



Effective Management of Frozen Shoulder: A Case Report

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Abstract: Frozen shoulder affects shoulder joints. Ayurveda links it to Vata-vitiated Avabhahuk. Frozen shoulders occur when aggravated Vata dries out its binding elements and constricts shoulder veins. This disorder restricts shoulder movement due to Sira constriction. Since aggravating variables cause all motor functions and joint ranges of motion, treating a frozen shoulder should focus on pacifying Vata and Kapha. The main aim of the present case is to assess the role of comprehensive management of a frozen shoulder in a geriatric female patient by using Panchakarma (purification therapy) and Shamana (palliative) in Ayurveda. And the objective is to reduce the duration of treatment and cure the medical condition with the greatest possible benefit. It is a single case study of a seventy years old female patient who has represented herself with complaints such as Pain and Stiffness in her right shoulder joint with its restricted movement, inability to lift a completely right hand in an upward direction, difficulty while walking due to pain in both knee joints for four months. The comprehensive regime using was prescribed for purification therapy treatment (local massage with Dashmoola Oil, Patra Pinda Sudation, Nasal instillation with Anutail (oil), Janu Basti (knee joint retention enema) with Sahcharadi oil, and medicated enema regime for 16 days. Simultaneously palliative treatment (Syrup Armex, Sinhanad Guggul, Aamvatari rasa, and Syrup Vatamritam for a consecutive month. After one month of follow-up, there was significant relief in clinical features of the disease, along with gross improvement in the range of motion of the affected shoulder joint. The afore-said regime based on comprehensive management in Ayurveda induces encouraging results in a patient with frozen shoulders within a short duration. Hence it's essential due to increasing cases in day-to-day life. So, it was concluded that the present results were due to the analgesic, anti-inflammatory & nourishing properties of Ayurveda interventions. All the above-said treatment protocol is effective in the frozen shoulder without causing any adverse event.

Keywords: Frozen shoulder, Palliative treatment, Range of motion, geriatric, Enema.

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I. INTRODUCTION

Frozen shoulder is a musculoskeletal condition in which pain and stiffness with restricted movement occur in the shoulder joint or glenohumeral joint (type of a ball-and-socket joint composed of humerus, scapula, and clavicle) ^{1,2}. It is also known as Adhesive capsulitis³. Frozen shoulder commonly affects age groups between 40-60 ⁴. It occurs more likely in women than in men. Its Aetiological Factors consist of Surgical mistakes, Structural changes, Tendon injuries, Traumatic tissue scarring & Fractures, and lesions ^{5,6}. Immobility and reduced joint mobility induced by Rotator cuff injury, broken arm (fractured), and Stroke Recovery from injury are common aggravating factors for this disease ^{7,8}. Moreover, other Systemic clinical conditions such as Diabetes, Hypothyroidism, Hyperthyroidism, Cardiovascular diseases, Tuberculosis, and Parkinson's disease are also responsible for exaggerating this clinical condition ⁹. Pain that worsens at night, stiffness & difficulty while the movement of affected shoulder joint with dull and achy pain is specific prodromal features of a frozen shoulder. It presents with clinical features such as the restricted motion of the joint or stiffness with or without pain while the motion of the shoulder joint on the affected side, slight wasting of muscles, tenderness (sometimes), or decrease in motion ¹⁰. External rotation is most severely inhibited. In the Freezing stage of this disease, pain in the shoulder joint aggravated slowly over time and may worsen at night. This stage can remain for 6 to 9 months also. In the Frozen stage, which remains for 4-12 months, there occurs an extreme level of stiffness rather than Pain, and movement of the affected shoulder joint gets restricted completely ¹¹. The third stage, i.e., the Thawing Stage, remains for 6 months to 2 years, and restricted movement of joints gets normalized ¹². There are certain limitations in conventional medicines for Analgesics & Corticosteroids commonly used to manage this condition. e.g., Corticosteroids & Analgesics are contra-indicated in specific conditions such as Osteoporosis, Epilepsy, psychosis, Cardiac heart failure, renal failure, gastritis due to peptic ulcer, Pregnant & lactating mothers, etc. Surgical interventions such as Shoulder arthroscopy have limitations as they can use in persons with Infection, Dislocation, Loosening of a component, Nerve injuries, and Glenoid fractures ¹³⁻¹⁴. In physiotherapy, Transcutaneous electrical nerve stimulation, shoulder manipulation in physiotherapy are contra-indicated in a person with a Pacemaker or with a

