



An Ayurveda protocol to be incorporated with physiotherapy for the effective management of frozen shoulder – A conceptual study

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ABSTRACT

Frozen shoulder is a very common condition seen in many individuals during their life time with varying intensity and causative factors. Frozen shoulder cannot be explained based on joint complexity but can be defined as a glenohumeral joint with pain and stiffness. Frozen shoulder is also commonly called as adhesive capsulitis as the pathology involves the capsule of the joint. Generally, after the manifestation Frozen shoulder, it usually incapacitates the individual to some period of time of life in doing daily activities. So, a fast remedial protocol can be a gift for the community and can be incorporated in clinical practice by the clinicians as the highest standard of care. Since, the Ayurveda incorporations in different stages of frozen shoulder can lead to fast recovery of the patient, this paper is purely a guideline to do some clinical trials and to make the new standard of care. It can also lead to the stoppage of the use of unwanted painkillers and steroids with side effects in the health care system by simple classical Panchakarma procedures.

1. Introduction

Frozen shoulder is a very common condition seen in many individuals during their life time with varying intensity and causative factors. Frozen shoulder cannot be explained based on joint complexity but can be defined as a glenohumeral joint with pain and stiffness. Frozen shoulder is also commonly called as adhesive capsulitis as the pathology involves the capsule of the joint. The symptoms of frozen shoulder can be compared with symptoms of Apabahuka disease explained in many Ayurveda classics^{1,2,3}. According to various surveys the incidence of Frozen shoulder is 2%. It is seen in women more commonly than men. Also, the bilateral involvement occurs in about 10-40 % of cases. Usually, the condition will not recur in the same shoulder but there is 20 to 30 percent chance to develop the condition in the opposite shoulder. Generally, after the manifestation Frozen shoulder, it usually incapacitates the individual to some period of time of life in doing daily activities. So, a fast remedial protocol can be a gift for the community and can be incorporated in clinical practice by the clinicians as the highest standard of care.

2. Literature review

Initially Frozen shoulder was explained by scientists as a difficult disease in terms of defining explaining, as well as managing. S E Duplay defined frozen shoulder as scapulohumeral periartthritis, because he thought it is due to sub-acromial bursitis. F Pasteur later referred the condition as *tenobursite*, since he thought it is because of bicipital tendinitis. The term "frozen shoulder" was first mentioned by E A Codman, but he explained it as tendinitis of the rotator cuff. J S Naviaser introduced the concept of adhesive capsulitis. He coined the term by seeing the tight and thickened capsule, which is stuck to the humerus and could be peeled off like adhesive plaster from the skin.

Table 1: Clinical features of frozen shoulder according to biomedical term and Ayurveda terms^{1,2,3}

SL.NO	Biomedicine term	Ayurveda term
1.	Localized to shoulder joint with slow onset	Amsamoola stita
2.	Restriction in shoulder joint range of movements	Bahu prasandita hara
3.	Unable to do normal activities of shoulder joint	Bahu cheshtapahari
4.	Pain	Shoola krit
5.	Mild oedema	Toda krit

2.1 Causes of frozen shoulder can be classified into:

1. Primary causes (idiopathic) with unknown etiology and without any radiological findings other than ROM loss.
2. Secondary (known disorders) as a result of known disorders. It can be either because systemic disorder like Diabetes mellitus, Hypo/hyperthyroidism, Hypoadrenalism, etc. or Extrinsic disorder like Cardio-pulmonary diseases, Cervical disc problems, Humerus fracture, Parkinson's disease, etc. or Intrinsic disorders like Rotator cuff tendinitis or tears, Bicep's tendinitis, Calcific tendinitis, etc.

2.2 Stages of Frozen shoulder

Generally, the stages of Frozen shoulder can be classified into 3 main phases

- 1) Painful phase (which can last from 3weeks to 9 months) - The freezing phase
 - ✓ The pain often starts gradually and increases during this phase.
 - ✓ Pain may be felt on the outside of the upper arm and can extend down to the elbow and even into the forearm.
 - ✓ Pain present at rest and is worse on movements of the arm.
 - ✓ Sleep is often affected, as lying on it is painful or impossible.
 - ✓ ROM of the shoulder begin to reduce.
- 2) Stiff phase (which can last from 3months to 12 months) - The frozen phase
 - ✓ The ball and socket joint becomes increasingly stiff, particularly on twisting movements such as trying to put your hand behind your back or head.
 - ✓ These movements remain tight even when you try to move the shoulder with your other hand.
 - ✓ It is the ball and socket joint which is stiff. The shoulder blade is still free to move around the chest wall, and you may become more aware of this movement.

