the intra uterine life. Growth and nutrition is by *Ahara Rasa*. Formation of *Majja Dhatu* is like when *Asthi Dhatu* is formed in *Asthivaha Srotas*, it contributes for the formation of *Majja Dhatu* from the *Prasada Bhaga* of *Asthi Dhatu* which is a well-known principle or to be more exact nutrients coming from *Ahararasa* and from *Asthivaha Srotas* are acted upon, by *Majjadhatwagni* and give rise to *Majja Dhatu*.

Being formed from the *Medas* inside *Asthi*, it is more like to have the predominance of *Jala Mahabhuta*.

Majja is present all over the body but specifically it is getting circulated throughout the body in its *Srotas*. *Mula* of *Majjavaha Srotas* is told to be *Asthi* and *Sandhi*, so functional activity of *Majja* will be more in *Asthi* and *Sandhi*. Concept of *Majjavaha Srotas* has been laid down by *Charaka*, where in *Susrutha* doesn't have the opinion of the existence of *Majjavaha Srotas*. He says *Majja* is present in *Sihula Asthi* and *Sarakta Meda* is present in *Anuvasthi* and *Udara*.

According to modern it is said that there are two types of marrow; Yellow bone marrow and Red bone marrow which can be correlated to *Majja* and *Sarakta Meda*. The evidences say that Yellow marrow is found in the hollow interior of the diaphyseal portion or the shaft of long bones. Red marrow is found mainly in the flat bones, such as the hip bone, sternum (breast) bone, skull, ribs, vertebrae, and shoulder blades, as well as in the metaphyseal and epiphyseal ends of the long bones, such as the femur, tibia, and humerus, where the bone is cancellous or spongy. By the time a person reaches old age, nearly all of the red marrow is replaced by yellow marrow. However, the yellow marrow can revert to red if there is increased demand for red blood cells, such as in instances of blood loss. This shows that the findings that has been done by our *Acharyas* were way great to the modern times.

While assessing the *Majja Guna* and *Karma*, its evident that it helps in the maintenance of the shape of *Asthi* along with *Vata*. *Vata* and *Majja*, two different entities having the opposite quality are present inside the *Asthi* (*Vata* takes *Ashraya* in *Asthi* and *Majja* is formed inside the *Asthi*). They both complement each other inside the *Asthi*. *Khara guna* of *Vata* and *Snigdha guna* of *Majja* helps in retaining the hard texture

of *Asthi* as well as easy movement of entire body. The entire locomotory system simultaneously does the two opposite function. They are hard and stiff by structure but does the movement of entire body in day to day life. This owe to the existence of *Vata* and *Majja* inside *Asthi*.

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Source of Support: Nil

Conflict of Interest: None Declared