



## RESEARCH ARTICLE

### A REVIEW ON SANDHI SHARIR W.S.R TO JANU SANDHI (KNEE JOINT) AND ITS APPLIED ASPECT

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#### ABSTRACT

In Ayurvedic Classics *Atreya*, *Dhanvantari Sushruta* and all other communities have made it important the knowledge of body to have undoubtedly for the sake of knowledge. The definition of *Sandhi* in various Ayurvedic literature are given as “*asthisamyogasthana*” or “to unite” or “the meeting point of two or more structures. counted so only *AsthiSandhi* or bony joints should be considered under the term *Sandhi*. In our Ayurvedic literature different *Acharyas* have mentioned different numbers of *Sandhi*. According to *Acharya Sushruta Sandhi* are two hundred and ten in number, which are responsible for various movements, and are distributed throughout the body. In *Ayurvedic Samhitas* the description of anatomy of *Sandhi* in detail is not found. It is observed that the incidence of joints disorders are increasing in today’s world. It is the burning problem for people and society. A thorough knowledge of the structure and function of the joint is required to diagnose and treat the diseases of joints.

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## INTRODUCTION

In Ayurvedic classics like *Charaka Samhita*, *Sushruta Samhita* etc. a huge knowledge regarding *Shareer*, *Nidana* and *Chikitsa* are available. For an expert *Vaidya* to treat a disease through knowledge about the disease and *Shareer* of its related part is very mandatory. One who knows *Shareer* (i.e. anatomy and physiology of human body) in detail, only he can know and understand *Ayurveda* which can bring happiness to the universe.

## AYURVEDIC REVIEW

According to *Acharya Sushruta* only *Asthi Sandhi* should be taken into account where as other *Sandhi of Snayu*, *peshi* and *Sira* are innumerable and should be excluded while counting. Classification of *Sandhi*- Main classification is of two types.

- *Kriyanusar* (Based on Kriya) & 2. *Rachananusar* (Based on Rachana)
- *Kriyanusar Vargeekaran* (Based on Movement): The *Sandhis* are of two types.
- *Chal* (*Cheshtayukta Sandhi*) *Diarthrosis*
- *Achal* (*Sthira Sandhi*) *Synarthrosis*
- The *Sandhis* which are situated in the *Shakhas*, *Kati* and *Hanu* are *Cheshtayukta Sandhi* while all the remaining *Sandhi* comes under the *Sthira* in nature.

- The *Cheshtayukta Sandhis* are further classified into two types based on their extent of movement. They are
- *Bahuchala* (freely movable)
- *Alpachala* (slightly movable)

The *Sandhi* of *Shakhas*, *Kati* and *Hanu* are of *Bahuchala* variety and the *Sandhi* of *Prushtha* etc. are *Alpachala* variety. *Rachananusar Sandhi Vargeekaran* (Based on structure):

Based on the structure *Acharya Sushruta* had described 8 types of *Sandhi*. They are *Kora*, *Ulukhala*, *Samudga*, *Pratarata*, *Tunnase-vani*, *Vayastunda*, *Mandala* and *Shankhavarta*. *Kora Sandhi* (Hinge joint) As per the description of *Haranchandra* in commentary of *Sushrut Samhita*, *Kapat* etc. is taken for *Nibandhan* of a special device called *Kora* is known that the *Kabja* (hinges). The *Kora Sandhi* is seen in the following region- *Anguli* (*phalangeai*), *Manibandha* (wrist joint), *Gulpha* (Ankle joint), *Janu* (Knee joint) and *Kurpara* (Elbow joint). *Ulukhala Sandhi* (Ball and socket joint) These types of *Sandhi* look like stone grinder used in the kitchen in olden days that’s why it is named so. The *Ulukhala* variety of joints is found at *Kaksha* (Shoulder joint), *Vankshana* (Hip joint) and *Dashana* (Teeth). *Samudga Sandhi* (Saddle joint) This variety of *Sandhi* looks like a box. This variety of *Sandhi* looks like a box. These *Samudga Sandhis* is seen at *Ansapeeth* (Acromioclavicular joint), *Guda* (Sacrum), *Bhaga* (Pubis) and *Nitamba* (Ilium). *Pratarata Sandhi* (Gliding or plane joint) According to *Dalhana*, the articulating surfaces of this variety of joint are flat in nature and floating, supported by cushion and friction is seen in between the articulating surfaces.

