Adhesive capsulitis and its homoeopathic management

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Abstract
The shoulder is a unique anatomical structure with an extraordinary range of motion that allows us to perform wide variety of movements with great ease. A loss of mobility of the glenohumeral joint causes immense discomfort. Adhesive capsulitis is a poorly understood musculoskeletal condition related with the glenohumeral articulation that has a disabling capability. This review discusses the etiology, pathology, clinical manifestations and the role of homoeopathic medicines in the management of this condition that causes significant morbidity.

Keywords: Adhesive capsulitis, homoeopathic medicines, glenohumeral articulation, frozen shoulder syndrome

Introduction
Adhesive capsulitis also known as frozen shoulder syndrome is an insidious painful condition of the shoulder persisting more than 3 months. This inflammatory condition that causes fibrosis of the glenohumeral joint capsule is accompanied by gradually progressive stiffness and significant restriction of range of motion, typically external rotation. It is characterized by a gradual, painful loss of shoulder motion due to affections related with the glenohumeral articulation. Adhesive capsulitis most commonly affects women between the ages of 40 and 60. Systemic conditions, such as obesity, thyroid dysfunction, cardiac disease, dupuytren contracture, breast cancer treatment, and neurologic disorders, increase the risk for developing adhesive capsulitis. Incidence in diabetics is 10-35 percent. Diabetic patients are 5 times more likely to develop adhesive capsulitis compared with non-diabetic controls.

Patients suffering from early adhesive capsulitis usually present with a sudden onset of unilateral anterior shoulder pain. The typical symptoms comprise passive and active range of motion restriction, first affecting external rotation and later abduction of the shoulder. In general, depending on the stage and severity, it can interfere with activities of daily living, work, and leisure activities. Functional impairments caused by frozen shoulder consist of limited reaching, particularly during overhead (hanging clothes) or to-the-side (fasten one’s seat belt) activities. Patients also suffer from restricted shoulder rotations, resulting in difficulties in personal hygiene, clothing and brushing their hair. Another common concomitant condition with frozen shoulder is neck pain, mostly derived from overuse of cervical muscles to compensate the loss of shoulder motion.

Anatomy related with glenohumeral articulation
The glenohumeral joint is a synovial multiaxial spheroidal joint between the roughly hemispherical head of the humerus and the shallow glenoid fossa of the scapula. It is the most mobile joint in the body and the most frequently dislocated. The shoulder is capable of any combination of swing and spin over a range far wider than that of any other joint in the body. Although the majority of the movement of the shoulder occurs at the glenohumeral joint, the scapulothoracic articulation contributes to overall shoulder motion in all directions, including lateral rotation.

The humeral head is held to the concave glenoid fossa by the compressive action of the rotator cuff muscles. The rotator cuff muscles are attached to the proximal humerus through a musculotendinous envelope, the deep surface of which fuses with lateral part of the articular fibrous capsule. The synovial membrane lines the capsule and covers parts of the anatomical neck. Deltoid muscle acts with the other elements of the rotator cuff according to the position of the arm in space, to maintain rotation, flexion and extension of the arm. It is important to consider the synergetic relation between the rotator cuff and deltoid as a
continuum in which the rotator cuff muscles act to provide a stable base on which deltoid can work effectively, whatever the position of the arm. During the initial stages of abduction, the entire rotator cuff counteracts the strong upward component of the pull of deltoid, which would otherwise cause the humeral head to slide up the glenoid surface; the additive turning moments exerted by the combined deltoid and supraspinatus force-couple may then abduct the arm.