3) Recovery phase (which can last from 4 months to 26 months) - The thawing phase

- ✓ The pain and stiffness start to resolve during this phase, and will be able to use arm in a normal way.
- ✓ The total duration of the process is from 12 to 42 months, on average lasting 30 months.

3. Methodology

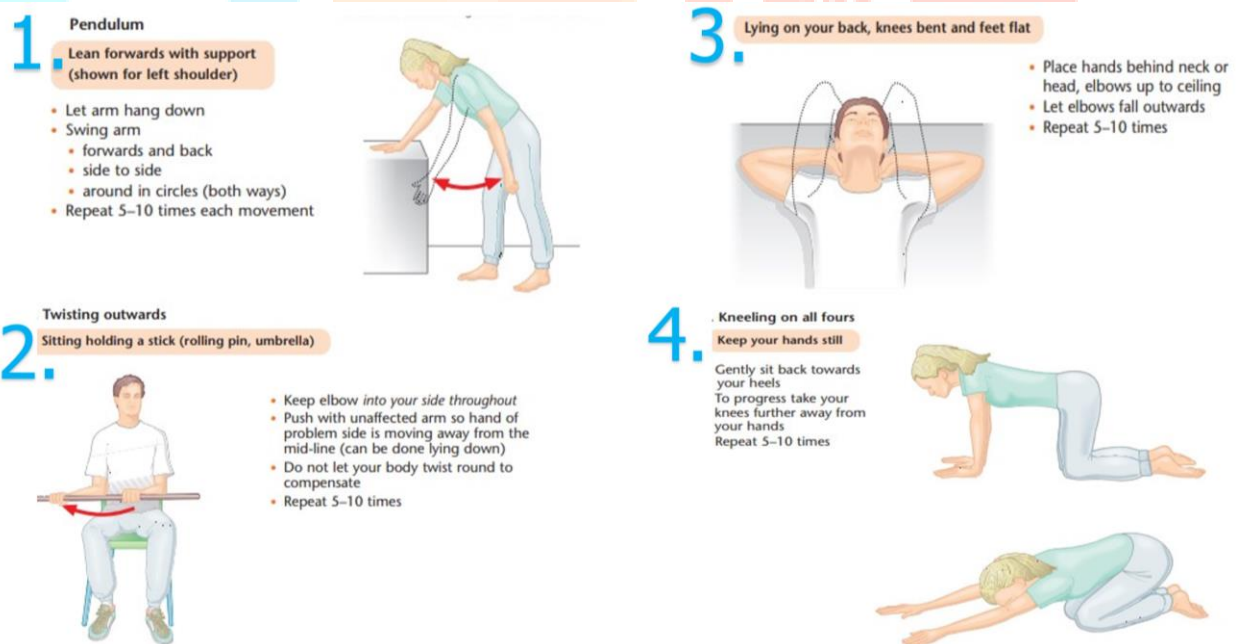
Here, in this paper some incorporations of Ayurveda measures are mentioned in addition to the standard physiotherapy care, which can be utilized naturally without any side effects. It can help to avoid the usage of pain killers and steroids that can adversely affect the individual's health in future.

3.1 Management of first phase

First phase management includes the measures that are used when the patient has a painful joint. A physiotherapist will give accessory movement in a comfortable joint position, with the affected arm supported in a loose-packed position. Then administers a slow, gentle oscillatory movement, if they do not increase pain or induce muscle spasm. Then also subjected to a mechanical block to movement, thereby restricts range and continues to use gentle, low-amplitude oscillations.

Figure 01: Physiotherapy exercises for the first phase of frozen shoulder

Figure 01 shows the list of some physiotherapy procedures that can be followed in the first phase of frozen shoulder without crossing the pain threshold. It includes mainly assisted slow moving exercise like pendulum rotations, stick assisted twisting outside, kneeling on four on floor, etc.



