



Traditional Approaches to Managing Adhesive Capsulitis: A Comprehensive Review

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Abstract



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Adhesive Capsulitis results in progressive painful restriction in range of movement and can reduce function and quality of life. Adhesive Capsulitis commonly known as Frozen shoulder Syndrome and also called pericapsulitis, peri-arthritis, adherent bursitis, shoulder peri-arthritis, scapulo-humeral peri-arthritis. In Unani literature the Adhesive Capsulitis are met under the caption of Wajaul Mafasil & Tahajjire Mafasil. Waja-ul-Mafasil is a painful or inflammatory condition affecting joints, their surrounding muscle and ligaments of shoulder. Zakaria Razi described the disease in the eleventh volume of his book Al-HAWI cause of Waja-ul-Mafasil is formation of abnormal chyme (Rutubat-e-Mukhatia) due to Nuqs in (defect) Hazm-e-Kabidi and Hazm-e-Urooqi. Akbar Arzani in Tibb-e-Akbar have added that accumulation of Galeez-Riyah in surrounding structure. It can affect almost all joints of the body and they named after the joint involved as Waja ul warik, Waja uz zahr, Waja ur rakba, Waja ul waqab, Waja ul khasera. In Unani medicine, Waja'ul- Mafasil is managed through Ilaj Bit Tadbeer (Regimenal therapy), Ilaj Bid Dawa (Pharmacotherapy), or Ilaj Bil Yad (Surgery). Ilaj Bit Tadbeer is one mode of treatment in which various regimens like Takmeed Dalak, Fasd, Riyazat, Nutool, zimad, and Hijama etc are used as a part of treatment so as to offer the patients relief. Pharmacological treatment options include single (Suranjan, Bozidan, Asgandh, etc.) or compound (Habbe Muquill, Majoon Chobchini, Habbe Suranjan, Habbe Asgandh, etc.) medications. This review paper discussed concept of adhesive capsulitis & safe or alternative method of treatment which given by traditional philosophers in classical text which was less harmful in comparison to modern medicine.

Keywords: Adhesive capasulitis, Frozen shoulder syndrome, wajaul mafasil, Unani medicine.

1. Introduction:

Adhesive capsulitis (also termed Frozen shoulder, painful stiff shoulder or peri-arthritis) is a common condition characterized by sudden onset of discomfort, gradual restriction of movement of the shoulder and disability that restricts activities of daily living work^{1,2} Adhesive Capsulitis describes a pathological process in which the body forms excessive scar tissue or adhesions across the glenohumeral joint, leading to stiffness, pain, and dysfunction^{3,4} Adhesive Capsulitis can be described as either primary (idiopathic), if the etiology is unknown, or secondary, when it can be attributed to another cause. The incidence of adhesive capsulitis is approximately 2%–5% in the general population and 10%–20% in diabetic population. It is rare in children and more common in women especially over 40 years of age.^{5,6}

1.1 Risk factors

Adhesive capsulitis has been linked to a range of co-morbidities, including cardiovascular disease, Parkinson disease, stroke, hyper- thyroidism and, in particular,

diabetes mellitus, where the incidence of Adhesive Capsulitis can reach close to 60%^{7,8,14}. Adhesive capsulitis has also been linked to hypothyroidism⁹, hyperlipidaemia¹⁰] and autoimmune diseases¹¹. These co-morbidities are found in more than 80% of individuals diagnosed with Adhesive capsulitis, with over 35% of affected individuals having more than three associated conditions¹² Other risk factors associated with Adhesive Capsulitis are smoking, obesity and low levels of physical activity¹³

1.2 Clinical features:

Symptoms may start gradually and resolve within one or two years. People may experience: Pain in the shoulder Muscles: decreased range of motion of shoulder or muscle spasms also common. Frozen shoulder can be described as either primary (idiopathic), if the etiology is unknown, or secondary, when it can be attributed to another cause¹⁴

1.3 Pathophysiology and Natural History:

The pathophysiology of frozen shoulder is poorly understood. Analysis of surgical specimens suggests

that capsular hyperplasia and fibrosis have a role. The presence of cytokines suggests a possible autoimmune process, but the relationship is not well established.¹⁵

The normal course of a frozen shoulder has been described as having four sequential phases:

