ISSN PRINT 2319 1775 Online 2320 7876
 UGC CARE Listed (Group -I) Journal Volume 11, Iss 02, 2022

ADHESIVE CAPSULITIS OF SHOULDER (FROZEN SHOULDER)- ELABORATIVE ANATOMICAL APPROACH, CLINICAL PRESENTATION AND HOMOEOPATHIC MANAGEMENT

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Abstract: Adhesive capsulitis of shoulder joint is a condition which causes gradual increase in the pain of the shoulder joint and in turn causes restriction of motion. This condition also comes with a slow and spontaneous recovery from all the symptoms which can take months to even years. In this review article, Prime focus on the anatomical structure of shoulder joint, the pathophysiology of the Adhesions with the risk factors, the signs and symptoms of adhesive capsulitis, evaluation, approach to link the adhesive capsulitis with homoeopathic miasm and homoeopathic medicines that can be given in case of the disease.

Keywords: Adhesive capsulitis, Frozen shoulder, Shoulder Joint, Shoulder pain, Homoeopathy in frozen shoulder.

Review:

Definition:

Adhesive Capsulitis, is the condition where there is gradual increase in the pain and restriction of all the movements of the shoulder joint, but, with slow and spontaneous restoration of partial or complete movement of the joint over period of months or years.

Anatomical Approach:

Shoulder Joint:

Also known as Gleno-Humoral Joint. It is a ball and socket variety of synovial joint. Being a Ball and Socket variety of the joint, the shoulder joint is one of the mobile of all joints in the human body, allowing movements in all three planes and about all three axes.

Articular Surfaces-

The head of the humerus will articulate with the Glenoid cavity of the Scapula.

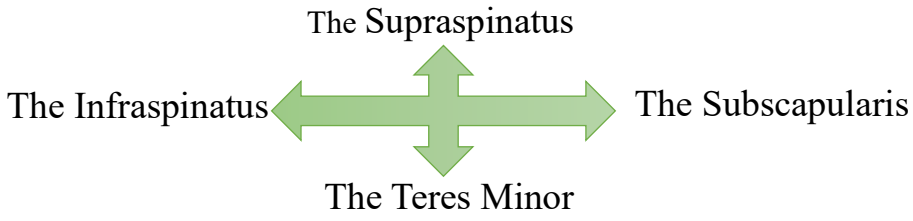
The head of the humerus is 3 time bigger than the Glenoid cavity/fossa of the scapula which makes the shoulder joint extremely mobile and also one of the most common joint to be dislocated.

Ligaments of the shoulder joint-

Capsular Ligament- It is very loose and permits free movement. It is least supported inferiorly where the dislocation is common. Such dislocation can cause axillary nerve injury.
Attachments of Capsular Ligament-
Medially- to the scapula beyond the supraglenoid tubercle and the margins of the labrum.

Laterally- To the anatomical neck of the humerus.
Inferiorly- Attachment extends down to the surgical neck.
Superiorly- It is deficient for the passage of the tendon of the long head of the biceps brachii.
Additional support to the Capsular ligament anteriorly is provided by-
The superior glenohumeral ligament.
The middle glenohumeral ligament
The inferior glenohumeral ligament.

The Coracohumeral Ligament: It extends from the root of coracoid process to the neck of the humerus opposite the greater tubercle.
Main function of coracohumeral ligament is to provide strength to the Capsular Ligament.
Transverse humeral ligament- It bridges the upper part of the bicipital groove of the humerus (between the greater and lesser tubercles).
The Glenoid Labrum- It is a fibrocartilaginous rim which covers the margins of the glenoid cavity, thus increasing the depth of the cavity.
Musculo-tendinous cuff/ rotator cuff of shoulder joint-
The rotator cuff muscles are four muscles that form a musculotendinous unit around the shoulder joint. These are:



All four muscles are firmly attached around the joint in such a way that they form a sleeve (rotator capsule).
Individually, each muscle has its own pulling axis that results in a certain movement (prime mover), while together they create a concavity compression. This is a stabilizing mechanism in which compression of the humerus into the concavity of glenoid fossa prevents its dislocation by translating forces.

Brief History:

- One of the earliest descriptions of the pathology of a frozen shoulder was by **Neviaser, in 1945**, who found thickened, contracted capsule around the humeral head. Histology of the capsule showed fibrosis and inflammatory cells.
- **In 1969, Lundberg**, reaffirmed the microscopic findings of increased fibrous tissue, fibroblasts, and vascularity but found an unchanged synovial lining and no inflammatory cell infiltrate.
- **In 1982, Matsen FA and Kirby RM**, described that the frozen shoulder may arise from any cause of shoulder pain, immobility, or dysfunction, whether intrinsic or extrinsic.

