

# Observational Study of Anatomical Structures Leading to Stabdhbahuta At Amsa Sandhi W.S.R. to Amsa Marma And Frozen Shoulder

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Received : 10 June 2023

Accepted : 28 June 2023

## Abstract

*Ayurveda* is the most ancient medical science of the world. It deals with preventive and curative aspects of health by its own principles and approach<sup>(1)</sup>. *Acharya Sushruta* has great contribution to *Ayurveda Sharir* include description and classification of various body structures like *Asthi, Sandhi, Peshi, Snayu, Koshta* etc<sup>(2)</sup>. *Amsa marma* is a *Snayu marma* structurally, which is considered as ligaments. It is situated between the *Baahu, murdha and greeva*. This ties *Amsapitha and Skandha* together. Injury to this *marma* may leads to *Stabdhbahuta* i.e. stiffness of the upper limb with loss of movement. *Avabahuka* is considered to be a disease that usually affects the shoulder joint (*Amsa sandhi*). Due to vata vitiation *amsa bandhana* gets dry and this leads to *Avabahuka*<sup>(3)</sup>. Similarly, in modern aspect, *Avabahuka* can be correlate as frozen shoulder as it is also a disease of shoulder joint in which pain, stiffness and movement of shoulder becomes limited. Present article describe observational study of disturbances of anatomical structure in *amsa sandhi* in *Avabahuka* and frozen shoulder.

**Keywords :** *Ayurveda, Amsa marma, Avabahuka, Stabdhbahuta, Frozen shoulder.*

## Introduction :

In *Ayurveda* the *sharir* is given prime importance. This complete knowledge about *sharir* at all times is very much essential for a physician as well as a surgeon in order to provide a healthy life for mankind. *Sharir rachana* is fundamental division of *Ayurveda*. Concepts of *Rachana sharir* are essential for treatment<sup>(4)</sup>. In ayurvedic classics to understand the proper structure of *sharir*, whole body divided into six major parts known as *shadanga sharir*. The joining part of *bahu and antaradhi (trunk)* are known as *amsa pradesha*. In this area a sandhi of wide range of motion found which is described as *amsa sandhi*. This *sandhi* is most important in daily activities<sup>(5)</sup>.

*Amsa sandhi* is a type of *Ulukhal sandhi* performs wide range of action and is situated in *kaksha* and

*vankshan*<sup>(6)</sup>. This is a major joint of upper limb. *Amsa marma* is a *Snayu marma* structurally, which is considered as ligaments. It is situated between the *Baahu, murdha and greeva*. This ties *Amsapitha and Skandha* together. Injury to this *marma* may leads to *Stabdhbahuta* i.e. stiffness of the upper limb with loss of movement. *Acharya sushruta* has explained the term *amsa bandhan* in *Nidansthan* while describing the disease *Avabahuka*<sup>(7)</sup>. It includes all the soft tissues like muscles, tendons and ligaments.

According to *Vagbhata*, injury to *Amsa marma* leads to *Bahukriyahara* i.e. loss of function of upper limb. *Avabahuka* is considered to be a disease that usually affects the shoulder joint (*Amsa sandhi*). Due to vata vitiation *amsa bandhana* gets dry and this leads to

*Avabahuka*. The shoulder joint is structured in such a way as to allow it to be the most mobile joint in the body. The shoulder joint achieves a large range of movement required of the root of the upper limb in daily activities<sup>(8)</sup>.