Stage I (Inflammatory stage): Duration of symptoms of this stage lasts from 0 to 3 months. The pain often starts gradually and builds up. It may be felt on the outside of the upper arm and can extend down to the elbow and even into the forearm. It can be present at rest and is worse on movements of the arm. Sleep is often affected, as lying on it is painful or impossible. During this time movements of the shoulder begin to be reduced.^{16,17}

Stage II (Freezing stage): The freezing phase is a reactive phase. For patients with an acutely and globally painful shoulder, physical therapy and stretching can cause additional discomfort and stiffening. Resting from painful activities and analgesics may help with pain control. The ball and socket joint becomes increasingly stiff, particularly on twisting movements such as trying to put hand behind back or head. These movements remain tight even when try to move the shoulder with 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 patient may become more aware of this movement.^{18,19}

Stage III (Frozen stage): Pain gradually subsides and is only present at the extreme range of movement. Gross reduction of movement is present with almost no external rotation possible.²⁰

Stage IV (Thawing stage): The final stage is the gradual regaining of the motion or 'thawing' rate of which is variable in weeks or months. Without specific treatment shoulder movement is regained gradually.^{21,22}

1.4 Diagnosis:

The diagnosis of adhesive capsulitis is made from the history and physical examination. There is loss of both active and passive range of motion, and frequently there is pain on strength testing²⁴

1.5 Clinical assessment:

Loss of passive and active ROM is inherently associated with FS but criteria are conflicting. Thresholds range from a reduction of 30% in two of three unspecified directions²³ to 50% loss of external rotation compared to the contralateral side²⁴ However, there is a lack of reliability in differentiating movement loss from capsule pathology resulting from other potentially more serious pathologies or from self-limiting movement owing to kinesiophobia and protective pain guarding^{25,26,28}

1.6 Imaging:

The use of advanced imaging modalities such as ultrasonography and MRI to diagnose FS has been proposed. Findings such as axillary capsule thickening and/or obliteration of the axillary recess, coracohumeral ligament and rotator interval thickening, and/or hypervascularity are considered indicative of Adhesive

Capsulitis pathology if the imaging results match the clinical presentation^{29,30} X-rays should be taken to eliminate other diagnoses with similar. The most significant finding on MRI in patients with frozen shoulder is thickening of the inferior joint capsule (ligaments)²³.

2. Management:

2.1 PHARMACOLOGICAL THERAPY: Pharmacological therapy, including non-steroidal anti-inflammatory drugs (NSAIDs) and systemic or intra-articular corticosteroids, provides symptomatic management and serves as an adjunct to physical therapy. Both COX-1 and COX-2 expressions are elevated in capsular and bursal tissues of patients with adhesive capsulitis, and these anti-inflammatory agents target synovitis as the source of pain. Pain management is a key feature to allow patients to tolerate physical therapy to improve ROM. There have been few studies evaluating the effectiveness of NSAIDs for the treatment of adhesive capsulitis. NSAIDs are generally recommended for short-term pain relief during the early inflammatory stages of adhesive capsulitis.[31] Intra-articular CSIs are recommended in the inflammatory or early stages of FS, before the emergence of capsular contraction, to provide pain relief and reduce inflammation^{32,33}

2.2 Hydrodilation (arthrographic distension): This treatment involves the local anaesthetic injection into the capsule at a high pressure enough to distend and stretch the capsule of joint. This procedure does not need to be performed in the operation theatre but is often associated with poor tolerance due to the painful nature of the distension.³⁴

2.3 Physiotherapy: Physiotherapy provides accelerated pain relief and/or improvement in ROM³⁵, compared with no treatment. However, these improvements are mostly short-term, without a demonstrated reduction in disease duration. It is suggested that the level of irritability of the patient be used to define the appropriate intensity of the chosen management strategy.^{36,37} Several mobilization and stretching techniques (for example, four-direction shoulder stretching and inferior capsular stretching) are effective in early and late stages of FS for pain relief^{38,39} Other physiotherapy modalities, such as cold, heat, electrical modalities such as transcutaneous nerve stimulation, pulsed electromagnetic field therapy and low-level laser therapy, have been suggested to have positive effects on pain in patients with FS. However, as these modalities are typically applied as adjunctive interventions, the individual effect of each technique on the natural course of FS is difficult to define⁴⁰.

