

A COMPREHENSIVE STUDY ON SANDHI SHAREERA WITH SPECIALREFERENCE TO MANDALA SANDHI: A REVIEW ARTICLE

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ABSTRACT

Sandhi Shareera is a unique topic in *Ayurvediya Rachana Shareera*.

The meaning of the word Sandhi is “the meeting point of two or more structures.” According to the modern, joint is a point where two or more bones are articulates with each other. Acharya Sushruta has quoted that although there are numerous Sandhi in our body they cannot be counted only Asthi related Sandhi should be considered. Based on the structure Acharya Sushruta had described eight types of Sandhi. *Mandala Sandhi* is one among these Sandhi and it is circular structurally. Mandala sandhi are located in *Kanta, Netra, Hrudaya*, and *Klomanadi*. The concept of mandala sandhi is unclear, as to which particular joints should be considered under *Mandala Sandhi* as per contemporary science. Explanation in classics needsto be revalidated

and the concept needs to be re-established with the help of literature. Thorough knowledge of the structure and function of the joint is required to diagnose and treatthe diseases of joints.

INTRODUCTION

Ayurveda is the science of life, in the sense that it systematizes and applies the knowledge about health and science. Its first and foremost aim is to preserve good health and increase the lifespan, and secondly combat diseases. There are numerous scientific concepts in *Ayurveda* that need detailed scrutiny to assess their utility in the field of science and *Sandhi shareera* is one among them.

The word *Sandhi* is derived from the root word Sam+Dam+Ki. Sam upasarga had been used. It is originated from Dha dhatu and Ki pratyaya. The meaning of *Sandhi* is *Sandhana Miti* i.e joining, binding, or holding together. The place where two body parts join with the help of *Shleshma* is called *Sandhi*.^[1] According to *Acharya Sushruta* only *Asthi related Sandhi* should be taken into account, whereas other *Sandhi* related to *Peshi*, *Snayu*, and *Sira* are innumerable and should be excluded while counting.^[2] There are 210 *Sandhi* in the human body. Out of these 68 are present in *Shakha*, 59 in the *Kosta* and 83 in *Greeva Prathyurdwa*.^[3] According to *Acharya Charaka* - 200 *Sandhi* are present in the body.^[4]

Classification of sandhi

Sandhi means *Samyoga* or junction or union or meeting place.

1. Based on kriya

The *Sandhi* are of two types.

- i. *Cheshtavanta Sandhi*
- ii. *Sthira Sandhi*

The *Sandhi* which are situated in the *Shakhas*, *Hanu* and *Kati* are *Cheshtavanta Sandhi*, these types of joints permit free movements in various directions, while all the remaining *Sandhi* categorized under the *Sthira Sandhi*. *Sthira Sandhi* will not permit movements.^[5]

The *Cheshtavanta Sandhi* are further classified into two types based on their extent of movement.

- ❖ *Bahu chala* (Freely movable)
- ❖ *Alpa chala* (Slightly movable)

The *Sandhi* of *Shakhas*, *Hanu* and *Kati* are of *Bahuchala* variety and the *Sandhi* of *Prushta* etc. are *Alpachala* variety.^[6]

2. Based on rachanasura

Based on the structure, *Acharya Sushruta* had described eight types of *Sandhi*. They are *Kora*, *Ulukhala*, *Samudga*, *Pratara*, *Tunnasevani*, *Vayastunda*, *Mandala* and *Shankhavarta*.^[7]

Mandala sandhi

According to *Dalhana* the *Sandhi*, which are oval or round are called as *Mandala Sandhi*. This type of *Sandhi* is present in *Kantha*, *Hrudaya*, *Netra* and *Kloma nadi*.^[8]

Kanta

The word *Kanta* is derived from *Kati* = dhatu + vyat = pratyaya = kanta. It is the structure responsible for production of voice, which is present in the front of *Greeva*, having the synonym of *Gala*. However the term *Gala* means, that which helps in processes of swallowing.^[9]

Acharya Sharangadara while explaining, regarding the physiology of respiration there is reference of *Kanta* through which *Prana vayu* is excelled. In the context of location and function of *Prana vayu*, it is mentioned that *Prana vayu* being located in the *Kanta*, and *Urah* responsible for sneezing, spitting, and swallowing food.^[10]

There are 210 joints are present in our body. Among that 3 joints are present in the *Kanta* and it is of *Mandala* type of joint.

Hrudaya

The Word *Hrudaya* is formed by applying *Kayana* to 'Hri' Dhatu, Hri – Taking something; Da - To give; Ya - Always functioning. Hence the literal meaning of the word *Hrudaya* is taking and giving something continuously.

