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Case Report

Therapeutic Efficacy of *Hijāma Dalkiyya* (Gliding Cupping) and Targeted Exercises in *Waja-i-Mafṣal-i-Katif* (Frozen Shoulder) Management: A Case Report

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Abstract

Background: Frozen shoulder (*Waja-i-Mafṣal-i-Katif*) is a painful condition that leads to stiffness and restricted movement of the shoulder joint. While conventional treatments often rely on medications, Unani regimenal therapy provides a non-invasive alternative for management.

Objective: This study aims to assess the effectiveness of *Hijāma Dalkiyya* (Gliding Cupping) combined with targeted shoulder exercises in improving pain, mobility, and functional ability in individuals with frozen shoulder.

Methods: A 67-year-old male diagnosed with right shoulder adhesive capsulitis underwent 21 gliding cupping sessions and structured exercises. Pain levels and shoulder mobility were evaluated using the Shoulder Pain and Disability Index (SPADI) and clinical diagnostic tests before and after treatment.

Results: The intervention resulted in a notable improvement in range of motion (ROM), a reduction in SPADI scores, and the negation of previously positive diagnostic tests. The combined effects of cupping therapy and exercise enhanced blood circulation, reduced inflammation, and restored flexibility, improving shoulder function.

Conclusion: Unani regimenal therapy, particularly gliding cupping with targeted exercises, shows promise as an effective, non-pharmacological approach for treating frozen shoulder. Further clinical studies are recommended to validate these findings and integrate this method into modern rehabilitation practices.

Keywords: Frozen shoulder, Unani therapy, *Hijāma Dalkiyya*, Gliding cupping, Shoulder rehabilitation

INTRODUCTION

Frozen shoulder (FS) is a condition marked by stiffness in the shoulder joint, which may develop with or without an identifiable cause.[1] It is a prevalent condition that leads to significant morbidity & has a reported prevalence between 2% and 5% in the general population, with various studies suggesting a range from 0.5% up to 10%.[2] Its peak incidence in between the ages of 40 and 60 and is rare outside these age groups and in manual workers. Despite being treated for over a century, its definition, diagnosis, underlying pathology, and the most effective treatments remain largely uncertain.[3]

Currently, several terms are used to describe frozen shoulder, including Adhesive capsulitis, Pericapsulitis, Periarthritis, Adherent bursitis, Obliterative bursitis, Shoulder periarthritis, Scapulohumeral periarthritis, Adherent subacromial bursitis, and Hypomobile syndrome.[4,5]

Adhesive capsulitis is a degenerative and inflammatory condition that affects the articular capsule and soft tissues of the shoulder.[6] Commonly known as frozen shoulder syndrome, it is characterized by restricted shoulder joint movement accompanied by pain, particularly at the extremes of motion.[7,8]

Periarthritis of the shoulder, another term for adhesive capsulitis, is a well-recognized condition that progresses through distinct phases, including intense pain, increasing stiffness, and a gradual return to full shoulder mobility. This progression typically spans several months.[9]

Periarthritis refers to inflammation around a joint and is considered a chronic inflammatory disorder affecting the shoulder and its surrounding soft tissues.[10] Obliterative bursitis, on the other hand, is marked by a progressively painful restriction of shoulder movement, particularly affecting external rotation.[11]

The term "frozen shoulder" was first introduced in French literature by Duplay in 1872, who referred to it as "periarthritis of the shoulder." The modern terms "frozen shoulder" and "adhesive capsulitis" were later coined by Codman in 1934 and Neviaser in 1945, respectively. Drs. Neviaser notably characterized the diagnosis of frozen shoulder as a "waste can" diagnosis, suggesting that it was frequently misapplied and misunderstood. While distinguishing between frozen shoulder and a generally stiff and painful shoulder, they emphasized the importance of accurate diagnosis, stating that proper identification is crucial for appropriate treatment. They also cautioned that not every patient experiencing shoulder pain and limited movement necessarily has adhesive capsulitis.[12]

ETIOLOGY

Adhesive capsulitis is classified into **primary and secondary types**.

- **Primary adhesive capsulitis** is idiopathic and develops gradually, leading to painful restriction in both active and passive shoulder movements.
- **Secondary adhesive capsulitis** presents similarly but has an identifiable cause.

Certain medical conditions, including Type 1 Diabetes (20%), Calcific tendinopathy, Autoimmune thyroid diseases, Parkinson's disease, neurological disorders, cardiac conditions, and autoimmune diseases, can increase the risk of developing adhesive capsulitis.[13]

PATHOLOGY

Frozen shoulder (FS) is primarily characterized by intense inflammation of the joint capsule, involving inflammatory mediators such as interleukins, cytokines, and growth factors, leading to excessive fibroblast activation and collagen disturbances. This results in fibrosis and thickening of the capsule, particularly around the rotator interval and anteroinferior capsule, along with thickened coracohumeral and glenohumeral ligaments, restricting shoulder movement.