2.4 Surgical Treatment:

The aim of surgical approaches in FS is to release the fibrous, thickened and tightened glenohumeral joint capsule and associated contracted ligaments to improve ROM of the glenohumeral joint, and to decrease pain. The aim of Manipulation under anesthesia is to stretch the shoulder joint capsule and thereby improve Range of motion. In an anaesthetized shoulder, the procedure involves applying a passive stretch to the glenohumeral

joint, in all shoulder Range of motion directions. There are conflicting opinions as to the ideal time to perform Manipulation under anesthesia in patients with idiopathic FS, from as soon as FS is diagnosed^{41,42}

2.5 Arthroscopic Capsular Release: Arthroscopic Capsular Release involves cutting and removing the thickened, swollen, inflamed abnormal capsule under direct arthroscopic control. Arthroscopic Capsular Release is a safe and effective modality in treating Adhesive Capsulitis^{43,44} and may offer distinct advantages when compared with other methods of treatment. For example, direct visualization of the affected joint allows diagnostic confirmation and enables additional pathology to be ruled out. The effectiveness of Arthroscopic Capsular Release has been demonstrated in multiple studies, with a dramatic reduction in pain scores, increased ROM as well as overall increased shoulder function⁴⁵

Adhesive Capsulitis can be literally termed in Arabic as *Ilthabe La'siq ul Mahsoor*, and this clinical condition is commonly known as Frozen Shoulder Syndrome (*Waja ul Katif/ Mutalazima Munjamid al Katif*). It is a restricted movement along with painful shoulder joint. In Unani literature the symptoms of Adhesive Capsulitis are met under the caption of *Wajaul Mafasil*.^{46,47,48} *Waja'ul Mafāṣil* is a broad term which comprises of *Waja'* and *Mafāṣil*. *Waja'* stands for pain and *Mafāṣil* for joints. *Waja'ul Mafāṣil* stands for the pain in joints. Frozen Shoulder, a type of joint pain, is translated as *Waja'ul Katif* in Unani medicine. It may be described according to the available literature of *Waja'ul Mafāṣil*⁴⁹

According to Unani medical terminological anthology, *Waja-ul-Mafasil* is a type of arthralgia which involves several joints. As per involvement of humours, it is of four types i.e. *Damvi*, *Balghami*, *Safravi* and *Saudavi*. It is again divided into acute and chronic types according to severity of clinical manifestation. When two humours are involved, it is known as *Waja-ul-Mafasil Murakkab*⁴⁸

3. Aetiology (Asbab)

In Unani system of medicine most of the renowned Unani physicians described the causes of *Waja-ul katif* under the caption of *Waja-ul-Mafasil*. According to *Ibne Sina*, *waja ul katif* causes due to *Fasad in Mizaj* (*Sue Mizaj*). This *Fasad in Mizaj* is due to surplus *Burudat* and accumulation of *Kham Balgham* (raw phlegm). *Zakaria Razi* described the disease in the eleventh volume of his book *Al-Hawi*. According to him, the first and foremost cause of *Waja-ul-Mafasil* is formation of abnormal chyme (*Rutubat-e-Mukhatia*) due to *Nuqs* (defect) in *Hazm-e-Kabidi* and *Hazm-e-Urooqi*, resulting in the production of abnormal humours, particularly abnormal phlegm (*Ghair-tabyee-Balgham*), which then gets accumulated in the joints and surrounding structures, causing swelling, tenderness and pain. He stated that sometimes weakness or extensiveness of joint structures ko either congenitally or due to some other disease, gives the seat for the accumulation of the abnormal humours in general, or vitiated phlegm in particular site. *Jurjani* in *Zakheera Khawarzaam Shahi* and *Akbar Arzani* in *Tibb-e-Akbar* have added that

accumulation and piercing of *Galeez- Riyah* in surrounding structure also produces *Waja ul katif*.^{50,51}

4. Alamaat (Clinical features)

In Unani systems of medicine *Alamaat* of *Waja-ul katif* are Described on the basis of causative factors such as.