history of any heart disease, e.g., unstable angina, uncontrolled cardiac, severe aortic stenosis, heart failure, etc., or any skin irritation. Shoulder manipulation cannot be advised in Capsule tears, Bone bruises, Rotator cuff injuries, Nerve injuries, and Panic attacks during manipulation ¹⁵. Therefore, considering the scenario described above, alternative options in Ayurveda should be vigorously searched and evaluated for their efficacy and safety. Frozen shoulder can be correlated with *Avabahuk*, one of the *Vata* diseases mentioned in Ayurveda that mainly occurs due to aggravation of *Vata* in a primary stage followed by association of vitiated *Kapha* *Dosha* in later stage ¹⁶. Frozen Shoulder comprises two words "Ava" or "Viyoga" or "Vikratou" (dysfunction, deterioration, or separation), and "Bahuka" means the arm. Thus, Stiffness in the arm is the classical feature of Frozen Shoulder or *Bahustambha*¹⁷. According to *Sushruta Samhita*, Frozen Shoulder has been described as a condition in which vitiated *Vatadosha* in and around the shoulder causes *Shosha* (dryness) of *Ansabandhana* (shoulder ligaments, tendons, and connective tissue or capsule, leading to pain and stiffness) and constriction of blood vessels (reduced blood supply) resulting in Frozen Shoulder ¹⁸. According to *Ashtanga Hridaya* and *Ashtanga Samgraha*, this disease occurs due to vitiation of *Vata Dosha* that gets lodged at the root of the shoulder, subsequently constricting the veins and producing the loss of movements of the shoulder has been identified as Frozen Shoulder ¹⁹. The two specific terms, i.e., *Ansashosha* and Frozen Shoulder, are narrated by *Madhava Nidana* in the context of this disease ²⁰. Among them, the former can be considered as a preliminary stage of the latter. The primary objective of the present case is to evaluate the role of Panchakarma (purification therapy) and Shamana (palliative) in Ayurveda in the comprehensive management of a frozen shoulder in a geriatric female patient, with the goals of minimizing the duration of treatment and achieving maximum benefits.

2. CASE STUDY

2.1. Details of the case

A 70-year-old female patient residing at *Ralegaon, District Wardha*, with OPD Number 3054266, came to OPD, Panchakarma, Mahatma Gandhi Ayurved Hospital and Research Centre, Salod, Wardha, Maharashtra 6 months with chief complaints mentioned in table no.1.

2.1.1. Chief Complaints

Table I: Chief Complaints			
S.N.	Symptoms	Severity	Duration
1	Pain in the right shoulder joint (VAS)	7+	Since four months
2	Stiffness in the right shoulder joint	Severe	
3	Restricted movement of the right shoulder joint	Severe	
4	Unable to lift a completely right hand in an upward direction	Severe	
5	Pain in both knee joints ((VAS))	4+	Since 12 years
6	Difficulty while walking	Mild	

Table-I shows details of a 70-years old female patient who has represented herself with complaints such as Pain and Stiffness in her right shoulder joint with its Restricted movement, inability to lift a complete right hand in an upward direction, difficulty while walking due to pain in both knee joints since 4 months.

2.2. History of present and past illness

Table2: History of the patient		
S.N.	Heads	Details of the patient
1	Past History	<ul style="list-style-type: none"> K/C/O Hypertension since 12 years (on regular antihypertensive medication) No/h/o D.M. type –II/surgical illness/trauma/ No history of any long-term consumption of any drug responsible for frozen shoulders, like corticosteroids.
2	Family History	<ul style="list-style-type: none"> Not specific
3	Personal History	<ul style="list-style-type: none"> ❖ Diet: Lack of appetite but frequent consumption of spicy food. ❖ Sleep: Disturbed sleep due to the pain ❖ No, any addiction
4	Menstrual history	➤ Menopause before 21 years

Table-2 shows a patient history who had no complaints regarding shoulder joints before four months. Gradually pain in the right shoulder joint developed with its restricted movement & patient was facing a problem lifting a completely right shoulder in an upward direction. She received symptomatic oral & local allopathic medicines, e.g., analgesic and gel, respectively but didn't get satisfactory relief; that's why she came to OPD, Panchakarma, Mahatma Gandhi Ayurved Hospital and Research Centre, Salod, Wardha, Maharashtra for further management. The patient was thoroughly examined and was advised to get admitted to the IPD section for better management through purification therapies.

