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A REVIEW ARTICLE ON *AVABAHUKA* WITH SPECIAL REFERENCE TO FROZEN SHOULDER

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ABSTRACT

Avabahuka is a disorder of the *Amsa sandhi* (shoulder joint)[1], which *Acharya Sushruta* classified as one of eighty forms of *Vata Vyadhi*. Being a disease of the shoulder joint, which has the greatest range of motion, is critical to daily routine and job activities, as it interferes with the proper functioning of the upper limbs, consequently impeding an individual's regular routine work. The basic *Ayurvedic* symptom for *Avabahuka* is *Bahuspandithara*, which indicates loss of arm movement. *Avabahuka* has clinical manifestations and symptoms that are quite similar to Frozen Shoulder (Adhesive capsulitis). Adhesive capsulitis is a musculoskeletal condition that can be severely disabling. It depicts a pathogenic situation in which adhesions are formed across the glenohumeral joints leading to pain, stiffness and dysfunction. It is a debilitating condition that can occur spontaneously (primary or idiopathic adhesive capsulitis) or by other etiologies such as shoulder surgery or trauma (secondary adhesive capsulitis).

KEYWORD: *Avabahuka*, frozen shoulder, Adhesive capsulitis.

INTRODUCTION

Avabahuka is a prevalent illness that has a badly affects on patients daily domestic activities. The Vata Dosha produces *Amsa Sandhi*, which causes *Shosha, Akunchana* of *Sira*, and *Bahupraspandanaharatwam*. *Acharaya Madhava* refers to this as *Dhatukshayajanya Vata Kapha Pradhana Vyadhi*. However, the current study focuses on the clinical condition *Avabahuka* as compared to frozen shoulder. It is recognized as a Gleno-humeral joint condition marked by pain and restricted shoulder movement, usually in the absence of intrinsic shoulder diseases. Diabetes and thyroid disorders currently impact up to 5% of the world's population. The different mechanism of action involved the current treatment option and possible intervention based on recent discoveries of pathophysiology mechanism.

ETIOLOGY

There is no explanation of particular *Nidanas* (causes) for *Avabahuka* in any *Samhita*, the general etiological elements for *Vata Vyadhi* can be considered the *Nidana* (causes) of *Avabahuka*.

In the early stages, *Vata Dosha* is thought to be the primary cause of *Avabahuka*, with *Kapha (Shleshaka Kapha) Dosha* becoming more prominent later on.

The cause of *Avabahuka* can be categorized into the following groups:

Aharajanya: *Vata Dosha can be vitiated by several factors such as Nidana, Ruksha, Sheeta, Atyalpa, Lagu, Kashaya, Katu, Tikta, andAhara.*

Viharaja Nidana: considers elements that directly or indirectly affect the *Amsa pradesha* (shoulder)

Plavana: Excessive swimming can induce joint overexer tion, vitiating the *Vata Dosha*.

Atibhar Vahana**:** Carrying an excessive weight over the shoulder.

Balavata Vigraha**:** Fighting against someone stronger than you might produce *Aghata* (trauma) to the *Amsa Pradesha* (shoulder), resulting in *Vata Prakopa*.

***Marmaghata* (damage to vital organs):** damage to *Amsa Marma*, which are located on either side, midway between the neck and the head of the arms and connect the *Amsa Peetha* (glenoid cavity) and the *Skandha* (shoulder), causes shoulder stiffness.

Dukh Shayya: Using uncomfortable mattresses or seats may cause problems in *Amsa Sandhi* due to poor posture.[2]
Other Nidanas, as discussed in Vata Vyadhi, may exacerbate the problem by activating the Vata Dosha.

***Samprapti* (Pathogenesis)**
According to Acharya Sushruta, vitiated Vata dries up the Shleshaka Kapha (structures and tissues) around the Amsa Sandhi (shoulder joint) and produces vasoconstriction of the arteries, resulting in joint discomfort and stiffness, as well as restricted shoulder movement.

Samprapti Ghataka
- *Udhavasthana- Amapakvashya*
- *Sancharsthana- Rasayani*
- *Adhisthana- Amsa pradesha*
- *Vyaktasthana- Bahu pradesha*
- *Dosha- Vata predominant- (Vyana and Prana) Anubandha dosha- kapha (shelshaka), pitta*
- *Dooshya – pradhanta- Asthi, majja, Rakta, Mamsa*
- *Updhatu- Sira, Snayu, kandra*
- *Agni- Jathargni and respective Dhatwagni*
- *Ama- Jahtraagni mandyajanyaama* and respective *Dhatwagnijanya Ama*
- *Srotas- Asthivaha, Majjavaha*
- *Srotodusti prakara- Sanga*
- *Roga Marga- Madhyam*
- *Roga Awastha- Chirkari*

***Poorva Roopa* (Prodromal Symptoms)**
There is no specific *Poorva Roopa* described for *Avabahuka* in *Ayurvedic* scriptures. *Avyakta* (indistinct) *Lakshana* is the *Poorva Roopa* of the *Vata Vyadhi*. As a result, in the case of *Avabahuka*, small symptoms that appear before to the disease's presentation can be considered *Poorva Roopa* (prodromal symptoms).

