



CLINICO-ANATOMICAL ASPECTS OF SANDHI SHARIR (JOINTS)

Review article

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ABSTRACT

In Ayurveda body is divided into various external and internal structures which includes *Twacha*(Skin), *Kandara*(Tendons), *Asthi*(Bones), *Sandhi*(Joints) etc.

Sandhi are that part of body where two or more than two *Asthi* are united. *Sandhi* plays important role in the body movements. Various other structures which are directly or indirectly related or influenced its structural aspects are mentioned in the Ayurvedic texts but in the scattered manner. These structures which are associated with *Sandhi-Sharir* has some influence in the anatomical and clinical aspects of *Sandhi*. That means when we diagnosed, treat the diseases of *Sandhi* the clinic-anatomical aspects of these structures should be kept in mind to get better results. In this review article clinico-anatomical aspects of all these structures which are associated with *Sandhi* are to be discussed as per the references given in the Ayurvedic texts so that Ayurvedic clinicians got some pathways for the diagnosis and treatment of the diseases of *Sandhi*.

Key Words: *Sandhi, Kapha, Asthi, Joint, Disease*

INTRODUCTION: Ayurveda is eternal science of life which is useful for keeping the body that means *Sharir* healthy and prevention of any disease involved in the *Sharir*. According to Ayurveda body is made of various structures. Pathology any occurred in these body parts will lead for the vitiation of *Dosha-Dhatu* and *Mala*.

Sandhi are essential body part for the movement and for the stabilization of the Body and the *Sandhi* Disorders are widely found in the society now a days. For proper understanding the treatment of these *Sandhi* Disorders detail Clinico-anatomical knowledge of *Sandhi Sharir* is essential.

Sandhi is considered as the body part where there is union of *Asthi*. 1 *Sandhi* is that body part where two *Asthi* get united or merge with each other. 2 Number of *Sandhi* in the body as per Ayurveda are

210. 3 These 210 *Sandhi* are divided in to main two types according the movement-

- 1) *Chestavanta* (*Chala Sandhi*)
- 2) *Shtira Sandhi* (*Achala Sandhi*)

And further these 210 *Sandhis* were categorized into another Eight Types according to their structural aspects. 4&5. The fourth Kala namely *Shleshmadhara* Kala is also related with *Sandhi* which maintains 'Stickiness' and also gives strength to the *Sandhi*. 6 Due to this *Shleshmadhara Kala Sandhi* can make the free movement as like as wheel lubricated with oil makes movement around his axis smoothly. 7

According to Ayurveda *Shleshma* is responsible for the *Sandhi bandhana*. 8

In the human body *Sira-Snayu-Asthiparva- Sandhi* are covered with *Mansa-peshi*. 9

Ashti Parva and *Sandhi* give *Sleshana* that means Viscosity due to *Shleshmak Kapha*.¹⁰

In the human body *Vyan Vayu* is responsible for the movements like *Prasarana- Aakunchana- Uteshepa- Awakshesha* etc. ¹¹ *Prasarana* means lengthen the body parts. *Aakunchana* means reduction of the body parts. *Uteshepa* means movement of the body part in upward direction. *Awakshesha* means movement of body parts in downward directions.¹²

In the dislocation of *Sandhi* that means *Sandhi-mukta bhagna* Sushruta mentioned the general sign and symptoms are as- “ There is pain during the movements like *Prasarana- Aakunchana* , Intolerance to pressure or touch. ¹³

The symptoms of *Sandhi-gata Vata* are as below:-“ There is *Vatapurna Druti Spasha, Shopha* and Pain during *Prasarana* and *Aakunchana*.¹⁴

DISCUSSION:

From the references mentioned in the various Ayurveda texts it is cleared that *Sandhi* is one of the important internal structure of the body which is formed by union of *Ashti* and it is very useful for the movement of the body. ¹⁵

The various other structures mentioned in the Ayurvedic texts with reference to *Sandhi* are also associated in the formation of this union of *Asthi*.

The Cinico-anatomical importance of the all the structures which are associated in this union will be discussed as below:-

A) *Asthi*:-

Asthi are important structure in the formation of *Sandhi* as two ends of the *Asthi* takes parts in the formation of *Sandhi* .

Breakdown of this union will lead to *Sandhi-mukth Bhagna* which will cause

pain during the movements like *Prasarana- Aakunchana* , Intolerance to pressure or touch and to treat this clinicians should be focused on the restoration of this union. ¹⁶.