Hrudaya is formed in *Chaturtha Masa* of *Garbhavrudhi* and from *Prasadabhaga* of *Shonita* and *Kapha*.^[11] It is situated in the *Urah*, between the two breasts and the opening of the *Amashaya*.^[12] The *mandala* variety of *Sandhi* situated in heart.^[13]

Netra

The word *Netra* is derived from the root "Ni" suffixed with "*krit karane*" and it has meaning "Which takes or derives, from one towards knowledge". It is defined as '*Neeyate nayati va aneneti*'.

The two *Netra* are situated in the *Shira* which is considered as the *Uttamanga* of the body. The shape of the *Netra* is precisely defined with three terms viz. *Suvritam*, *Gostanakaram* and *Nayana Budbudam* which signifies shape and consistency of the *Netra*.^[14] While enumerating the distribution of sandhi, *Acharya Susrutha* has mentioned 02 sandhi present in the *vartha* mandala which is related to *tarunasthi*.^[15]

Kloma

The word *Kloma* is derived from root word "*klavate iti kloma*" and it has meaning "to move /

transformation". The heat of body is further enhanced by *Samana Vata* act on *Rakta*, differentiate it and results in formation of structure which is slightly swollen and is called *Kloma*.^[16] While explaining about anatomical position, we get description that Below the *Hridaya* and towards the left there lie structures like *Pleeha* and *Puppusa*. Towards its right there lie organs/structures like *Yakrit* and *Kloma*.^[17]

Mandala variety of *Sandhi* are present in the *Klomanadi* and it is impacted between *Kloma* and *Hridaya* contains 18 *Sandhi*.^[18]

DISCUSSION

The human body is made up of *Saptha Dhātu* and *Asthi* is one of them. *Asthi* is a structural component of human body, not only constitutes to the frame work of the body but also provides rigidity and support. As per *Ayurveda* main function of *Asthi* is *Deha Dharan*, *Majja Pusti* and provides support to *Mamsa* and *Snayu*.

Asthi is a hard substance, which remains even after most parts like flesh muscles etc. are decomposed after burying the body. *Acharya Sushruta* mentioned 300 *Asthi* and *Charaka* 360 *Asthi* in human body. As per modern anatomy, bones are 206 in number and present in various shapes and sizes, such as long, short, flat and many others.

There is a huge difference between the number of bones mentioned in *Ayurveda* and in modern anatomical science. This difference of opinion is all about how these two different sciences looked at the anatomy of the body and the arrangement of bones from their view points. According modern science cartilage, teeth and nails etc are not included in bones but as per *Ayurveda*, all the hard entities such as bone, cartilages, nails, tooth etc, which does the *Dharana* are considered as *Asthi*.

Tarunasthi is a type of *Asthi* according to *Ayurveda*. It is synonymous with the cartilages of modern science. All the three types of cartilage, i.e., Hyaline cartilage, Fibro- cartilag, and elastic cartilage, constitute an Ayurvedic term '*Tarunasthi*'.

Based on the review of literature anatomical fixation of following organs: Kanta

The most suitable structure identified in the anterior aspect of the neck, in front of the cervical vertebrae and that which act as both respiratory passage and an organ of phonation is larynx.

Hridaya

Hridaya is a fleshy muscular organ resembling like red lotus bud and hangs with its apex downward. From which vessels spread all over the body and it is located in the thorax between the two breast and near to the amashaya dwara(esophageal orifice).

Netra

Acharya susrutha has mentioned 02 sandhi in the vartma mandala which is related to tarunasti. Upper and lower eyelids jointly form a circle in front of the eye ball, which is termed as vartma mandala.

Kloma nadi

Acharya Susrutha stated relative position of Kloma, '*Hrudayasya dakshinatho (adho) yakrit, dakshinatho (upari) kloma*' means below the heart on the right side i.e yakrit, above and right side of heart i.e Kloma. Nadi (tube) which is connected to Kloma is considered as Kloma nadi. Kloma was considered as right lung based on the previous reviews. The tube which is attached to lungs is called as trachea.

Based on above discussion Kanta, Hrudaya, Netra and Kloma nadi considered as Larynx, Heart, Eyelids and Trachea simultaneously. The attachment or articulation or junction between the tarunasthi situated in Kanta, Hrudaya, Netra and Kloma nadi considered as mandala sandhi.

CONCLUSION

Sandhi shareera means the study of joints in the body. Acharya Sushruta considered mainly the meeting place of *Asthi* as the *Sandhi*. The articulation between all the hard entities such as cartilages etc considered under *Sandhi*. *Mandala Sandhi* is the cartilaginous joints. These cartilaginous joints are circular in nature and situated in Larynx, Heart, Eyelids and Trachea.

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