### Relations of *Amsa Sandhi*: -

- 1) **SNAYU RELATED TO AMSA SANDHI:** - In all extremities and in all joints, there are Branched ligaments are presents. It means all joints of extremities get strengthened by *prataanvatee snayu*<sup>(9)</sup>.
- 2) **SANDHI AND KALA RELATIONSHIP:** - The *fourth kala* i.e. *Shleshmadhara kala* presents in the joints and secretes *shleshaka kapha*. *Sleshmadhara Kala* is 4<sup>th</sup> Kala. Two or three articulating ends of *Asthi* from the Sandhi are covered around by a strong stout, glistening membrane of fibrous tissue called '*Sandhikosha*' (capsule). This *Kala* secretes *Shleshma* which is collected in the *Kosha* (sac) of *Shleshmaka Kapha*, so that the adjoining ends of *Asthi* in the *Sandhi* can move freely<sup>(10)</sup>.
- 3) **Dosha Related To Sandhi:** -  
*Vata Dosha:* It is responsible for normal movement of a joint.  
*Prana* – controls all movement.  
*Vyana* – *Vyana* is responsible for all movements of the body and movements are mostly carried out with the help of *Sandhi*. This can also be proved with the help of symptoms of *Kaphavarita Vyana* i.e. *Sandhi Asthi Ruja* and *Gatisang*. Hence, *Vyana* is related with *Sandhi*.  
*Pitta Dosha:* It is responsible for *Sandhista Pachana, Parinamana*.  
*Kapha Dosha:* (*Shleshaka Kapha*) - *Shleshaka Kapha* present in the bony joints of the body is said to keep them firmly united, to protect their articulation and to appose their separation. These functions are stem out of the general characteristic qualities of *Kapha*, such as its *Snigdhatva, Shlakshnatva, Pichchilatva* and *Mritsnatva* corresponding to viscosity, smoothness, slimyness and lubricability respectively. *Shleshaka kapha* presents in all sandhi (joints) of body<sup>(11)</sup>.

Similar to *Avabahuka*, in modern medical science a condition described known as "Frozen shoulder or Adhesive capsulitis". Frozen shoulder is a

condition characterised by stiffness and pain in the shoulder joint. In which the movement of the shoulder becomes limited. The condition can vary in severity from mild to severe pain and or from some to severe restriction in movement<sup>(12)</sup>. According to the structure, a *snayu marma* is present near the *amsa sandhi* known as *amsa marma*. The *amsa marma* is *vaikalyakara marma*. Any trauma to this will produce disability or deformity of the *bahu* (arm). *Amsa marmas* when injured are said to produce deformity of the body or part of the body.

The *Vaikalyakara marmas* are possessed of soumya properties; they retain the vital fluid owing to their cooling and steady virtues. Hence they only lead to deform the organism if they get injured due to any event instead of death. Structures falling in the area of *Amsa Marma*<sup>(13)</sup>-

- Coraco-clavicular ligaments
- Conoid ligaments
- Trapezoid ligaments
- Acromio- clavicular ligaments

Coraco-clavicular ligament According to *Ashtang hrudaya* traumatological effect of *amsa marma* is "*Baahukriyahara*" means same as that of meaning of *Stabdhabahuta*. Lastly, we can consider that *Stabdhabahuta* is the impairment of the upper limb<sup>(14)</sup>.

### Causes for The *Stabdhabahuta*: -

1. Injuries.
2. Heavy weight lifting.
3. Fall on outstretched hand.
4. over exertion.

*Amsa marma* includes the structures related to shoulder region are the most exposed area to common injuries. The activities like weight lifting, Fall on outstretched arm causes the injury to ligaments and muscles of shoulder joint, leads to the disability of the *amsa sandhi* and *Stabdhabahuta*.

Symptoms like *Stabdhabahuta* (stiffness) at *Amsa sandhi* is almost an uncovered area of study. Hence the Anatomical evaluation of *Stabdhabahuta lakshna* under *Amsa marma* with reference to frozen shoulder is need of reaseach.

## Discussion:

The word *Amsa* means a specific area of shoulder. In this region *amsa sandhi* presents which is surrounded by the *sira* and *snayu*, which makes this *sandhi* more stable and help in their functioning. *Sandhi* is responsible for all the movements that include *akunchana*, *prasarana*, *utkshepa* and *apakshepa* etc<sup>(15)</sup>. Joints are the place in *sharira* where shleshaka type of kapha is present. Shleshaka kapha gives support and ability of movement for normal functions of joint. *Avabahuka* is a disease that usually affects the *amsa sandhi* (shoulder joint). It is produced by the vata dosha. Even though the term *avabahuka* is not mentioned in *nanatmaja vata vyadhi*, *Acahraya sushruta* considered as the preliminary stage of the disease, where loss or dryness of shleshaka kapha from *amsa sandhi* occurs. Due to vitiation of Vata Dosha, *Shosha* occurs in *Amsa Pradesha* and this vitiated vata causes *Sira Akunchana* in *amsa sandhi* which undergoes leads to functional loss of arm called as 'Avabahuka'. In *Avabahuka* anatomical structures which are affected mainly related to *amsa sandhi*, and this leads to *stabdahta* and *bahu prasanditahara*<sup>(16)</sup>. Similarly, in modern aspect, *Avabahuka* can be correlate as frozen shoulder as it is also a disease of shoulder joint in which pain, stiffness and movement of shoulder becomes limited. Frozen shoulder is a painful, often prolonged, condition that requires careful clinical diagnosis and management