Roopa (signs and symptoms): *Acharya Vagabhata's* classical symptom is *Bahuspandithara*, which indicates loss of shoulder movement, pain in the shoulder region, stiffness of the shoulder, *Sira Sankocha* (constriction of the veins of the shoulder joint), and *Bahu Shosha* (atrophy of arm muscles).

Treatment
In *Ayurvedic* literature, *Snehana, Swedana, Virechana, Basti Nasya, Dhoompana, Avrana Chikitsa*, and *Shaman Chikitsa* are common treatments for *Vata Vyadhi*. *Ashtanga Hridaya* mentions Nasya and *Uttarbhaktika Snehapana* (*snehapana* before lunch) for *Avabahuka*.[3] In *Ashtanga Sangaraha, Avabahuka Navana Nasya (*nasal medication) after meals should be used, and if it is not coupled with *Ama* symptoms, *Snehapana* (drinking medicated oil) should be used.[4] Acharya Sushruta recommended Vatayvadhi Chikitsa except for Siravyadha[5] (between the bahu sandhi). In Ayurvedic scriptures, the treatment for Vata Vyadhi (avabahuka) includes:

i) *Snehana* (oleation with therapeutic oils both internally and externally).
ii) *Swedana* (sudation using steam from vatashamaka medicines).
iii) *Basti* (a decoction or oil administered anally, similar to an enema).
iv) Agnikarma
v) Oral medications (in form of *guggulu*, decoctions etc.)

Acharya Vagbhata mentions *Nasya* (nasal medicine) in the *Udarvajatrugata Roga*. *Astanga Sangraha* mentioned[6] *Navana Nasya* and *Snehapana* for *Avabahuka*, while *Acharya Sushruta*[7] advises *Vatavyadhi chikitsa* except *siravyadha*, in *Astanga Hridyam*[8] first *Nasya* then *Basti*, *Dashmooladi Kwatha*[9,10] by *Chakradatta* for *Avabahuka*, and in Yoga Ratnakar[11] bahuparivartana (movements of the shoulder joint as "*Masha tail rasonabhyam bahuvoch* parivart"). *Sahasrayoga* lists *Karpasasthyadi Taila* as a therapy for *Avabahuka*.[12]

A broad over view of some of the well-recognized methods today is provided below:

1. ***Nidana parivarjana:*** emphasizes avoiding causes and maintaining a healthy diet and lifestyle.
2. ***Abyanga***: is a massage technique that uses warm medicinal oil to provide pressure and stretch.
3. ***Swedana***:(sudation with dosha shamak steam) involves severe heating and Upnaha.[13]
4. ***Pizhichil*[14]:** the simultaneous application of hot oil and massage.
5. ***Elakizhi*[14]**: A herbal poultice made with *Vata* balancing herbs that is knotted in a cloth and immersed in hot therapeutic oil, then administered to the problematic area.
6. **Njavarakizhi[14]:** Beneficial in degenerative disorders, similar to *Shastika shali Pinda Sweda*; first, *abhyanga* is performed, then a rice pack steeped in a specific decoction is applied to the diseased area.
7. ***Podikizhi*[14]:** This herbal powder is placed in a linen bag, dipped in oil, and used topically.
8. **Pichu[14]:** Apply a cotton swab soaked in heated medicinal oil to the afflicted area.
9. ***Nasaya* karma[15, 16]:** this is under *Urdhvajatrugata roga*.

Sanshamana aushadhi includes *vatashamaka* medicines, *kwatha*, and oils such as *Yograj Guggul, Rasna Erandadikshaya, Mahanarayanadi Taila*, among others.

Marma therapy[18]: Stimulating marma points near *amsa sandhi* produces good outcomes and can be done indefinitely with no negative effects.

Modern review of Frozen Shoulder or Adhesive Capsulitis

Earnest Codman invented the term "frozen shoulder" in 1934. He described an insidious development of pain in his shoulder, which was accompanied by stiffness and difficulties sleeping on that side. He also discovered the disease's hallmarks, which were a significant reduction in forward elevation and external rotation. Long before Codman in 1872, the same illness was dubbed "periarthritis" by Duplay, who was largely regarded as the first doctor to define the pathology. In 1945, Neviaser created the term "adhesive capsulitis." The three symptoms of frozen shoulder are insidious shoulder stiffness, significant discomfort, even at night, and near complete loss of passive and active external rotation of the shoulder This is a poorly understood illness characterized by upper arm pain that increases over 4-10 weeks before subsiding over the same time period. Glenohumeral limitation is evident from the beginning, but it progresses and reaches its peak when the pain subsides. Frozen shoulder is more common in diabetics and can be triggered by a rotator cuff lesion, local trauma, myocardial infarction, or hemiplegia20. In the early phase, there is marked anterior joint/capsular tenderness and stress pain in a capsular pattern; later, there is painless restriction, often of using uncomfortable mattresses or seats may cause problems in *Amsa Sandhi* due to poor posture[2] all the shoulders. Incidence Adhesive Capsulitis affects 3-5% of the general population and up to 20% of diabetes patients. It is a self-limiting condition that typically cures within 1-3 years. Other studies suggest that 20-50% of individuals with adhesive capsulitis experience long term impairments that can last up to 10 years.[21] Adhesive capsulitis primarily affects women between the ages of 50-60 yr.[22] Females are affected four times more than guys. Non dominant shoulders are more likely to be affected.[23] Adhesive capsulitis is frequently encountered in thyroid illnesses, Parkinson's disease, cardiac and pulmonary ailments. Surgical operations such as heart surgery, neurosurgery, and neck dissection can potentially cause frozen shoulder.[24]

