



## Review Article

## ROLE OF TRADITIONAL THERAPY (YOGA) IN AVABAHUKA (FROZEN SHOULDER)

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**ABSTRACT**

Frozen shoulder, the “Peri-arthritis” or “Adhesive Capsulitis” is the problem of shoulder region in which the shoulder capsule, the connective tissue surrounding the gleno-humeral joint of shoulder, becomes inflamed and stiff, greatly restrict motion and cause chronic pain. In Ayurveda there is no direct reference of frozen shoulder. But there are many problems which are related viz “Avabahuka”, “Amsa Shosha”, “Bahushosha”, “Sandhigata Kupita Vata”, “Snayu Gata Kupita Vata”. Among these Avabahuka has close correlation with frozen shoulder. This disease usually affects the Amsa Sandhi (shoulder joint). Acharya Sushruta and other Acharyas have considered Avabahuka as a Vataja Vikara. Amsa Shosha (wasting of shoulder) can be considered as the preliminary stage of the disease, where loss or dryness of Shleshak kapha from Amsa Sandhi occurs and hampers the movement of the arm. The most common treatment for frozen shoulder is mobility, exercises and Yoga (Asana & Pranayama). Yogic procedures are helpful in removing the stiffness of the joint. Keeping this in mind I am presenting a review article on following exercises (Suksham Vyayama- wrist movement, elbow movement, shoulder movement, neck movement, wall climbing exercise, towel stretch exercise, Chakkichalan), Asanas (Tadasana, Chakkichalanasana, Ardhakatichakrasana, Katichakrasana and Shashankasana) and Pranayama (Kapalbhati, Nadishodhana (Anulom-Vilom), Bhramari) how they help manage or prevent frozen shoulder.

**INTRODUCTION**

The word Avabahuka is formed by two components namely, Ava+ Bahuka. ‘Apa’ is used as alternate for ‘Ava’ which gives following meaning- Viyoga, Vikratau means dysfunction<sup>[1]</sup>. Thus, the Ava or Apa can be taken as deterioration or dysfunction. Bahu means upper limb and is one among Shadanga<sup>[2]</sup>. Therefore, Avabahuka means dysfunction of upper limb. The cardinal features of Avabahuka are: Bahupraspanditahara, Ansabandhana Shosha, Shoola.

**Bahupraspandithara:**<sup>[3]</sup> This in the present context may be taken as (i.e. Bahu Praspanadahara) difficulty in the movement or impaired or loss of movement of the upper limb.

The movement of shoulder joint like abduction, flexion, extension, rotation etc. gets affected. The range of movements depends on the strength of Nidana, the structures injured and extent of injury.

**Amsabandhana Shosha:**<sup>[4]</sup> Acharya Sushruta and Yogaratnakara considered this as a major Lakshana in case of Avabahuka. This is due to vitiated Vata. As there are restricted movements of the shoulder joint this hampers the local circulation, leading to Shosha. Shoshana of Sira and Snayu that binds the Amsa due to vitiated Vata and hamper the range of motion of Amsa Desha.

**Shoola:**<sup>[5]</sup> Although many of the classic do not mention about Shoola as a Lakshana of Avabahuka, but in Vangasena in Vata Vyadhi Adhikara, Vedana is the major symptom of Avabahuka and it is still a feature which is practically seen in the patients of Avabahuka. It starts from upper part of the Bahu and spread in the downward movement, in some cases up to elbow and in some up to fingers. In Ayurveda, there is no direct correlation of any disease with frozen shoulder but

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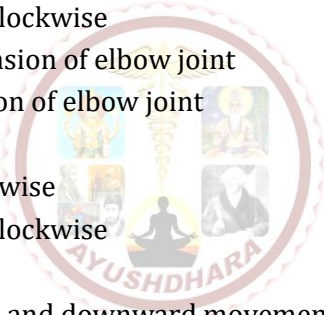
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some symptoms of *Avabahuka* resemble the symptoms of frozen shoulder.