Tissue analysis of FS shows a dense collagen matrix, an abundance of fibroblasts and contractile myofibroblasts, resembling Dupuytren's contracture, with fibrosis mainly affecting the anterior capsule. An early immune response, involving alarmins and glycosylation-induced collagen crosslinks, triggers disease progression. Increased vascular endothelial growth factor (VEGF) expression, especially in diabetics, along with nerve growth factor receptor activation and neo-angiogenesis, contributes to severe pain and stiffness. Overall, frozen shoulder begins as an inflammatory reaction with synovitis, eventually leading to fibrotic contracture of the joint capsule.[14]

PRESENTATION & PROGRESSION

By conducting a detailed history and thorough examination, physicians can identify key signs of frozen shoulder. The hallmark findings include pain and a global restriction of movement, with the most prominent limitation being in passive external rotation.[15]

Frozen shoulder often progresses in three stages: the freezing (painful), frozen (adhesive) and thawing phases as described in Table 1-[16]

Table 1: Stages of frozen shoulder

Stage	Duration	Characteristics
Freezing (Painful) Stage	**2–9 months**	Gradual onset of **severe shoulder pain**, worsening at **night**.
Frozen (Adhesive) Stage	**4–12 months**	Pain begins to **subside**, but there is a **progressive loss of movement** in **flexion, abduction, internal rotation, and external rotation**.
Thawing Stage	**5–26 months**	Gradual **return of range of motion**.

Diagnosis

Frozen shoulder is diagnosed through a thorough history and physical examination to rule out other causes of pain and restricted motion. It typically affects middle-aged individuals, causing sudden anterior shoulder pain near the biceps groove, often worsening at night. Active (AROM) and Passive Range of Motion (PROM) are significantly restricted, especially in abduction and external rotation, with a mechanical blockage at the end range. Tenderness over the coracoid process may be a key indicator.

Key Diagnostic Tests:

- **Shoulder Shrug Test:** Excessive scapular elevation due to restricted glenohumeral motion.
- **Coracoid Pain Test:** Pain on palpation of the coracoid process.
- **Hawkins-Kennedy Test:** Pain due to shoulder tightness.
- **Apley Stretch Test:** Limited reach behind the back, indicating restricted mobility.

Neurovascular exams are usually normal, and lab tests offer little diagnostic value. X-rays appear normal, while MRI or arthrography may be considered if rotator cuff pathology is suspected. However, recent studies suggest MRI findings may help in diagnosing and managing frozen shoulder.[12]

In Unani literature, the term ***Waja-i-Mafsal-i-Katif*** is used to describe frozen shoulder, which Unani scholars refer to as ***Tahajjur***, meaning "to become hard."[17] The term ***Waja'al-Mafasil*** is derived from two words: **"*Waja*"**, meaning pain, and **"*Mafasil*"**, meaning joint. It serves as a broad term encompassing various joint pain conditions, including ***Khāṣira*** (lower backache), ***Warik*** (hip joint), ***Aqib*** *(*heel), and ***Qatan***, among others.

When pain specifically affects the shoulder joint, it is termed ***Waja-i-Mafṣal-i-Katif***. Based on the involvement of different humors, it is classified into four types:

1. ***Damwī*** (sanguineous)
2. ***Balghamī*** (phlegmatic)
3. ***Ṣafrāwi*** (bilious)
4. ***Sawdāwī*** (melancholic)

Several etiological factors contribute to ***Waja-i-Mafṣal-i-Katif***, including:

1. ***Du'f-i-Uḍū*** (weakness of the affected shoulder)
2. ***Insibāb-i-Khilt*** (accumulation of humors—Balgham, Safra, Sawda, or Dam)
3. ***Burūdat-i-Mafasil*** (coldness of joints)
4. ***Midda*** (pus formation)
5. ***Nazla wa Zukām*** (cold and coryza)
6. ***Tukhma*** (indigestion)
7. **Sedentary lifestyle**
8. **Chronic diseases** [18]

The management of ***Waja-i-Mafsal-i-Katif*** includes **pharmacological** and **regimenal therapies** such as *Ḥijāma bi'l Sharṭ* (Wet cupping), *Ḥijāma bilā Sharṭ* (Dry cupping), *Ḥijāma Nāriyya* (fire cupping), *Ṭilā'* (Liniment), Dalk (Massage), *Naṭūl* (Irrigation) and *Riyāḍat* (Exercise). Medicated oils like Roghan Bābūna, Roghan Khardal, and Roghan-i-Gul are used for local application to relieve pain and stiffness. This study examines the effectiveness of **regimenal therapies** in treating frozen shoulder without pharmacological intervention. The treatment involved a combination of **Gliding cupping (Dalk with Ḥijāma bilā Sharṭ), and targeted exercises** to assess their collective impact on pain reduction and mobility improvement.

CASE REPORT

A 67-year-old male presented to the National Institute of Unani Medicine's OPD on 4th of Dec 2024, with unilateral shoulder pain and stiffness on the right side, experiencing severe restriction in both active and passive movements, particularly in upward elevation of the shoulder & reaching behind the back to touch opposite scapula. The pain is constant, worsens at night and in cold weather, and significantly limits daily activities.

History of Present Illness

- No history of trauma or physical injury. Gradual onset with progressive pain and stiffness, leading to severe movement restriction.
- The patient has a H/o Type 2 Diabetes Mellitus from the past 7 years and has been undergoing treatment with Metformin 500 mg and Gliclazide 80 mg.