2.3. Details of Examinations & Investigations

2.3.1. General & specific Examinations for diagnosis

General & specific examinations of the diagnosis of the condition according to modern science are provided in Tables 3 and 4.

Table 3: General & specific examinations of the diagnosis of the condition according to modern science		
S.N.	Type of Examination	Findings
1	General examination	<ul style="list-style-type: none"> No Pallor /Icterus /clubbing Pulse – 72/min B.P. – 130/80 mmHg RR- 18/min Temperature – 98 F Weight - 65 kg
2	Specific examinations	Findings
i	Inspection	<ul style="list-style-type: none"> Discoloration: -absent Muscle wasting: - absent Deformity: -absent Limited shoulder movement Decreased Range of motion(ROM) of Right Shoulder joint
ii	Palpation	<ul style="list-style-type: none"> Stiffness: -present at Rt. Shoulder joint Temperature: -absent Pain: -present Her other system examinations revealed no abnormality

Table-3 shows general and specific examination finding details of a patient with a respective pulse, blood pressure, respiratory rate, temperature, weight, discoloration, muscle wasting, any deformity, and movements of joints.

Table 4: Range of Motion(ROM) Of Right Shoulder joint			
S.N.	ROM of Right Shoulder joint	Normal Range	Observations
i	Flexion	150-180	45 ⁰
ii	Extension	45-60	20 ⁰
iii	Abduction	150	40 ⁰
iv	Internal Rotation	30-50	70 ⁰
v	External rotation	80-90	25 ⁰

Table-4 shows the right shoulder joint's range of motion (ROM) regarding flexion, extension, abduction, and internal and external rotation.

2.4. Diagnosis: Right Frozen shoulder

2.5. Indication

The indication of a frozen shoulder in the present case is the range of motion of the Right shoulder was grossly hampered as Flexion, extension, Abduction, and external Rotation were grossly reduced up to 45°, 20°, 40°, and 25°, respectively.

2.6. Treatment plan

Table5: Type of Shodhana (purification) Treatment				
S.N.	Type of Panchakarma Treatment	Drug	Details of Therapy	Duration
1	<i>Sthanik Abhyanga</i> (Local Massage)	<i>Dashmoola</i> Oil	Over shoulder joints, upper back, and both upper hands	16 days
2	<i>Patra Pinda Sudation</i> (Sudation with poultice prepared with leaves)	<i>Eranda patra, Bela Patra, Nirgundi Patra</i> and <i>Dashmool</i> Oil	Over shoulder joints, upper back, and both upper hands	16 days
3	Nasal instillation <i>Karma</i> (Errhine therapy)	<i>Anu</i> oil	8 -8 drops in each nostril daily	14 days
4	<i>Janu Basti</i> (knee joint retention enema)	<i>Sahcharadi</i> Oil	Both knee joints	7days
5	<i>Kala</i> Medicated enema (Medicated enema for 16 days)	<ul style="list-style-type: none"> <i>Niruha</i> Medicated enema (<i>Dashmool</i> decoction enema 800 ml+<i>saindhava</i> 15 gm + <i>Madhu</i>-15 gram+ <i>Sahcharadi</i> Oil(30ml) <i>Anuvasana</i> Medicated oil enema with <i>Sahcharadi</i> Oil(60ml) + <i>Dhanvantara</i> Oil(60ml) 	2 <i>Niruha</i> Medicated enema followed by 1 <i>Anuvasana</i> Medicated enema	16days

In table-5 describes a treatment plan of purification therapy as local massage, sudation with a poultice, Errhine therapy, retention enema, and medicated enema.