**Frozen Shoulder:** This condition usually affects the shoulder joints. The shoulder capsule forms a protective covering on the shoulder blade, upper arm and collar bone. On the development of this condition, the shoulder capsule becomes thick due to a layer of scar tissues surrounding it. And moreover, due to less supply of the synovial fluid, the joints also become tight and rigid making any sort of movement or posture difficult. It is usually characterized by pain and stiffness in one or both shoulders. [6]

## MATERIAL AND METHODS

This sudden rigidity in the shoulders can easily be mitigated by practicing *Yoga*, the ancient and traditional form of exercise. *Yoga* is a healthy way of living, originated in India. Now it is believed to be a form of science accepted all over the world. *Yoga* makes oneself physically fit, mentally alert and emotionally balanced. The word '*Yoga*' is derived from

- 
- i. Wrist movement
    - Clockwise
    - Anticlockwise
  - ii. Elbow movement
    - Extension of elbow joint
    - Flexion of elbow joint
  - iii. Shoulder movement
    - Clockwise
    - Anticlockwise
  - iv. Neck movement
    - Upward and downward movement
    - Lateral movement
    - Rotatory movement (Clockwise & anticlockwise)
  - v. Wall climbing exercises
  - vi. Towel stretch exercises
  - vii. *Chakkichalan*

**Wall climbing exercise:** This exercise help to increase shoulder's range of motion, build strength and helps reduce pain.

### Steps

- Stand facing the wall and place hand on the wall just above the height of shoulder.
- With elbow slightly bent, slowly walk fingers up the wall, and raise arm as far as patient comfortably can rise, so as to feel a stretch in shoulder.
- After that slowly lower the arm (with the help of normal arm, if necessary) and repeat.

**Duration:** 5-6 times in one set three times per day.

Sanskrit root '*Yuj*' which means 'join' or 'unite'. *Yoga* includes various practices and techniques. According to medical scientists, "*Yoga* therapy is successful because of the balance it creates in the nervous and endocrine systems which directly influences all the other systems and organs of the body". *Yoga* is a philosophy and practice that connects the body, breath and mind to energize and balance the whole person. This mind body therapy involves physical postures and breathing exercises to improve overall wellbeing.

Here in this article aim is how following *Sukshama vyayama*, *Asana* and *Pranayama* improve the condition of frozen shoulder.

### *Sukshama Vyayama*

*Sukshama Vyayama* are the minor body movements or kind of warm up exercise which prepare body for *Asanas*, and enhances the body's ability to deliver oxygen and nutrients to working muscles and also make the joints flexible. *Sukshama Vyayama* includes:

### Towel stretch exercise

#### Steps

- Hold one end of a three-foot-long towel behind back and grab the opposite end with other hand.
- Hold the towel in a horizontal position.
- Use unaffected arm to pull the affected arm upward to stretch it.
- Hold the bottom of the towel with the affected arm and pull it toward the lower back with the unaffected arm.

**Duration:** 5-6 times in one set three times per day.

### *Chakkichalan*

The meaning of *Chakki* is 'grinding mill' while the meaning of *Chalan* is 'drive'. While practicing this, body movement appears as if the practitioner is

churning a grinding mill and hence the name *Chakkichalan*.

### Methods

- Sit on a *Yoga* mat with the legs stretched out in front of the body.
- Separate the legs as wide as possible.
- Interlock the fingers of both hands and hold the arms out straight in front of the chest.
- Start making large circular movements, taking the hands over both the toes on the forward swing and coming as far back as possible on the backward swing.
- Synchronize the movement of the body with the breath.
- Exhale while moving forward and inhale while moving backward.
- One rotation means one round completed.

**Duration-** 5-6 rounds in one set.

### Precautions

One should not overexert or strain during the practice of *Chakkichalan*.

### Asana

The detailed description of *Asana* is available only in the texts of *Hathayoga*.<sup>[7]</sup> *Hathayoga Pradipika* puts *Asana* at serial number one in the course of practice of *Yoga*. *Maharishi Patanjali's Ashtanga Yoga* describes *Asana* as the third step. 'He said the posture should be steady and comfortable'.<sup>[8]</sup>

In present study, *Tadasana*, *Ardhakati-chakrasana*, *Katichakrasana*, *Shashankasana* were selected and describe their effect in reducing the pain, increase extensibility of the capsule and improve strength of the rotator cuff muscles.

#### 1. Tadasana

The word '*Tada*' comes from Sanskrit word, which means 'mountain' and meaning of '*Asana*' is 'posture'. So this *Asana* is called *Tadasana*.

#### Method

- Stand straight on the ground and take a small gap between feet.
- With deep breathing (inhale), raise both arms by holding affected arm with normal hand.
- Now, stand on toes by raising heels simultaneously.
- Stretch whole body from toes to fingers.
- Try to maintain this pose as long as possible.
- Now exhale and come to the original position.
- Repeat this *Asana* 3-5 times.

### Precautions

- A person suffering from a headache, insomnia and low blood pressure must be cautious while doing standing poses or mountain pose.
- It should not be done by pregnant women.
- The positioning of feet is very important. Any alterations in feet positioning will have effects on the body parts.