B) *Shleshmadhara Kala* :-

Shleshmadhara Kala is again another structure associated with the *Sandhi Sharir* which is responsible for maintaining stickiness and which is important for the normal movement of the *Sandhi* around his Axis .¹⁷

That means if there is pathology in this *Shleshmadhara Kala* there may be restricted movement or painful movement of the *Sandhi* may be found.

C) *Sandhi-bhandhan*:-

Shelshma is responsible for the structure called as *Sandhi-bhandhan* that means there is dominance of *Shelshma* in the Anatomical Aspects of *Sandhi-bhandhan*.¹⁸ and which is responsible for bond for union of *Asthi*.

If there is injury or damage to the *Sandhi-bhandhan* there is *Kshaya* of *Shelshma* and when there is *Kshaya* of *Shelshma* there is increase of *Vata* . From this it clear that damage or injury to these *Sandhi-bhandhan Vata Vridhikara and Kahpha Kshaya* sign and symptoms may appear. That means injury to this *Sandhi-bhandhan* the focus of the clinician should be to control increased *Vata Dosha* and Restore normal functioning of *Shelshma* in the *Sandhi-bhandhan*.

D) *Sleshmak-Kapha*:-

Ashti Parva and *Sandhi* is given *Sleshana* that means Viscosity due to *Shleshmak Kapha*.¹⁹

As the *Sandhi* is union two ends of *Asthi* i.e. *Ashti Parva* and to avoid any friction during the movement of *Sandhi* there is a need of Viscosity and this need will be fulfilled by the *Sleshmak-Kapha*.

If there is *vikruti* is the *Sleshmak-Kapha* the *Vata dosha* will be vitiated and which may cause symptoms of *Sandhi gata Vata*. That causes *Vatapurna Druti Spasha*, *Shopha* and Pain during *Prasarana* and *Aakunchana*.²⁰

E) *Peshi*:-

Peshi are that structures which covered the *Sira-Synau-Asthi Parva* and *Sandhi* and responsible for *Bala* of the body.²¹

As the *Peshi* covered the *Sandhi* the injury or damage to the *Peshi* may influence the movement of *Sandhi*.

F) *Vyan-Vyau*:-

In the human body *Vyan Vayu* is responsible for the movements like *Prasarana- Aakunchana- Uteshepa- Awakshepa* etc. ²²

The clinicians should kept in the mind the functions of *Vyan-vyau* when diagnosing diseases of joint related with Central Nervous System and other functional disabilities associated with the joints..²³

Conclusion:- From the above discussion it is cleared that *Sandhi* is a body parts where two or more than two *Asthi* are united and which is very useful for the movements of body parts. For the proper union and functioning of *Sandhi* following structures are useful which makes the Anatomical aspects of *Sandhi-Sharir*:-

1) *Asthi-Parva* :- This is the main component of *Sandhi Sharir* as *Sandhi* are union of *Asthi*.

2) *Shelshmadhara Kala*:- This structure is responsible for maintaining stickiness in the *Sandhi* and gives strength to the joint.

3) *Sandhi-bhandhan*:- *Sleshma* is responsible factor in the Anatomical Aspect of *Sandhi-bhadhan* and *Sandhi-bhandhan* is responsible for the bond which maintain union of two *Asthi*.

4) *Sleshmak Kapha* :- *Ashti Parva* and *Sandhi* give *Sleshana* that means Viscosity due to *Shleshmak Kapha*

5) *Peshi* :- *Peshi* cover the *Sandhi* and gives the *bala* to *Sandhi*.

6) *Vyan-Vayu* :- It is responsible for initiation and proper functioning of *Sandhi*.

Clinico-anatomical Aspects of *Sandhi Sharir* should be as below considering above aspects:-

A) While dealing with the *Sandhi-Mukhta Bhagna* Anatomical Aspects of *Asthi* may be taken into consideration while restoring normal aspects of that *Sandhi*.

B) When there is no dislocation and if there is painful and restricted movement of the *Sandhi* association of *Shelshmadhara Kala* may be considered.

C) If there is severe pain after the injury during the movement to the *Sandhi* despite any dislocation, Association of *Sandhi bhandhan* may be considered .

D) Whenever there is no history of injury or any dislocation and if there is signs and symptoms like *Vata purna dhurti Sparsha*, *Shopha* and pain during routine movement of *Sandhi* the association of *Sheshmak Kapha* may be considered.

E) When there is diseases of the *Sandhi* related with the pathological aspects of Central Nervous System association of *Vyan vyau* may be considered.

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