The ligaments associated with the glenohumeral joint are the glenohumeral (superior, middle and inferior), coracohumeral and transverse humeral. The capsule, ligaments and labrum contain the deep afferent innervation of the glenohumeral joint and therefore contribute to stability of the joint through facilitation of the rotator cuff activity within the normal range of human shoulder motion. Many bursae also adjoin the shoulder joint. The humeral head is then contained in a spherical space bounded medially by the glenoid fossa and elsewhere by the deep surface of the fibrous capsule, a form of Osseo fibrous acetabulum. The walls of this ‘acetabulum’ (i.e. the rotator cuff muscles and tendons) are contained within a roughly spherical space bounded by the coracoid anteriorly; the coraco-acromial ligament anterosuperiorly; the acromion and spine of the scapula posteriorly, posterosuperiorly and posterolaterally; and the deep surface of deltoid anterolaterally and laterally. This arrangement creates two gliding planes, one internal (the glenohumeral articular gliding plane) and one external (the sub coracoid–sub acromial–sub deltoid plane); the latter is continuous with the plane under the scapula (the scapulothoracic gliding plane). Gliding is facilitated by the synovial lined cavities of the glenohumeral joint and the sub coracoid, sub acromial and sub deltoid bursae, which are nearly always contiguous [1]. Infection, inflammation and injury commonly cause adhesions and fibrosis with subsequent contracture in these planes; restriction of motion follows, specific to the site and extent of adhesion. The surfaces of both gliding planes are extensive and fibrosis is consequently very restricting leading to the condition known as adhesive capsulitis [1].

**Definition**
The American academy of orthopaedic surgeons defines this condition as: "a condition of varying severity characterized by the gradual development of global limitation of active and passive shoulder motion where radiographic findings other than osteopenia are absent [16].

**Etiology**
1. **Primary adhesive capsulitis**: insidious and idiopathic
2. **Secondary adhesive capsulitis**
   - Problems directly related to shoulder joint - tendonitis of rotator cuff, bicipital tendinitis, fractures and dislocations around the shoulder.
   - Problems not directly related to shoulder joint - diabetes, cervical spine disease, Parkinson’s disease, hyperthyroidism, hypothyroidism, ischemic heart disease, reflex sympathetic dystrophy. Most patients have undergone shoulder immobilization for prolonged period before developing adhesive capsulitis [7].

**Pathology**
During abduction, and repeated overhead activities of the shoulder, long head of biceps and rotator cuff undergo repeated strain. This results in inflammation, fibrosis and consequent thickening of the shoulder capsule, which results in loss of movements. If the movements are continued, then the fibrosis gradually breaks, movements return but never come back to normal. Prolonged activity causes small scapular and biceps muscles to waste faster, load on joint increases and degenerative changes sets in. Capsule is fibrosed and shoulder movements are decreased [3]. Adhesive fibrosis and scarring between the inflamed joint capsule of the glenohumeral joint, rotator cuff, subacromial bursa, and deltoid usually cause adhesive capsulitis.

**Clinical presentation**
- Progressively increasing pain in the shoulder
- Stiffness in the shoulder joint and restriction of all movements particularly external rotation, abduction and medial rotation
- Difficulty abducting arm-arm can only be abducted up to 45 degrees by elevating and rotating the scapula
- Contribution of the glenohumeral joint is reduced, the patient shows altered scapulo-humeral rhythm due to excessive use of scapular motion while performing overhead flexion and abduction [2].

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<th>Stage</th>
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| Stage 1 freezing/painful Stage | Up to 9 months | - severe pain  
- restricted active & passive range of motion  
- acute synovitis of glenohumeral joint |
| Stage 2 Frozen/transitional stage | 4 months - 20 months | - pain gradually decreases and the patient complains of stiff shoulder  
- diminished range of motion with external shoulder rotation being the most limited, followed closely by shoulder flexion, and internal rotation  
- use of the arm may be limited causing muscular disuse |
| Stage 3 Thawing stage | 5 months- 26 months | - gradual return of shoulder mobility  
- range of motion begins to improve but never returns to normal |

**Diagnosis**
The physical examination is marked by the loss of both passive and active range of motion. This motion may also be painful as the capsule reaches its stretching point. A screening radiograph of the shoulder is imperative to diagnose adhesive capsulitis. This rules out other possible diagnosis of loss of range of motion that includes osteoarthritis, or chronic anterior or posterior dislocation. In a few cases, ‘sclerosis’ may be seen on the outer edge of greater tuberosity (Golding’s sign) [3].