#### 2. Ardhakatichakrasana

'*Ardha*' means half, '*Kati*' means waist and *Chakra* is wheel, so this *Asana* is called *Ardhakatichakrasana*. In this posture semicircle is formed at the waist by lateral bending.

#### Method

- Stand erect with both legs together.
- Slowly raise the affected arm, till patient feels pain with inhalation.
- Slowly bend the body to the opposite side of affected arm with exhalation.
- Maintain the position for some time with normal breathing.
- Return to the initial position with inhalation.
- Repeat this for 3-5 times.

### Precautions

- Those with hip injury must avoid this pose.
- Do not bend forward or backward in this pose.

#### 3. Katichakrasana

'*Kati*' means waist, '*Chakra*' means wheel, circular rotation. The name of this *Asana* means rotation of waist and keep arms wide apart.

#### Method

- Stand up straight with your feet together.
- As you breathe in, stretch your hands to the front, palms facing each other, parallel to the ground.
- Exhale and gently twist from the waist to the right and look back over the right shoulder. Keep feet glued in their place.
- Keep the distance between palms constant. Feel the stretch in arms and waist.
- Breathe in, come back to the centre.
- Breathe out and turn to left and repeat the *Yoga* posture on left side.

#### 4. Shashankasana

The name comes from the Sanskrit word '*Shash*' means rabbit and '*Asana*' meaning 'posture' or seat.

#### Method

- Patient is advised to be in kneeling position placing the thighs on the legs with the soles upward.

- Patient is now advised to keep buttocks on the soles so that the calves must touch the thighs.
- Patient is advised to place the hands on the knees and place the knees close to each other.
- Advice the patient to raise the hands with inhalation, then with exhalation bend forward and try to reach as further as possible with buttocks touching the soles.
- Stretch the arms as much as possible.
- Now, inhale and raise arms and come to the original position.

#### Precautions

- In the final position, the buttocks must be touching the heels.

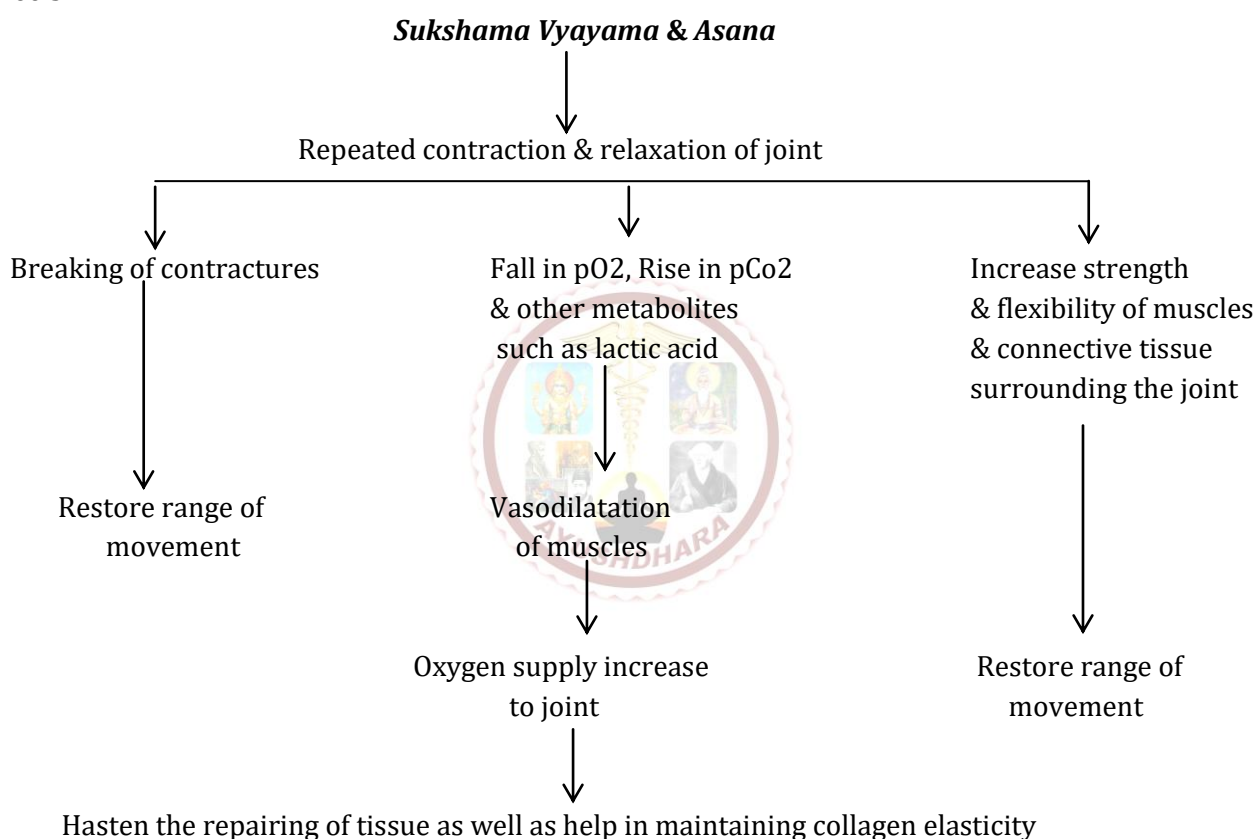
- People suffering from any of these conditions should avoid practicing this pose: vertigo, high blood pressure, knee problems, or slipped disc.
- Pregnant women should also avoid practicing this *Asana*.