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In *Sushruta's* opinion his variety of joints are located at *Greeva* (Cervical vertebrae), *kasheruka* (Vertebrae) and *Prushthavansha* (Thoracic vertebrae). *Tunnasevani Sandhi* (Sutures) *The commentator Gananath Sen* has opined that articulating surfaces resembles dentate edges which are supported and stucked together or embedded into one other. This type of *Sandhi* is found at *Sirakapala* (Skull) and *Katikapala* (Hipbone-sacrum, coccyx). *Vayastunda Sandhi* (Condylar joint) According to *Gananath Sen* the *Hanu* which is situated within *Shankhasthi* both side of chin and creat *T.M.J.* (Temporo-Mandibular joint) is considered as *Vayastunda Sandhi*. Even *Sushruta* has got similar opinion about *Vayastunda Sandhi*. *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* (Throat), *Hrudaya* (Heart) and *Netra* (Eye) *Clomnadi* (Trachea). *Shankhavarta Sandhi* According to *Haranachandra*, these are circular in nature which resembles the circles of a snail or *Shankha*. According to *Sushruta* they are found in *Shrotra* (Ear) and *Shringataka* (Cavernus sinus).

**Sandhi Sankhya:** According to *Aacharya Charaka* - 200 *Sandhi* in body. According to *Aacharya Sushruta* -Body comprises 210 *Sandhi*. Of these sixty-eight are in the four extremities; fifty-nine in the trunk (*Koshtha*); and eighty-three in the neck and the region above it.

## DISCUSSION

In Ayurvedic classics *Sandhis* have been classified into eight types by taking account of shapes of *Sandhis* mainly, movement of *Sandhi* has not been considered whereas in modern science, the classification of *Sandhis* has been done by taking account of both structure and function (movement). In Ayurvedic Classics *Atreya*, *Dhanvantari Sushruta* and all other communities have made it important the knowledge of body to have undoubtedly for the sake of knowledge. The definition of *Sandhi* in various Ayurvedic literature are given as "*asthisamyogasthaana*" or "to unite" or "the meeting point of two or more structures. counted so only *Asthi Sandhi* or bony joints should be considered under the term *Sandhis*. In our Ayurvedic literature different *Aacharyas* have mentioned different numbers of *Sandhi*. According to *Aacharya Sushruta Sandhis* are two hundred and ten in number, which are responsible for various movements, and are distributed throughout the body. In *Ayurvedic Samhitas* the description of anatomy of *Sandhi* in detail is not found. It is observed that the incidence of joints disorders are increasing in today's world. It is the burning problem for people and society. A thorough knowledge of the structure and function of the joint is required to diagnose and treat the diseases of joints.

The location of *Shringataka* is not clearly described in classics. So on going through the study of *Shringataka Marmas* colars have *Shringataka Marma* in nose. So the *Sandhi* should be present in nose as *conchi*, which is present as irregular form like *Shankhavarta*.

## CONCLUSION

The various classical texts of Ayurveda have defined *Sandhi* are meeting place of two or more *Asthis*. Ayurveda and modern science both are same classification basis on the structural and function. *Kora Sandhi* can be considered as hinge joint, *Ulukhala Sandhi* may include ball and socket variety of synovial joint and gomphosis variety of fibrous joint. *Ansapeetha*, *Guda*, *Bhaga*, *Nitamba* has *Samudga Sandhi* can be considered as acromioclavicular, sacrococcygeal, pubic symphysis, and sacroiliac joint respectively. In *Pratara*, *Greeva* and *Prushthavansha* may include intervertebral joint. Sutures as *Tunnasevani* and *Hanu* in *Vayasatunda* may be taken a tempomendibular. *Sankhavartha* include *Shrota* and *Shringataka* can be correlated with cochlea and region of nasal conchae.

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