**Homoeopathic management**
The use of homoeopathic medicine requires skilful observation of specific characteristics feature of case of disease, to resolve it within the shortest period of time. While dealing with acute as well as chronic cases, requires
focus attention of homeopathic physician on characteristic features of the case. Homeopathic medicines are selected after a full individualizing examination and case-analysis, which includes the medical history of the patient and physical examination. The medicines given below indicate their therapeutic affinity in cases of adhesive capsulitis.

**Bryonia**
Rheumatic swelling of the right shoulder and upper arm, with stitches. Tractive pains in the joints of the shoulders and of the arms, with tension, shootings, and shining red swelling. Tension, drawing pains, acute pulling and shootings, ESP. In the limbs, and chiefly during movement, with insupportable pains on being touched, sweat of the part affected, and trembling of that part when the pains diminish. Stiffness and shootings in the joints, on being touched and when moved[8].

**Calcarea phosphorica**
Stiffness and pain, with cold, numb feeling, worse any change of weather. Pains in joints and bones. Numbness and crawling of affected part are characteristic sensations. Better, in summer; warm, dry atmosphere[13].

**Causticum**
Pains in the arms at night. Drawing pains and acute pulling, in the arms and hands. Convulsive movements and shocks in the arms. Pressure on the shoulders. Great sensibility to currents of air, and to cold. Pains in the shoulder are worse in the morning. The patient may experience great discomfort and difficulty in moving the shoulder. There is a constant feeling of pressure and heaviness on shoulders[12]. Pain which is dull, aching in character is present in the shoulder usually getting worse on motion.

**Chelidonium majus**
Pain in right shoulder. Inability to use right arm and forearm with freedom, sometimes attended with tearing pain. Drawing in nape and occiput. Stiff-neck, head drawn to left. Stitches beneath right scapula (hindering motion of arm), fixed pain under inner and lower angle of right scapula. Violent pains at lower angle of left scapula. Least touch anywhere is exceedingly painful; limbs feel heavy, stiff, and lame; flabby; trembling[10].

**Colchicum**
Stitches in the right shoulder. Painful lameness in the arms, which makes it impossible to hold the lightest thing. Shooting tension between the shoulder-blades. Paralytic pain in the arms. Aggravation of the symptoms from the commencement of the night till morning. Starting, shootings in the muscles, and in the periosteum of the limbs, ESP. In cold weather[12].

**Ferrum metallicum**
Rheumatic pains of upper limbs, especially shoulders <rest, midnight, cold, > slow motion, warmth. Shooting and tearing pain in the joint of the shoulder, and in the arm. Paralytic weakness, and heaviness. Cracking in the shoulder-joint. Nightly tearing and stinging with uneasiness in the arms. Best suited to young weakly persons, anemic and chlorotic, with pseudo-plethora, who flush easily, have cold extremities and are worse after any active effort. Oversensitive to noise, especially to rustling of paper[13].

**Ferrum phosphoricum**
Rheumatic pain in shoulder; pains extend to chest and wrist. Pain of right shoulder and upper limb, > gentle motion. Worse, at night and 4 to 6 pm; touch, jar, motion, right side. Better, cold applications. Violent tearing pain right shoulder and upper arm > from violent motion of arm, so that patient hardly kept it still at all. Acute rheumatism of right deltoid, unable to wear cloak. Right shoulder-joint red, swollen, very sensitive[8].

**Guaiacum officinale**
Rheumatic pain in shoulders, arms and hands. Tearing and shooting in the shoulder-blades, and in the forearms. Sharp stitches in the top of right shoulder. The pains are provoked by the least movement, and are accompanied by heat in the parts affected. Immovable stiffness of the contracted limbs[12]. Frequent inclination to yawn, and to stretch the limbs, proceeding from a general sensation of uneasiness. The majority of symptoms show themselves, when sitting, as well as in the morning after rising, or in the evening before lying down.

**Kalmia latifolia**
Pain in shoulders. Deltoid rheumatism, esp. Right. Stitches in lower part of left scapula. Paroxysmal pains in right arm and left arm < chill exposure and wind. Pains affect a large part of a limb, or several joints, and pass through quickly. Weakness, numbness, prickling, and sense of coldness in limbs[14].