#### Mode of action of *Sukshama Vyayama* and *Asana*

Aim of Yogic practices is to restore the movements of the shoulder joint.

***Sukshama Vyayama***- Wrist movement, elbow movement, shoulder movement, neck movement, wall climbing, towel stretch and *Chakkichalan*.

***Asana***- *Tadasana*, *Katichakrasana*, *Ardhakati chakrasana*, *Shashankasana*.



#### ***Pranayama***

*Pranayama* is a Sanskrit word which literally translates into “Extension of the *Prana* or breath” ‘*Prana*’ means life, breath, respiration, vitality, wind, energy or strength and it is a life force or vital energy that pervades the body. *Prana* is the link between mind and consciousness. The physical manifestation of ‘*Prana*’ is breath and ‘*Ayama*’ means lengthen, expand, stretch and draw out the breath.

#### **Introduction**

After the mastery over the *Asana*, controlling the inspiration and expiration is known as *Pranayama*. It helps to establish control over the mind and thus helps in the mastery of other limbs of *Yoga*.<sup>[9]</sup>

The person is said to be alive till the *Prana Vayu* is present in the body. As soon as the *Prana Vayu* goes out, he is said to be dead. So, one should learn to control *Prana Vayu* through *Pranayama* to enhance the longevity of life.

*Pranayama* here includes:

#### **1. *Kapalbhati***<sup>[10]</sup>

Although *Kapalbhati* is one of the *Shatkarma* procedure but I am considering it in a *Pranayama* because of its breathing technique.

Perform *Rechaka* and *Puraka* rapidly like the bellows of a blacksmith.

This is called *Kapalbhati* and destroys diseases of the phlegm.

**Method**

- Sit in a comfortable meditative *Asana*.
- The head and spine should be straight with the hands resting on the knees in *Gyana Mudra*.
- Close the eyes and relax the whole body.
- Exhale through both nostrils with a forceful contraction of the abdominal muscles.
- The following inhalation should take place passively by allowing the abdominal muscles to relax. Inhalation should be due to effortless spontaneous recoil of the abdominal muscles.
- After completing 10 rapid breaths in succession inhale and exhale deeply.  
Allow the breath to return to normal.
- The number of inspiration may be increased from 10 to 50, as the abdominal muscles become stronger.

**Contra-indication**

- *Kapalbhati* should not be practiced by those suffering from heart disease, high blood pressure, vertigo, epilepsy, stroke, hernia or gastric ulcer.
- It is not recommended during pregnancy.

**2. Nadishodhana** <sup>[11]</sup>

Sitting in *Padmasana* posture or any *Dhyantmakasana*, the *Yogi* should inhale through *Chandra Nadi* (left nostril), closing the right one; and keeping it confined according to one's ability, it should be expelled slowly through the *Surya Nadi* (right nostril). Then drawing in the air through the *Surya Nadi* (right nostril) slowly, the belly should be filled and after performing *Kumbhaka* as before, it should be expelled slowly through the *Chandra Nadi* (left nostril).

**Method**

- Sit in *Dhyantmaka Asana* (*Padmasana*, *Siddhasana*, *Vajrasana* or *Sukhasana*) with spine erect.
- Perform *Jalandhara Bandha* and keep the left hand in *Jnana Mudra*.
- Bend the right hand at elbow and perform *Nasagra Mudra* i.e., bend the index finger and middle finger, bring the ring finger and little finger near the thumb.
- Touch the right nostril with the thumb and left nostril with the ring finger and little finger.
- Close the left nostril and inhale deeply through the right nostril and fill the lungs completely with the air.
- Withhold the breath i.e., *Kumbhaka*
- Exhale through the left nostril completely, while right nostril is closed. Then again perform *Kumbhaka*.