Pathophysiology and histology:

- Frozen shoulder is usually described as **fibrotic, inflammatory contracture of the rotator interval, capsule, and ligaments.**

However, the development of Adhesive Capsulitis remains not fully understood. Most recognized pathology is **cytokine-mediated synovial inflammation** with fibroblastic proliferation based on arthroscopic observations. **Additional findings include adhesions around the rotator interval caused by increased collagen and nodular band formation.**

- The structure usually **affected first is the coracohumeral ligament** Contraction of the coracohumeral ligament limits external rotation of the arm, which is usually first affected in early AC.
- **In advanced stages, thickening and contraction of the glenohumeral joint capsule develop**, further limiting the range of motion in all directions. Recent arthroscopic evaluation of patient with arthrographically documented adhesive capsulitis has established four stages of the disease.
- **Stage I (pre-adhesive stage):** Is seen in patients with minimal or no limitation of motion.
- **Stage II (acute adhesive synovitis):** There is a proliferative synovitis and early adhesion formation.
- **Stage III (Stage of maturation):** Has less synovitis with loss of axillary fold.
- **Stage IV (chronic stage):** Adhesions are fully mature and markedly restrictive.

Histology- The studies of histopathology for the glenohumeral capsule have confirmed a significant increase in fibroblasts, myofibroblasts, and inflammatory cells, like B-lymphocytes, mast cells, and macrophages.

Predisposing factors:

- Age incidence**:** It is uncommon below the age of 40 years or over the age of 70. Patients are usually middle aged, with the mean age for males being greater than females (55 years compared to 52 years)
- Trauma**:** It is observed that frozen shoulder is associated with major trauma to the shoulder or other parts of the extremity. The post-surgery frozen shoulder can be prevented by careful post operative exercises.
- Immobilization period**:** Common to most patients presenting with frozen shoulder, is a period during which the shoulder has been relatively immobile. The reason for the period of immobility is diverse, a flare up of cervical spondylosis, minor shoulder trauma, pain after overuse etc.
- Diabetes mellitus**:** In general population the incidence of frozen shoulder is about 2-5%, whereas among diabetics it is 10-20%. Insulin dependent diabetics have a higher incidence of frozen shoulder (36%). Incidence of bilateral involvement is still higher (46%). So, whenever a patient comes with the bilateral shoulder pain, investigations should exclude diabetes. Patients with frozen shoulder and diabetes are more likely to have retinopathy. Patients who are insulin dependent for more than 10 years have a more serious risk of developing shoulder symptoms persisting for more than two years.
- Cervical disc disease**:** Lundberg and others reported an increased incidence of frozen shoulder in patients with degeneration of the intervertebral disc of cervical spine. The peak incidence of cervical disc degeneration coincides with the peak incidence of frozen shoulder.
- Hyperthyroidism: Association of frozen shoulder with hyperthyroidism has been reported. Shoulder disorder resolves with the correction of hyperthyroidism.

- Thoracic disorders**:** association of frozen shoulder and emphysema. Upper lobe bronchogenic carcinoma may be associated with frozen shoulder. Long standing association of ischemic heart disease with frozen shoulder is well known.
- Intracranial pathology and frozen shoulder: Patients with hemiplegia, cerebral haemorrhage, tumours have an increased risk for frozen shoulder.

Clinical presentation:The clinical presentation of frozen shoulder or adhesive capsulitis is divided into 2 categories:

Primary Frozen Shoulder	Secondary Frozen Shoulder
Primary frozen shoulder: unique condition that rarely occurs in same shoulder and mostly UNILATERAL. Subsequent involvement of other shoulder can happen in 20% cases. This is divided into 3 clinical stages: **The freezing stage- Also known as painful stage, There is a gradual onset of diffuse shoulder pain which cannot be localized. Progressive onset of pain lasting for weeks to months.** **The pain is worse at night and is exacerbated by lying on the affected side.** **History of sleep disturbance is very common and it is during this stage, that most of the patients are anxious.** **The duration of the phase varies from 2-9 months.** Usually there is less discomfort as the patient use the arm less because of pain. It is often difficult to obtain a history of precipitating factors. **The frozen stage:** **Also called as stiffening stage.** **The painful stage is usually followed by progressive loss of shoulder motion. This may present for 4-12 months.** **Patient notices inability to use the arm in daily activities like dressing, washing hair or personal hygiene coincide with the objectively measured shoulder motion. Patient complain of difficulty in reaching out for objects, using the back pocket etc.,**	Precipitating event can be identified in these patients. There may have been a recent episode of shoulder pain, due to over use. **Localized shoulder pain suggesting a subacromial bursitis or tendinitis may have occurred which may have resolved** **Frozen shoulder may develop after a soft tissue trauma or a fracture.** A history of an upper extremity fracture followed by a full-blown frozen shoulder is seen less now a days due to emphasis on early mobilization of shoulder. **Frozen shoulder may also be due to a partial thickness tear of the rotator cuff that has been misinterpreted as an intrinsic shoulder pain or any inflammatory condition of the shoulder joint or adjacent soft tissue.**

inability to reach the back of the head or interscapular area is expressed by female patients **The pattern of shoulder movements restriction is characteristic, first external rotation, second internal rotation and then abduction.** Most of the patients will have a restriction of external rotation of less than 30 degree. Internal rotation is limited where the patient is unable to lift the thumb past lumbar L2 vertebra. The abduction is restricted allowing less than 110 degree. **The frozen stage:** **Patients often experience a dull ache and a periscapular pain punctuated by sharp pains which occur when the arm comes to its free range of motion. As the motion is regained, pain subsides.** **Thawing stage:** **Final stage described as thawing or the gradual regaining of motion is measured in weeks or months; rather than in days.** As motion slowly increases there is progressive lessening of discomfort. The time taken is quite unpredictable. Time taken by the patients to regain functional range of movement may be 6-9 months sometime it may be even up to 2 years. Shoulder movement is regained gradually without specific treatment.	

Evaluation and examination:

- A detailed history was elicited with particular reference to frozen shoulder.
- A preliminary general physical examination is done. The built and nourishment, physiological age and psychological status of the patients are assessed.
- Systemic examination of cardiovascular, Respiratory, gastrointestinal, and genitourinary examinations are followed as routine, to rule out any specific cause for pain restricted movements of the shoulder joint and a detailed local examination has to be done.

Palpation

- Palpation of the shoulder has to be regionalized by considering the anterior, lateral, posterior and superior aspect of the shoulder separately.

- Tenderness, Swelling, Temperature changes, deformities, muscle contractures and relationship of various structures have to be noted.

Movement:

Both the quality and the range of motion of both shoulders are recorded. The quality of motion is seen as the ease of movement of the upper limb in total when the patient is undressing.

Range of Motion

As per the recommendation of the "Society of American Shoulder and elbow surgeons" the following arcs of motion are recorded.

- Passive forward elevation with the patient in supine position measured as the angle between the arm and thorax.
- Passive external rotation with the arm at the side measured as an angle between the fore arm and the sagittal plane with the elbow flexed to 90 degree.
- Active internal rotation measured as the level of spinous process that the patient can reach behind the back with the tip of the thumb of the affected hand.
- Active abduction in the plane of the scapula, measured as the angle between the trunk and the arm.

The scoring system for function are as follows: This scoring pattern is based on the recommendation of "The society of American Shoulder and elbow surgeons".

Different basic function like tucking the saree of back if female or using the back pocket if male and touching the opposite axilla, eating, combing hair and use of hand overhead were assessed.

The functional scores were as follows:

Score 0	Patient unable to do function
Score 1	Impaired function
Score 2	Function done with difficulty
Score 3	Mild compromise in doing function
Score 4	Normal range of function

Imaging Tests:

Other tests that may help your doctor rule out other causes of stiffness and pain include:

- **X-rays.** Dense structures, such as bone, show up clearly on x-rays. X-rays may show other problems in your shoulder, such as arthritis.
- **Magnetic resonance imaging (MRI) and ultrasound.** These studies can create better images of soft tissues. They are not required to diagnose frozen shoulder, however, they may help to identify other problems in your shoulder, such as a torn rotator cuff.

Differential diagnosis:

The differential diagnosis includes:

1. Acromioclavicular arthropathy,
2. Autoimmune disease,

3. Biceps tendinopathy,
4. Glenohumeral osteoarthritis,
5. Rotator cuff tendinopathy or tear,
6. Subacromial and subdeltoid bursitis

Miasmatic Evaluation:

Adhesive capsulitis/ Frozen shoulder mainly comes under the PSORO- PSYCOTIC miasm.