2.7. Treatment Procedure

Sthanik Abhyanga (Local Massage)- Apply the oil all over the body, paying particular attention to the top of the head, forehead, ears, cheeks, and jawline. Moving clockwise and circularly, massage chest and abdomen before moving on to back and butt²¹. *Patra Pinda Sudation* (Sudation with poultice prepared with leaves)- *Patra Pinda Sweda* is a treatment in which the leaves of medicinal plants with analgesic, anti-degenerative, and anti-inflammatory properties are utilized for fomentation (inducing perspiration) of painful areas²². Nasal instillation *Karma* (Errhine therapy)- is a medicinal procedure where the medication (Medicated Oil) is administered via Nasa (Nose), primarily to eliminate the vitiated Dosha

contained in Shira and its constituent parts²³. *Janu Basti* (knee joint enema)- implies a procedure where medicinal oil is applied and allowed to sit for a set amount of time in a compartment or cabin built around the knee joint or joints using wet black gram flour²⁴. *Kala Basti* Medicated enema (Medicated enema for 16 days)- Pre-Procedure: It entails full-body massages and steam treatments for sixteen days. Procedure: - Ghrut, oil A simple rubber catheter and syringe are used to include around 750 ml of kadha, honey 15 ml, rock salt 10 gm, and oil 30 ml through the anus. It's a completely painless process. No significant post-procedure is necessary for this kind of Panchkarma. If necessary, the patient might have to pass stool²⁵.

Table6: Shamana (palliative) Treatment					
S.N.	Type of Internal medication	Dose	Anupana	Time of administration	Duration
1	Syrup Armex	15 ml twice a day	Lukewarm water	After Meal	14 days
2	<i>Simhanad Guggul</i>	250 mg Thrice a day	Lukewarm water	After Meal	1 month
3	<i>Aamvatari Rasa</i>	250mg Twice a day at	Lukewarm water	After Meal	1 month
4	Syrup <i>Vatamritam</i>	3 tsp Twice a day	Lukewarm water	After Meal	1 month

In table-6, there is a description regarding a treatment plan of palliative treatment planned for a patient. The comprehensive regime using was prescribed for her purification therapy Treatment (local massage with *Dashmoola* Oil, *Patra Pinda Sudation*, Nasal instillation with *Anu*oil, *Janu Basti* (knee joint retention enema) with *Sahcharadi* Oil & *Kala* Medicated enema regime with *Dashmooladi Niruha* (decoction enema) and medicated oil enema with *Sahcharadi* Oil & *Dhanvantara* Oil for 16 days. Simultaneously Shamana Treatment (Syrup Armex, *Simhanad guggul*, *Aamvatari rasa* & Syrup *Vatamritam* for a consecutive 1 month.

2.8. Therapeutic outcome

Table7: Therapeutic outcome				
S.N.	Type of assessment (Symptom/Examination)	Before Rx	After 8 days	After treatment (After 16 days)
A Subjective parameter				
1	Pain in the right shoulder joint (VAS)	7+	4+	Absent (0)
2	Stiffness in the right shoulder joint	Severe	Moderate	Absent
3	Restricted movement of the right shoulder Joint	Severe	Mild	Absent
4	Unable to lift a completely right hand in an upward direction	Severe	Moderate	Absent
5	Pain in both knee joints (VAS)	4+	1+	Absent
6	Difficulty while walking	Mild	Absent	Absent
B Objective Parameters				
I	ROM Right Shoulder joint			
i	Flexion	45°	70°	130°
ii	Extension	20°	45	60°
iii	Abduction	40°	60°	140°
iv	Internal Rotation	70°	80°	50°
v	External rotation	25°	80°	90°

In table-7, outcomes were noted regarding pain in the right shoulder joint (VAS), stiffness in the right shoulder joint, restricted movement of the right shoulder joint, movement of the hand in an upward direction, and other movements, i.e., flexion, extension, abduction, internal rotation, external rotation.