- Repeat the cycles for 5 minutes.

**Duration-** 5 minutes minimum**Precautions**

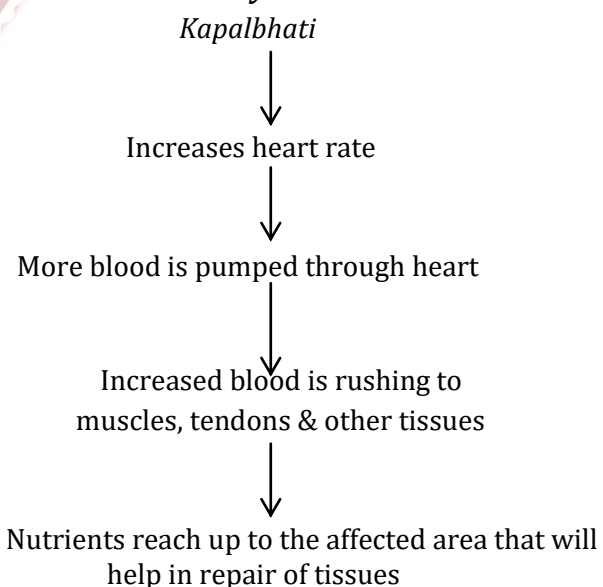
Those suffering from high or low blood pressure should not do *Kumbhaka* for longer period in this *Pranayama*. However they can practice *Puraka* and *Rechaka* slowly.

**3. Bhramari** <sup>[12]</sup>

Sound is produced like the large black bee (*Bhramara*) during *Pranayama*. The practitioner gets the feeling of pleasantness.

**Methods**

- Sit in any *Dhyantmaka Asana* with spine erect.
- Gently close the lips, keeping the teeth slightly apart and bring the tip of tongue to the space behind the upper front teeth.
- Then close each ear with the thumb, place index fingers at the mid- point of the forehead just above the eyebrows and place the middle, ring and little fingers across the eyes so that the tips of these fingers press very gently against the bridge of the nose.
- To begin, take a long, deep breath in, through the nostrils.
- Exhale slowly, making a steady, low-pitched 'hmm' sound at the back of the throat- like the humming of a bee.

**Mode of action of Pranayama****Nadishodhana and Bhramari**

- *Pranayama* enriches the blood with oxygen so that the affected joint gets more and more oxygen.
- Efficiency of oxygen utilization by the tissues is maximized leading to deeper relaxation and more energy.
- It increases threshold for pain.

- Reduces oxidative stress.
- Stress and anxiety related to disease is also reduced.
- Helps remove toxins from body.

## DISCUSSION

Discussion is a process of re-examining ones view, so as to form a base for the conclusion.

Patients with frozen shoulder typically experience insidious shoulder stiffness and loss of passive and active movements of the shoulder, therefore physical therapy is the first line of treatment for frozen shoulder. In this study *Sukshama Vyayama* and *Asana* were taken to increase the mobility of the shoulder joint.

Due to various twists, stretches and strains in the body, the joints and other body parts are stretched. This increases the blood supply and oxygen supply to the organs, increasing their efficiency and functioning. It helps in removing stiffness of joint by breaking the contractures and strengthens the rotator cuff muscles. Patients if perform it daily, helps in the prevention of frozen shoulder.

*Pranayama* enriches the blood with oxygen therefore by practicing *Pranayama* all body organs gets more oxygen, toxins are removed from body. Therefore, onset of various diseases is prevented. It also increases threshold for pain. It reduces the signs of oxidative stress in the body. These breathing technique is also beneficial in insomnia, relieves stress, tensions, anger, anxiety and high blood pressure. Due to these qualities of *Pranayama*, it is beneficial for the patients of frozen shoulder as:

- It increases threshold for pain,
- Reduces oxidative stress
- Enriches the blood with oxygen so that the affected joint gets more and more oxygen
- Remove toxins from body.

## CONCLUSION

Frozen shoulder affects everyday life and also quality of life, although it is not a life threatening, but still it hampers quality of life. *Sukshama vyayama* and *Asanas* mentioned in this article helps in proper stretching, breaking contractures and good blood

supply to the joint. *Pranayama* helps in increasing the threshold to bear pain and reduce stress. Therefore, *Yoga* helps to restore the movement of the affected joint.

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