- Clinical stage I & II- is directly related to the inflammatory lesion which is psoric in nature and predominantly associate with pain, loss of motion/decreased movement of shoulder joint. The stage of pain with inflammation progressively developed in sycotic miasm.
- Stage III- is predominantly sycotic with some extent of psoric manifestation with restricted movement, stiffness, chronic inflammation and stage of fibrosis.
- Stage IV: the pain subside and permanent fibrosis and stiffness is permanently established in shoulder joint and it complete the sycotic phase.

Homoeopathic management:

- Rhus Toxicodendron: Top Grade Medicine for Frozen Shoulder

Key Indications for using Rhus Tox:
Stiffness of the shoulder.
Recurring pain due to getting chilled when hot, rheumatism caused by damp weather and worse in damp climate.
Restlessness with pain worse on first motion, better by continued motion.

- Sanguinaria Canadensis: For Right Sided Frozen Shoulder

Key Indications:
Right shoulder is affected.
There is nightly aggravation of the pain.
Difficulty in raising the arm.

- Ferrum Metallicum: For Left Sided Frozen Shoulder

Key Indications:
Left shoulder is affected.
Aggravation of pain by motion.
Pains get better by warmth.

Other Important Remedies

- **Bryonia Alba**: **For Pains getting Worse from Least Motion.**

Pains are relieved by moderate pressure and warmth.
There is inflammation of joints with are HOT AND SWOLLEN but the patient feels chilly.

- **Causticum:** For AMYOTONIA (when muscle is incapable of contraction) **Shortening and hardening of muscles which can be felt by the hand as a hard ridge.** For contraction of muscles and tendons.
- **Phytolacca:** For Right Sided Frozen Shoulder

SHOOTING FROM THE CARDIAC REGION.
Pains in the shoulder and arms feel like electric shocks. Pains are shooting in character and

travel from one part to the other.
For chronic bruised state of the body, bone pain, body aches, pain in joints, worse at night, from warmth of bed or from warm application.

Wants to be COLD.

- **Ledum Palustre:** For Pains on Raising the Arm and

TRAVELLING FROM DOWNWARD TO UPWARDS.
Inflammation of the joints with Uric acid dispositions.
Chilly yet pains are better by cold application.
Pain caused after punctured wounds (injections) and worse on warm application.

- **Kalmia Lotifolia: Pain going in downward direction with numbness.**

Pains which shift rapidly.
Pain in ULNAR NERVE.

- **Kali Carb.: STICHING, STABBING AND BURNING PAIN**.

Better by cold application and not by motion or rest.
Patient shrieks out in pain.
If the patient covers the part with pain, pain shifts to uncovered parts.

- **Chelidonium:** Rheumatism with oedema, heat, tenderness and stiffness.

Pain aggravated by slightest motion or touch.
Better only by constant bath by warm water.

- **Syphilinum:** Where Pains get Worse on Raising the Arms, and also **especially during night.**
- **Oxalic Acid: Left sided rheumatic troubles with sharp pains through lower lobe of the left lung.**

Worse from sweat.
Pain under scapula, between the shoulder, extending downwards to the small of the back.

- **Arnica Mont.: Pain when patient is afraid of touch or approach.**

Feels that anything coming near him will hurt him, for he is sore and tender.

- **Rhododendron:** For Shoulder Pains Worse during a **Thunderstorm.**

G.H.G. Jahr, in his Forty years practice has given special emphasis on:
Rhus. Tox., Belladonna, Calcarea, Causticum, Lycopodium, Thuja, Merc., Puls., Bryonia for patients suffering from Shoulder related ailments.

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• https://orthoinfo.aaos.org/en/diseases--conditions/frozen-shoulder/
Contributed and/or Updated by- George S. Athwal, MD and Benjamin Widmer, MD
Peer-Reviewed by- Stuart J. Fischer, MD and J. Michael Wiater, MD
• Adhesive Capsulitis- A Treatment Approach

ISSN PRINT 2319 1775 Online 2320 7876
 UGC CARE Listed (Group -I) Journal Volume 11, Iss 02, 2022

Hannafin, Jo A. MD, PhD*; Chiaia, Theresa A. PT**
Editor(s): Griffin, Letha Y. MD, PhD; Garrick, James G. MD, PhD

- Homeopathic Remedies for Frozen Shoulder Treatment, By Dr. Vikas Sharma MD https://www.drhomeo.com/joint/homeopathic-remedies-for-frozen-shoulder-treatment/