**Ledum palustre**
Tearing and pressive pulling in arms. Lancinating pains in shoulder, on raising or moving arms. Aching pain in joints of shoulder, and of elbow, < by movement. Tearing or shooting, pulsative and paralytic pains in joints, < by movement. Sufferings are <, or come on, after getting warm in bed, compelling the patient to get out of bed, which affords them relief[12].

**Lycopodium**
Tearings and shootings in the joints of shoulder. Rheumatic tension in right shoulder-joint. Pain in bones of arms at night. Weakness of arms when at work. Difficulty in moving arms as if rheumatism were creeping on. Nocturnal aching pains, in the arms. Drawing pain in arms. Jerking in shoulders and arms, paralytic weakness of arms[8].

**Phytolacca decandra**
Shooting in right shoulder-joint with stiffness and paralysis. Rheumatism of left shoulder (ESP. In syphilitics); pains fly like electric shocks from one part to another; < night and damp weather. Pains at attachment of deltoid. Weakness and aching in right humerus, < motion and extension. Dull aching and excessive tenderness, as from a bruise, in outer muscle of right arm. Ailments exposure to cold and damp weather[11].

**Rhus toxicodendron**
Tearing and burning sensation in shoulder, with paralysis of arm, ESP. During the cold season, during repose, and in heat of bed. Coldness, paralysis, and insensibility of arm. Right arm weak. Swelling, stiffness, and paralyzed sensations in joints, from sprains, over-lifting, or over-stretching. Lameness, stiffness, and pain on first moving
after rest, or on getting up in morning; > by constant motion. Rheumatic tension, drawing, tearing in limbs, during rest. Violent stitches in right upper arm from without. Jerks, shootings, and tearing in arms. Tearing between shoulders, drawing together from both sides. < On beginning of motion, and get > from continued motion [9].

**Ruta graveolens**
Wrenching pain in the shoulder-joint, ESP. When permitting arms to hang down or when resting on them. Shocks in arms as if in bones. Dull tearing in bones of the arm, pressive, spasmatic tearing, and drawings in the limbs. Drawing in nape of neck and in the shoulder-blades. Pressure on inside of r. Scapula. Pain as if bruised in the outer parts and in the bones. Sensation of soreness of the parts on which one lies [10]. Pressive, spasmatic tearing, and drawings in the limbs. < From lying on painful side.

**Sanguinaria canadensis**
Rheumatic pain in limbs, ESP. In shoulders, arms, and thighs, and < at night. Burning in hands and feet < night. Rheumatic pain in right arm and shoulder, < at night in bed; cannot raise arm; motion (turning in bed) much <. Pain in top of right shoulder. Pain in right deltoid. Right arm hung helpless. Great debility and weakness in limbs (ESP. In morning on waking), whilst walking in the open air. Rheumatic pain in nape, shoulders, and arms. Pain in right side of neck as if strained [12].

**Sulphur**
Pressure on shoulders as from a weight. Rheumatic pain in shoulders, esp. Left. Stitches extending from shoulder into chest on motion. Stitching beneath right axilla. Jerking of shoulders, hands, and fingers. Jerking, sharp pains, tearing, and shootings in joints and muscles of arms, hands, and fingers, and also in shoulders, chiefly at night in bed. Nocturnal cramps in arms [14]. Swelling of arms, sometimes with heat, hardness, and lancinating or tense pains.

**Syphilinum**
Rheumatism of shoulder-joint or at insertion of deltoid, < from raising arm laterally. Can only raise arms to a right angle with axilla; trying to force them higher causes muscles to suddenly become paralysed, lameness and pain of arm on motion, < on raising arm up in front as if reaching; pain located about insertion of deltoid in upper third of humerus, not painful to pressure [12].

**Thuja**
Throbbing in shoulder-joint. Sticking in shoulders. Involuntary jerking of arm during day. Wrenching pain in shoulder and arm, with cracking. Digging, drawing in arms, as if in bones or periosteum. Sensation of coldness in arms at night. Lancinations in arms and joints. Tearing pain along right arm compelling him to keep it flexed. Frozen limbs [8]. Pain with numb feeling; < in warmth and on moving; > from cold and after sweating.

**References**