Ayurveda incorporations that can be given at this stage

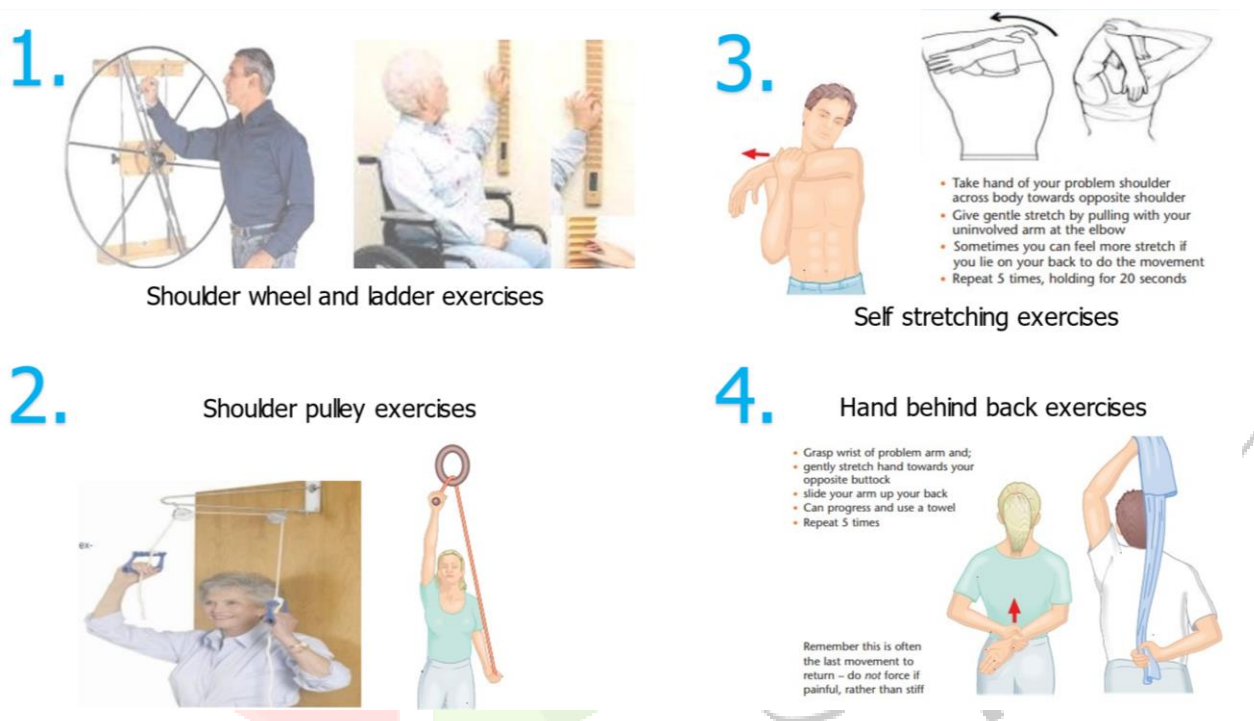
Kashaya dhara and Upanaha are the two classical Ayurveda Panchakarma procedures that can be incorporated at this stage. Kashaya dhara is the procedure of pouring luke warm decoction, which is made out combination of drugs. Here in this condition the drug combination should be anti-inflammatory and analgesic in action like Dashamoola, balamooladi etc. Upanaha is also an Ayurveda procedure that include bandaging the joint with poultice made of combination of different Ayurveda drugs. Here, in this condition the drug combinations can be like Jatamyadi, Rasnadi, etc.

3.2 Management of second phase

Second phase management includes the measures that are used when the patient has a stiff joint. When the condition progress it is observed that the stiffness slowly changes to a stage with onset of pain along with stiffness. Then physiotherapist will have to give low-amplitude physiological and accessory oscillations at the limit of the restriction. To increase abduction, for example, the therapist with caudal glide performs more powerful oscillations at the end of the accessory range.

Figure 02: Physiotherapy exercises for the second phase of frozen shoulder

Figure 02 shows the list of some physiotherapy procedures that can be followed in the second phase of frozen shoulder without crossing the pain threshold. This includes shoulder wheel, shoulder pulley, self-stretching and band stretching exercises.