Frozen shoulder occurs when the strong connective tissue surrounding of the shoulder joint (called the shoulder joint capsule) becomes thick, stiff and inflamed.

Normally the head of the humerus moves smoothly in the glenoid cavity, a depression in the scapula. A shoulder is frozen when the capsule protecting the glenohumeral joint contracts and stiffens. Scar tissue (Adhesions) may also forms between the joint capsule and the head of the humerus. Usually, frozen shoulder affects unilaterally, but other shoulder may also be affected ever in a life time. It is more common above the age 45<sup>(17)</sup>.

*Acharya Dalhana* described that, *Amsa bandhan* are shleshma (shleshaka kapha) which is situated in shoulder joint region, this gives support and movement to normal shoulder function. In *Avabahuka* due to

vitiated vata this *sandhi bandhana* gets dry. Dryness of this *kapha* or decrease in the quantity leads to impaired range of movements<sup>(18)</sup>.

*Amsa marma*: - All the elements which comprises a *marma*

i.e. *asthi*(bones), *mamsa*(muscles), *sira*(veins), and *sandhi*(joints) are all present in the site of *marma*. It is predominant in the *sanyu*(ligaments and tendons) making up the *amsa marma*. In the context of *marma*, it is told that four types of *siras* are present around the region of *marma* that nourishes *snayu*, *asthi*, *mamsa* and *sandhi*.

So *akunchana* of this *sira* occurs due to decreased *shleshaka kapha* and this results less nourishment to the *snayu*, *asthi*, *marma* presents in *sandhi*. Due to less nourished *snayu* and *sira stabdhta* occurs and then movement of shoulder gets affected and this leads to *Avabahuka*. *Amsa marma* is type of *snayu marma* and according to *sushruta* if *snayu* gets any trauma it leads to dysfunction and pain.

Means, *sira* and *snayu* both are made up of *sneha* of *meda*, *mrada paka* produces *sira* while *khara paka* produces *snayu*. *Meda* is related to *kapha Dosha*. It means when *sira* get affects it also affects structure of *snayu*. That's why due to *sankoch* of *sira* in *Avabahuka*, deformity in *snayu* related to *amsa sandhi* also occurs<sup>(19)</sup>.

Similarly, in frozen shoulder contraction of capsular ligament occurs. Due to the reduced space in capsule its synovial surface shows signs of vascular inflammation. In the present study also, maximum patients were related to anatomical changes in ligaments. It shows that *Ayurveda* as well as modern medical science both suggests same anatomical changes in frozen shoulder. The disease process particularly affects the antero superior joint capsule and the coraco humeral ligament. Due to the broad variety of causes of shoulder pain it is important to make an exact diagnosis of the cause of the shoulder pain. To find any anatomical deformity in frozen shoulder USG may helpful as a diagnostic tool<sup>(20)</sup>.

## Conclusion:

- So, after the literary study it can be concluded that-
- *Amsa Sandhi* is *Ulukhala* and *Chestavanta* type of *Sandhi*.

- *Amsa marma* is predominantly made up *snayu* i.e. ligaments and tendons, which forms the structural component of this *marma*.
- *Amsa marma* is classified under *vaikalyakara marma*.
- *Amsa marma* when injured are said to produce deformity of the *Amsa pradesha* i.e. *Stabdhabhuta*.
- *Amsa bandhan* can be correlated to *shleshaka kapha* of *amsa sandhi*.
- *Avabahuka* is related to *Amsa Pradesh* and mainly affects *Amsa sandhi*.
- Deformity in *Snayu* and *Sira* are main changes in *Avabahuka*.
- Symptoms of frozen shoulder are similar to *Avabahuka*.