If *waja ul katif* is due to *Madda Balgham Kham*, the *Alamat* are

- Feeling of Pain with heaviness in progressive manner
- Eating of cold temperamental diets

If *waja ul katif* is due to *Sue Mizaj Barid Sada*

- Feeling of coldness
- Pain without heaviness
- Pain relieved by temperamentally hot regimens

If *waja ul katif* is due to *ghaliz Riyah*,

- *Waja Tamaddudi* (pain with tension)
- Feeling of slight heaviness
- Pain aggravates by taking those foods which produce flatulence
- Pain relieves by hot temperamental diets and oils^{46,48,51,52,53,54}

5. Usool-e-Ilaj (Line of Management)

In Unani system of medicine Eminent Unani physicians described the causes and Treatment of *Waja-ul- katif* under the caption of *Waja-ul- Mafasil*.

- *Izala-e-Sabab* (Removal of cause)
- *Istifragh* (evacuation of morbid material)
- *Tadeel Mizaj* (correction in temperament)
- *Mussakin alam*
- *Murrakhiyat*
- *Ghiza* (Diet) hot temperamental diet
- *Taqleel Ghiza* prevent of diet which produces flatulence and abnormal Humour
- *Munzijat* for *Tahleel Madda*
- *Mulliyinat* and *Mushilat* for evacuation of morbid matter
- *Mudir-e-baul* and *Mudir-e-Haiz* drugs
- *Ma-ul-usoole*: for *Nuzj* of *Kham Humour*
- Use of *Tiryaqiyat*
- *Ilaj Bit Tadbeer* (Regimenal modalities)
- *Fasd*(venesection)
- *Hijamah*(cupping)
- *Irsal-e-Alaq* (leech therapy)
- *Dalak*(massage)

- Hammam (medicated bath)
- Abzan (sitz bath)
- Takmeed (fomentation)
- Riyazat (exercise)
- Zimad (ointment)
- Nutool (irrigation)
- Qai (emesis)
- Idrar (diuresis),^{46-48,54-57}

6. ILAJ:

Eminent Unani Physician describes the treatment of waja ul katif under the caption of waja ul mafasil. Ilaj is mainly based on pharmacological treatment, non-pharmacological, and Ilaj-bit-Tadbeer

7. Pharmacological treatment (Ilaj Bit Dawa):

Ma-ul-Usool: Beikh-e-Badiyan, Beikh-e-Karafs, Beikh-e-Azkhar, Anisoon, Tukhm-e-Suddab, Nankhwan with Rogan baid-anjeer.

1 Joshanda Munjiz-e-Balgham: Post beikh-e-kasni, Post beikh-e-badiyan, Suranjan, Mako, Badranjboya, Bisfaij, Izkhar, Anjeer, Maweez munaqqa with Gulqand.

2 Mushilat: Mufrad: Halaila, Balaila, Aamla, Suranjan, Bozidan.

3 Murakkab: Habb-e-Ayarij, Habb-e-Suranjan, Habb-e-Mantin, Habb-e-Sakbinaj.

4 Compound use for Tadeel-e-Mizaj: Sanjarniya, Tiryagarbaa, Tiryaq kabeer, Masroodetoos, Majoon chobchini, Arq chochini, Majoon falasfa, Majoon masihi, Habb-e-azraqi.

5 Joshanda Mudir Haiz: Tukhm Karafs, Tukhm Methi, Tukhm Khyarain, Badiyaan, Anisoon, Tukhm Shibt.

6 Musakkin-e-Alam and Muqawwi Asab (Nervine tonic): Dar-e-filfil, Anisoon, Jadwaar, Fawa, Habbul-gar, Fawania, Hilteet, Jaowsheer, Zafran, Zarawand, Hulba, Tukm-e-karafs, Habb-ul-rshad, Ajwain, Darchini, Zanjbeel, Ushq, Sakbeenaj, Anzroot, Hilliyoon, Suranjan, Sibr^{48,49,51,52,55}

8. Non-pharmacological treatment

Ilaj-bil-Ghiza (Dieto-therapy)

- In Tibb-e-Akbar, Arzani stated Parindo ka Ghosht and Garm Masaleh is should be used in case of Sue Mijaz Barid Sada.
- Jurjani stated that Aab-e-Nakhud (black gram) is the best with Waj and Shahed.
- Ibne Sina advised to take an easily digestible diet (Ghiza-e-Jaiyyad) in Waja-ul-katif
- According to Razi, use of Pudina is useful in Waja-ul-katif which is caused due to Galeez Riyah.^{48,49,51,52,55}