PATHOPHISIOLOGY

Inflammatory, fibrotic, and immune system alterations have all been linked to frozen shoulder. The current theory states that inflammation starts in the joint capsule and progresses to adhesion development and synovial lining fibrosis. Joint volume is decreased by the glenohumeral joint capsule's thickening and contraction as well as the collagenous tissue that grows surrounding the joint. Biomarkers for frozen shoulder include ICAM-1 (CD54), TGF-β, TNFα, IL-1 alpha and beta, IL-6, and platelet-derived growth factor (PDGF). Matrix metalloproteinases play a role in the formation of the extracellular matrix as well as the regulation of collagen deposition by different cytokines. Drugs that suppress matrix metalloproteinase can cause diseases akin to frozen shoulder and Dupuytren disease. Following the synovial inflammatory process, a large number of fibroblasts and myofibroblasts appear, indicating a fibrotic process in the capsule. This syndrome is caused by gradual fibrosis, which eventually leads to contracture of the glenohumeral capsule, producing discomfort and stiffness.[25]

Stages of frozen shoulder

- **Stage 1 (inflammatory)**

The patients report pain during active and passive range of motion. The discomfort is described as an ache at rest that becomes intense with movement, and it is frequently worse at night. The range of motion continues to be sufficient. These symptoms normally last for fewer than ten weeks.

- **Stage 2 (freezing)**

The patient describes a history of continuous persistent being uncomfortable for the last 10-36 weeks. The feeling of discomfort gets greater at night. There is no history of injury. The range of motion gradually decreases. Arthroscopic observations include diffuse pedunculated synovitis and a rubbery/dense sensation when the arthroscopy cannula is inserted.

- **Stage 3 (frozen)**

This happens at 4 to 12 months. Pain progressively decreases and is only felt at the extreme range of motion. A significant limitation of mobility is seen, with nearly no external rotation possible.

Stage 4: Thawing or Resolution

This usually starts 12 months after starting and can extend up to 42 months. A spontaneous improvement in range of motion happens with little pain.

DISCUSSION

This article aims to provide an overview of the nature and the widely accepted management of this condition based on other studies. As described in *Sushruta Samhita* and *Madhav Nidana*, *Avabahuka* and *Bahu Shosha* can be considered as a continuum, not as separate diseases or two different conditions. It is extremely important to consider the patient's symptoms and condition when selecting a treatment method, as each patient's treatment should be individualized. Marma therapy, which stimulates marma points near *amsa sandhi*, produces good outcomes and can be performed for a lifetime with no side effects. Marma therapy can be combined with oral *vatashamaka* drugs and medicated oils to improve the effects. *Bahuparivartan* (shoulder exercises) can be used at any stage of *Avabahuka*. There is limited data to suggest that marma therapy can genuinely modify the natural course of this disease, which is a key subject for future research in particular, as compared to a properly powered high quality randomized controlled trial.

CONCLUSION

Avabahuka is a condition induced by vitiation of *Vata Dosha*, in which *Vayu (Vata dosha*) located at the root of the shoulders constricts the veins and creates

Bahuspanditharam. *Avabahuka Sthanasanshraya* occurs at the Amsa Sandhi due to the presence of *Khavaigunya*, resulting in *Dosha-Dushya Sammurchana* induced by *Abhighata* or other etiologies. *Vyana Vayu* is in charge of all motor functions in the body, whereas *Shleshaka Kapha* lubricates the *Sandhis* (joints) so that they can move properly. *Shoshan* of the *Shleshaka Kapha* causes a decrease in range of motion. In modern research, *Avabahuka* could be linked to frozen shoulder or adhesive capsulitis.

In Avabahuka, Vatahara and *Sneha Dravyas* are beneficial in the form of *Nasya*. *Nasya Karma* is a highly effective treatment for *Urdhvajatrugata Rogas*, according to classical texts. *Uttarbhaktika Snehpana* is beneficial in *Avabahuka* since the *Aushadhkala* indicated for *Vyana Vayu* in Ayurvedic books is *Adhobhakta*. *Nasya Karma* and *Uttarbhaktika Snehapana* can help relieve *Avabahuka* symptoms and improve arm movement.

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