Ayurveda incorporations that can be given at this stage

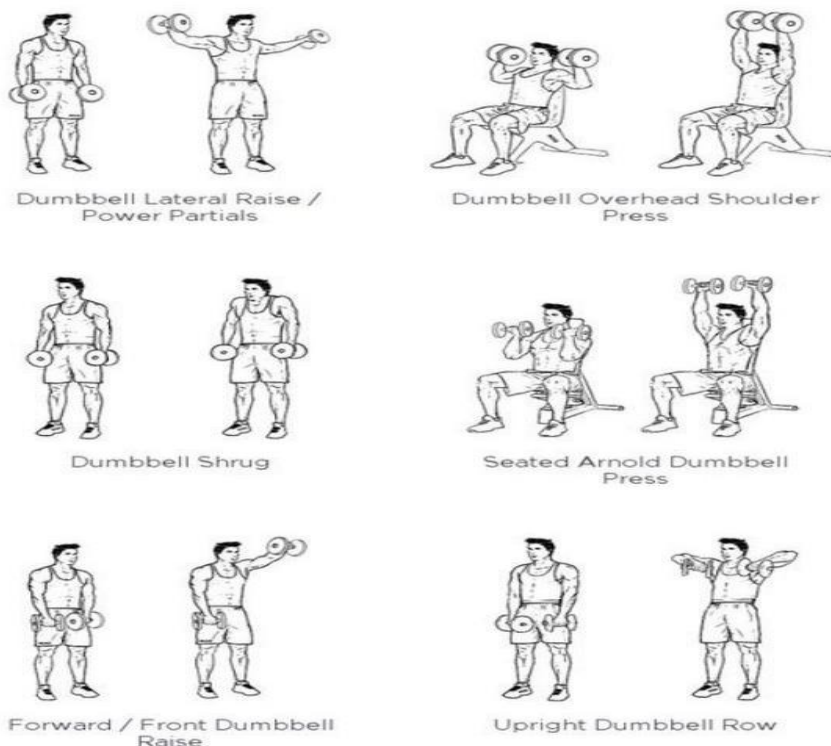
Choorna pinda sweda and Patrapinda sweda are the two classical Ayurveda Panchakarma procedures that can be incorporated at this stage. Choorna pinda sweda is the procedure of application of heated bolus prepared of combination of herbal powders. Here in this condition the drug combination can be Kottamchukkadi, Kolakulathadi etc. Patrapinda sweda is also an Ayurveda procedure that include application of heated bolus prepared of combination of herbal leaves.

3.3 Management of third phase

Third phase management includes the measures that are used when the patient has reduced stiffness and pain. In this stage the physiotherapy includes mainly stretching exercises and mild strengthening exercises. Starting strengthening exercises along with stretching exercises is the initial line of protocol at this stage. Later it has to be progressed to light isotonic dumbbell exercises (Internal rotation, External rotation, Abduction, Forward elevation etc.

Figure 03: Physiotherapy exercises for the third phase of frozen shoulder

Figure 03 shows the list of some physiotherapy procedures that can be followed in the third phase of frozen shoulder without crossing the pain threshold. This includes all the stretching exercises of shoulder in phase 02 as well as strengthening exercises of the shoulder including dumbbell exercises, band exercises etc.



Ayurveda incorporations that can be given at this stage

Shastikashali pinda sweda and Nasya are the two classical Ayurveda Panchakarma procedures that can be incorporated at this stage. Shastikashali pinda sweda is the procedure of application of heated bolus prepared of cooked shali rice. Nasya is the procedure of installation nasal drops prepared of Ayurvedic medicaments.

5. Discussion

Upanaha is a type of sudation procedure mentioned in Ayurveda Classics⁴. In this procedure certain mixture of medicaments are cooked in to poultice and bandaging is done with that mixture. This is the advantage of Ayurvedic procedure that the bandaging with upanaha not only gives the effect of immobilization and support to the joint but also possess the sudation effect by the preparation and drugs in it. Therefore, in addition to the bandaging, the procedure also gives the anti-inflammatory and analgesic effect by the action of drugs in it. Jatamayadi choorna is a herbal powder mentioned in Ayurveda classics that can be utilized in Upanaha. It is having analgesic and anti-inflammatory effects⁵.

Kashaya dhara⁶ is another a form of sudation therapy mentioned in Ayurveda classics. It is the procedure of pouring luke warm decoction over the body parts in a continues stream. The advantage of this procedure is that it can produce anti-inflammatory effect in the body without causing much movement and pressure on the body. It increases circulation by dilation of blood vessels by sudation. The medicament used for Kashaya dhara is Dashamoola kashaya⁷ which is also having anti-inflammatory and analgesic in action.

Patrapinda sweda and Shashtika shali pinda sweda are classical Ayurveda Panchakarma procedures of sudation that are given for reducing the pain as well as to strengthen the body parts. Nasya¹⁰ is the procedure of installation of nasal medicament into the nostril of the patient. It is one of the treatment modalities explained for the Apabahuka disease in Ayurveda¹¹. Prasaranyadi thaila is an Ayurveda formulation which is found to be very useful in various nerve disorders as well as various painful diseases of the head, neck and shoulders. This procedure can also attribute to the strengthening of the shoulders affected.¹²

6. Conclusion

Since, the Ayurveda incorporations in different stages of frozen shoulder can lead to fast recovery of the patient, it needs to be done pilot studies and should be added as standard of care for the patients.

7. Acknowledgments

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8. Conflict of interests

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10. References

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