9. Ilaj Bit Tadbeer.

9.1 Hijamat: Razi indicated Hijamat-e-Nariya and

Hijamat-bila-Shart should be very effective in Waja-ul-katif. Ibne Sina advice Hijamat-bish-Shart as well as Hijamat-e-Nariya in waja ul katif^{48,49} Various clinical studies showed that dry cupping and wet cupping both were effective in the management of pain, stiffness, swelling and muscle weakness due to Adhesive Capsulitis. Statistically significant improvement in pain, morning stiffness, joint swelling, restriction of movements, tenderness and muscular weakness after dry cupping in Adhesive Capsulitis.⁵⁸

9.2 Nutool (irrigation): Nutool should be done with Joshanda Munjiz Balgham.⁴⁶ Ibne Sina mentioned that Nutool is the best treatment for resolution of inflammation or correction of altered body temperament and for providing strength to the shoulder in Adhesive capsulitis, to relieve the pain⁵⁵

9.3 Fasd (venesection): Eminent unani Physicians stated that in condition of Imtela-e-Rag, for acute relief in pain Fasd of Basaleeq, Nabiz and Safin veins should be done^{48,53,55}

9.4 Irsal-e-Alaq (Leech Therapy): It is commonly practiced procedure in regimnal therapy used for local evacuation of morbid humours using medicinal leeches to treat various disorders including waja-ul-mafasil. The effectiveness of this therapy may also be credited to the Mussakin (sedative) and Muhallil (anti-inflammatory) actions of saliva of leeches. Their modes of action have been identified such as analgesic, anti-inflammatory, platelet inhibitory, anticoagulant, and thrombin regulatory functions, as well as extracellular matrix degradative^{58,59}

9.5 Dalk (Massage): Renowned Unani physicians included dalk in the category of Riyazat, on the basis of action. Dalk dissolves and removes Akhlat-e-fasida (morbid humours), liquefies the Rutubat-e-badan (body fluids), produces heat (Latif Hararat) in the body which removes baroodat (coldness) and dissolve reehi-mawad (gas) and strengthens the muscles, ligaments and tendons. It is helpful in evacuation and diversion of adhered viscous morbid matter accumulated inside the joints that alleviate the pain, reduces swelling, excretes waste product (fuzlat-e-badaniya) that is formed at the end stage of digestion (hazm-e-akhir)^{59,60,61}

9.6 Usefull Roghaniyat(oils): Roghan-e-Dhatura,, Roghan-e-Suranjan, Roghan-e-Baboona, Roghan-e-Surkh, Roghan-e-Malkangni, Roghan-e-Gule Aak Roghan-e-Shibbat, Roghan-e-Kuchla, Roghan-e-Hina, Roghan-e-Zanjabeel, Roghan-e-Haft-e-Barg⁶²

9.7 Takmeed (Fomentation): Takmeed has a number of therapeutic effects such as pain alleviation, muscle spasms relaxation, improvement in circulation, reduction in inflammation in waja ul katif^{59,60}

9.8 Zimad (Medicated Paste): zimad has important use in regimental therapy and are used for therapeutic purposes such as inflammation, swelling, anaesthesia, dissolution and diversion of morbid materials from congested area of shoulder.^{48,49,55,58}

9.9 Tila (Liniments): is medicated oil or liquid used externally with slow massage of body parts that absorbs

medicine through skin. It is lesser in viscosity than lotion. Both zimad and tila has significant use in regimental therapy and are used for therapeutic purposes such as inflammation, swelling, sedation and anaesthesia, dissolution and diversion of morbid materials from congested area of shoulder 48,49,55,58

Conclusion:

A thoughtful literature survey on the concept, detailed classification, etiology and multidimensional traditional approach of adhesive capsulitis in the light of unani system of medicine reveals the fact that Unani researchers have succeeded in accurately managing this disease. The blind spot of this approach is medication reduction. disciplinary therapies ie; Irsale alaq, Fasd, Hijama, Dalk, Takmeed, zimad, Tila which seems to be a boon in the treatment of the condition because it is easy to perform, cost effective and at the same time free from side effects. On deep approaching, In unani adhesive capsulitis can be correlated with different types of Wajal-Mafasil based on predisposing factors, aggravating factors and clinical features described in classical Unani texts. This review discussed the concept of Adhesive Capsulitis and the safe or alternative treatment presented by traditional philosophers in a classical text, which was less harmful compared to modern medicine.

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