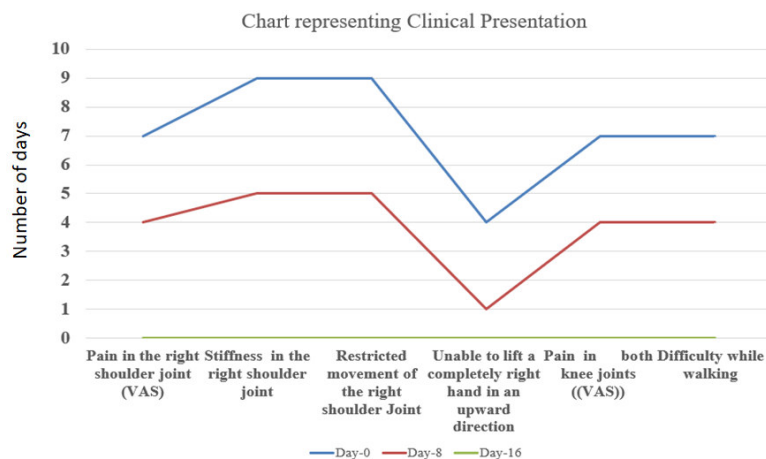


Fig-1: Clinical presentation of the case

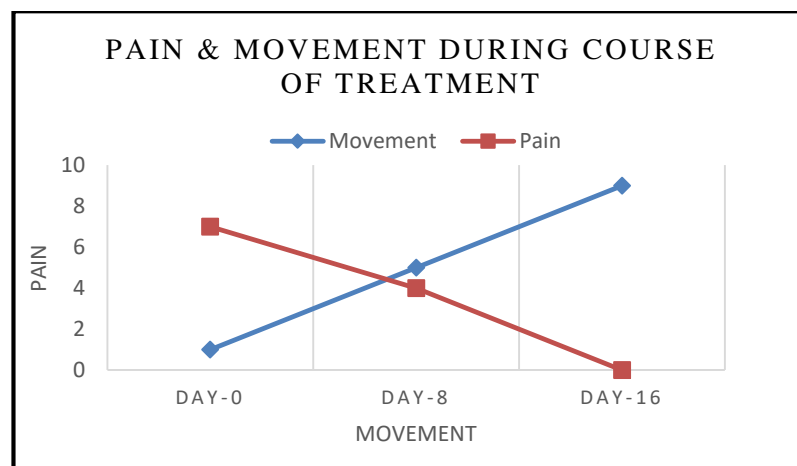


Fig-2: Pain & Movement during treatment

2.9. Clinical Outcome

There was significant relief in symptoms after 14 days of purification therapy. Assessment of symptoms & other

examinations, e.g., shoulder joint range of movement, was done before, during, and after treatment, as mentioned in Table 7 [Fig-1 & Fig-2]. After 1 month, there was significant relief in the disease's clinical features and gross improvement

in the range of motion of the affected shoulder joint. An afore-said regime based on comprehensive management in Ayurveda induces encouraging results in a patient with frozen shoulders within a short duration. Such miraculous results may be due to Ayurvedic interventions' analgesic, anti-inflammatory & nourishing properties. Before treatment, the average ROM for flexion was 45 degrees, extension was 20 degrees, abduction was 40 degrees, and external and internal rotation was 25 and 70 degrees. The patient reported a 60% improvement in shoulder pain during 8 days of treatment and a 100% improvement after 15 days. After 15 days, flexion results were 130 degrees, extension was 60 degrees, abduction was 140 degrees, and external and internal rotation was 90 and 50 degrees.

2.10. Expected Complications

With the present treatment, there may be expected complications such as residual pain, residual muscular stiffness, headache, nasal blockage, heaviness in the head, dryness, or nasal irritation.

3. DISCUSSION

The main aim of treatment, in this case, is alleviating the pain along with preserving or restoring the mobility and flexibility of the affected shoulder joint up to normal range & ultimately, improving the quality of that patient's life. Local massage with *Dashmoola* Oil and *Patra Pinda Sudation* with *Eranda Patra* (Castor plant leaves), *Bela Patra* (Aegle marmelos leaves), *Nirgundi Patra* (Vitex negundo), and *Dashmool* Oil induces relief in the swelling, pain & stiffness due to its analgesic & anti-inflammatory properties of drug as well as procedures. It improves the range of motion of the joint by reducing stiffness as a result of its *Vata-Kapha*-reducing actions. The role of External oleation and *Sudation* in relieving pain and stiffness in musculoskeletal and rheumatological pathologies is proved by Ashtankar P et al., 2019 & Mohan M et al., 2019^{26,27}. The anti-inflammatory role of the local application of the herbal drug in various rheumatological conditions is already proved by Wadnerwar, N., 2020²⁸. Both also induce various movements of the affected joint smoothly & reduce the difficulty while walking and doing various day-to-day activities²⁹. The local External oleation with *Dashammol* oil also strengthens the weak muscles, especially the deltoid in the shoulder joint, due to its nourishing and *Vata* pacifying properties. *Nasya Karma* (Nasal installation) with *Anu* oil: Medicines administered through the nasal route, passive via *Shringantaka Marma*, and enter all the sense organs & strengthen them. Therefore, Nasal instillation offers encouraging results in its specific indications such as Stroke (*Pakshaghata*), Frozen shoulder (*Avabahuk*), Cervical spondylitis (*Manyastambha*), Bell's Palsy (*Ardita*), Syncope or unconsciousness (*Sangyanasha* and *Murchha*), Thyroid disorders (*Galganda*), Lack of taste (*Aruchi*), sleep disorders (*Anidra*), etc³⁰. The exclusive role of Nasal instillation in these above-said disorders is elaborated by *Sushruta* by stating that Drug used for Nasal instillation reaches the site of *Shringataka Marma* (vital point in nasal area) where the union of blood vessels supplying to the ear, nose, eye, and tongue takes place. Therefore, the meaning of the verse, i.e., "*Nasa Hi Shirsodwaram*" (the gateway of brain/head) showing the mode of action of Nasal installation in various head and systemic disorders, can be vividly explained based on the above classical references³¹. Its effect in systemic disorders can be explained as it is the most