### References:

1. Acharya Vidhyadhar Shukla, Charak Samhita with Hindi commentary Vaidyamanorama, Chaukhamba Sanskrit Pratishthan, Delhi, Reprint-2010, Volume I, Sutrasthan, verse-30/20, page no.447.
2. Kaviraj Atridev Gupta, Astanga Hrudaya, Chaukhamba Prakashan, Reprint- 6, Sam. 2065.
3. Shree Taraknath Tarkwachaspati Bhattacharya, Wachaspatyam, Bruhatsanskritabhidhanam, Chaukhamba Sanskrit series office, Orientalia, Vol 6.
4. Acharya Vidhyadhar Shukla, Charak Samhita with Hindi commentary Vaidyamanorama, Chaukhamba Sanskrit Pratishthan, Delhi, Reprint-2010.
5. Charak Samhita with Ayurveda Dipika commentary of Chakrapanidatta Edited By Vaidya Yadavji Trikamji Acharya, 5<sup>th</sup> Edition, Chaukhambha Sanskrit Sansthan, Varanasi, 2015.
6. Yadavaji Trikamji Acharya, Narayan Ram Acharya, editors. Sushruta Samhita with Nibandha sangraha commentary by Dalhan, 5<sup>th</sup> edition, Varanasi, Chaukhamba Orientalia, 1992.
7. Kaviraj Ambikadutta shastri, sushruta samhita of maharshi sushruta, reprint, Varanasi, chaukhambha Sanskrit sansthan, 2009: Nidansthana, page no. 304.
8. Kaviraj Atridev Gupta, Astanga Hrudaya, Chaukhamba Prakashan, Reprint- 6, Sam.2065, Sharir Sthana, verse-3/1, page no.44.
9. Kaviraj Ambikadutta Shastri, Susruta Samhita vol-1, Chaukhamba prakashan, Edition 2007, Sharir Sthana, verse-5/26, page no. 66.
10. Kaviraj Ambikadutta Shastri, Susruta Samhita vol-1, Chaukhamba prakashan, Edition 2007, Sharir Sthana, verse-5/26, page no. 64.
11. Dr. Shivprasad Sharma, Ashtangasangraha of Vrudha vagbhata, Chaukhamba Prakashan, Edition 2006, Sharir Sthan, Verse-20/8-page no.163.
12. <https://www.ncbi.nlm.nih.gov> (pubmed).
13. Kaviraj Ambikadutta shastri, sushruta samhita of maharshi sushruta, reprint, Varanasi, chaukhambha Sanskrit sansthan, 2009: Sharirsthana, Verse-5/6, page no.55.
14. Kaviraj Ambikadutta shastri, sushruta samhita of maharshi sushruta, reprint, Varanasi, chaukhambha Sanskrit sansthan, 2009: Sharirsthana, verse-6/27, page no. 74.
15. Kaviraj Ambikadutta shastri, sushruta samhita of maharshi sushruta, reprint, Varanasi, chaukhambha Sanskrit sansthan, 2009: Sharirsthana, Verse-5/6, page no.56.
16. Kaviraj Ambikadutta shastri, sushruta samhita of maharshi sushruta, reprint, Varanasi, chaukhambha Sanskrit sansthan, 2009: Sharirsthana, Verse-5/26, page no. 68.
17. Human Anatomy by Dr. B.D. Chaurasia, 5<sup>th</sup> edition, Volume I, Published by CBS Publishers and Distributors, Delhi, 2010: page no. 160.
18. Vaidya Jadavji Trikamji Acharya, Sushrut Samhita with the Nibandhasangraha of Dalhanacharya, Chaukhambha Orientalia, Reprint 1992, Sharirsthan, page no.369
19. Yadavaji Trikamji Acharya, Narayan Ram Acharya, editors. Sushruta Samhita with Nibandha sangraha commentary by Dalhan, 5<sup>th</sup> edition, Varanasi, Chaukhamba Orientalia, 1992: page no. 269.
20. <https://patient.info/health/frozen-shoulder-leaflet>.