accessible, non-invasive route of drug administration that takes place through the porous endothelial membrane and highly vascularized nasal epithelium by providing fast absorption of active principles of the drug in a small quantity directly into the systemic circulation & avoiding the hepatic first-pass metabolism. Simultaneously, delivery of components of medicines administered during this Nasal installation offers rapid attainment of therapeutic blood levels with maximum bioavailability & rapid onset of its pharmacological action. It allows the direct passage of drugs into the central nervous system by bypassing the hurdles for the blood-brain barrier. Moreover, Nasal installation also eliminates the morbid *Doshas* (toxins) from the supraclavicular region, shoulder, neck & head regions. It offers better systemic effects of the drug by controlling different neurological functions governed by higher brain centers by avoiding the liver first pass effect & metabolism by GIT. The efficacy of Nasal instillation in managing the frozen shoulder joint is already narrated by Das B et al., 2010³². The role of *Patra-Pinda Sudation* and Nasal installation in such an ailment is justified by Sawarkar P et al., 2018³³. *Anu* Oil is nutritive & excellent *Vata* pacifying in nature; therefore, useful to correct the pathology of a frozen shoulder. Moreover, it also alleviates the atrophy of the muscles, especially deltoid muscles³⁴. *Sahcharadi* Oil was used for *Janu basti* (knee joint retention enema), and oil Medicated enema in this patient. According to *Vagbhata*, it pacifies *Vata Dosha* due to its *Ushna Veerya* (hot potency) and *Madhur Rasa* (sweet taste). It also subsides *Kapha*; it is useful in stiffness, inflammation, and tremors in *Vata* diseases and frozen shoulder & osteoarthritis to relieve stiffness. It exhibits more *Vata* pacifying properties due to *Dashmool* (medicinal ten roots). Most drugs in it possess hot potency, and *Sthira Gunatmak* (stagnant qualitative property) suppresses the *Vata Dosha*, which is responsible for the pain and stiffness of Muscles³⁵. *Kala* Medicated enema with above-said drugs, i.e., with *Niruha* medicated enema (*Dashmool* decoction 800 ml + rock salt 15 gm + honey-15 gram + *Sahcharadi* Oil (30ml) & medicated oil enema with *Sahcharadi* Oil (60ml) + *Dhanvantara* Oil (60ml) was prescribed to the patient considering the old age of the patient in which the predominance of the *Vata Dosha* remains at a greater extent. This medicated enema regime also becomes helpful in resolving other rheumatological complaints, such as pain in both knee joints, due to its *Vata* pacifying properties. It radically eliminates the vitiated *Vata Dosha* as it is administered in the prime site of *Vata*, i.e., the large intestine³⁶. Simultaneously, it also reduces the stiffness by correcting the vitiated *doshas* in the joint. Medicated oil enema checks over the degenerative changes in the joint and associated structures involved in the pathogenesis of frozen shoulder and osteoarthritis. Syrup *Armex* is an herbal pain reliever. It subsides pain & inflammation in the frozen shoulder by blocking the activity of chemicals that release inflammation and pain due to its action, like Nonsteroidal Anti-inflammatory Drugs. It also increases joint movements by reducing stiffness³⁷. *Sinhanad Guggul* is a herb mineral preparation used to treat and manage joint pains, swelling, stiffness, and inflammation associated with gout and rheumatoid arthritis. Powered with antirheumatic, detoxifying, antitoxin, antimicrobial, antipruritic, depurative, laxative, anti-gout, and demulcent qualities. All its properties become helpful in breaking the pathogenesis of a frozen shoulder and relieving stiffness. Especially the vitiation of *Ama* (toxin) and *Kapha*, which are the chief causative factors in this disease, get corrected by its *Tikta* (bitter taste)

and *Katu Rasa* (pungent taste), having antagonistic properties. It also kindles the *Agni* due to its pungent taste & digestive fire-increasing property. It checks over the excessive formation of *Vitiated Kapha* in the body that indirectly destroys the obstruction of the channels related to bones & muscles. This *Ushna Veerya* (hot potency) also checks over the stagnation of *Ama* at the site of pathogenesis that results in a reduction in the *Srotorodha* and pain. The pain aggravated by the vitiation of *Vata* also subsided due to *Vata Shamana* Property of its *Ushna Virya* (hot potency) & *Snigdha Guna* (unctuousness quality). *Lekhan* (scraping) has the opposite action of *Sheeta* (cold) and *Ruksha Guna* (dry property) of *Vata*. The scrapping effect induced by the lighter property and bitter taste scrapes the adhered *Dosha* from the vitiated channels. *Guggulu* (oleo-gum resin) is an important content of this formulation that minimizes pain in the frozen shoulder due to its *Vata-reducing* property³⁸. *Aamvatari rasa* is indicated in pain and inflammation associated with various rheumatological & musculoskeletal disorders. It increases joint movement and flexibility, therefore, is useful in various *Vata* disorders. It kindles the digestive fire through the appetizer-digestive actions of *Kajjali* (purified black collyrium of mercury sulfide), *Chitraka* (*Plumbago zeylanica*), *Guggulu* (oleo-gum resin), and *Eranda* (*Ricinus communis*). It also significantly corrects vitiated *Vata* by *vata* pacifying & laxative properties of *Triphala* (*Emblica officinalis*, *Terminalia bellirica*, and *Terminalia chebula*), *Guggulu* (oleo-gum resin), *Eranda* (*Ricinus communis*), and *Gandhaka* (medicated sulfur), reducing the intensity of the pain in that joint. Such the *Vatanulomana* (expelling) effect also contributes to maintaining the physiological function of *Annavaha Strotas* (digestive channels) in the normal state and corrects the digestive fire. Its nourishing and rejuvenating effects are also offered by herbs such as *Amalaki* (*Emblica officinalis*) & mineral compounds, e.g., *Gandhaka* (medicated sulfur) and *Parada* (mercury), which further prevent the degeneration of the tissues & avoid the atrophy of muscles, especially deltoid muscles in the shoulder joint. *Vitiated Kapha* gets corrected by the astringent property of *Haritaki* (*Terminalia chebula*) and *Vibhitaki* (*Terminalia bellirica*)³⁹. *Syrup Vatamritam* is an excellent *Vata* pacifier herbal preparation that reduces the pain associated with stiffness due to *Vata* pacifying properties⁴⁰.

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4. CONCLUSION

The therapy mentioned above regimens cause rapid improvement in all symptoms of a frozen shoulder without creating any adverse effects. It assists in becoming more proficient by improving active external rotation of the afflicted shoulder joint. In the future, it may become the first-line treatment for frozen shoulders in the early stages of the disease. It also helps to strengthen muscle power and pain threshold capacity. It helps the body swiftly recover to the natural range of motion of the joint. More large-scale clinical trials should be undertaken to investigate the efficacy of the treatment mentioned above protocol.

5. ACKNOWLEDGEMENT

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6. ETHICAL APPROVAL STATEMENT

Written consent was received from the patient for publishing this case study. The ethical clearance for the publication of this case study was taken from the local ethical committee at Mahatma Gandhi Ayurved College, Hospital and Research Centre, Salod (H), Wardha, with IRB No. MGAC/IEC/April / 2023/ 84. All procedures and treatments advised and performed in this study were conducted by ethical standards mentioned in the 1964 declaration of Helsinki, as revised in 2013.

7. AUTHORS CONTRIBUTION STATEMENT

All authors contributed to writing this Case study. Dr. Gaurav Sawarkar made the primary draft of the article and the final manuscript. Dr. Punam Sawarkar advised *Panchakarma* and *Shamana* Treatment, and she also assessed the patient (before and after treatment). Dr. Shilpa Yerme gave valuable opinions for corrections in the draft manuscript.

8. CONFLICT OF INTEREST

Conflict of interest declared none.

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