General Physical Examination

- Vital Signs: Blood pressure 120/86 mmHg, pulse rate 98 beats/min.
- No signs of pallor, icterus, cyanosis, clubbing, or edema.
- Cardiovascular System: Normal heart sounds (S1, S2).
- Respiratory System: Clear chest, no added sounds.
- Central Nervous System: Normal consciousness, attention, orientation, memory recall, and speech.

Shoulder Joint Examination

- Left Shoulder: Normal.
- Right Shoulder:
  - Swelling: Absent.
  - Tenderness: Present.
  - Restriction of Movement (AROM/PROM in degrees):
    - Abduction 60 °/65°, Adduction 30°/35°,
    - Flexion 60^0/70°, Extension 35°/45°,
    - Internal rotation (only with adduction) 40°/45°, External rotation (only with adduction) 35°/40°.
  - Positive diagnostic tests including Shoulder Shrug Test, Coracoid Pain Test, Hawkins-Kennedy Test & Apley Stretch Test**.**

Radiological Findings

X-ray (Right Shoulder): Indicates capsular and bursa inflammation, suggestive of adhesive capsulitis.

Pathological & Biochemical Investigations

Hemoglobin (Hb): 12 g/dL

Fasting Blood Sugar (FBS): 160 mg/dL & Post Prandial (PPBS): 210 mg/dL

HbA1c: 8.2 %

METHODOLOGY

After obtaining the patient's assent & comprehensive evaluation, the patient received ***Hijāma Dalkiyya*** (Gliding/Massage cupping) for 21 consecutive days along with targeted shoulder exercise.

Intervention

Hijāma Muzliqa / Hijāma bilā Shart Mutaharrika/ Hijāma Dalkiyya (gliding cupping/moving cupping/massage cupping)[19]

Gliding cupping is a combination of two regimens —Dalk (massage) and *Ḥijāmah bilā Sharṭ* (dry cupping). For this intervention, Roghan-e-Haft Barg (Table 2) was used.

Step 1: Cup application

a. A small amount of massage oil (RHB) was applied to the treatment area.

b. The sterilized medium size cup was put on a selected site and slight negative pressure was applied with the help of a manual pump.

c. The pressure inside the cup was between one and a half pull by manual pump.

d. The cup was glided along the course of muscle fibers, i.e., from origin to insertion of the muscle. The gliding movement of the cup was repeated for 5 minutes for each area.

e. The whole procedure of gliding of the cup was done for 15 minutes, or until the treatment area turned reddish.

f. The first session of this type of cupping was of 5 minutes, and then the session was gradually prolonged up to 15 minutes.

Step 2: Monitoring of the patient

a. The patient was monitored for any discomfort or any adverse reactions.

b. The patient had experienced a warm, pulling or stretching sensation on the skin, but not pain.

Step 3: Removal of the cup.

Lift the valve to release the pressure and remove the cup.

Shoulder Exercises[20]

The exercises that were performed on the shoulders included **Pendulum stretching, Towel stretching, Finger Walk & Cross body Reach.**

1. Pendulum Stretching Exercise (Fig. 1) -

- Relax your shoulders and stand while slightly leaning forward.
- Let the affected arm hang down naturally.
- Gently swing the arm in small circles (about 1 foot in diameter).
- Perform 10 revolutions in each direction, once a day.
- As symptoms improve, gradually increase the circle size, but avoid forcing the movement.

2. Towel Stretching Exercise (Fig. 2) -

- Hold one end of a towel behind your back and grasp the opposite end with your other hand.
- Keep the towel in a horizontal position.
- Use your good arm to gently pull the affected arm upward, creating a stretch.
- Repeat 10 to 20 times a day for improved flexibility.

3. Finger Walk Exercise (Fig. 3) -

- Stand three-quarters of an arm's length from a wall.
- Place your fingertips on the wall at waist level with a slightly bent elbow.
- Slowly walk your fingers up the wall in a spider-like motion, raising your arm as high as comfortably possible.
- Let your fingers do the work, not your shoulder muscles.
- Slowly lower your arm and repeat.
- Perform 10 to 20 times a day to improve mobility.

4. Cross body Reach Exercise (Fig. 4) -

- Sit or stand in a comfortable position.
- Use your good arm to lift the affected arm at the elbow.
- Gently bring it across your body, applying light pressure to stretch the shoulder.
- Hold the stretch for 15 to 20 seconds.
- Repeat 10 to 20 times per day to improve flexibility and reduce stiffness.

1. 2. 3. 4.

Table 2: Composition of Roghan-e-Haft barg[21]

S.No.	Drug	Botanical Name	Part Used	Quantity
1.	Aab Barge Aak	*Calotropis procera* Linn.	Leaves	1 kg
2.	Aab Barge Bakayin	*Melia azedarach* Linn.	Leaves	1 kg
3.	Aab Barge Bedanjeer	*Ricinus communis* Linn.	Leaves	1 kg
4.	Aab Barge Dhatura	*Datura stramonium* Linn.	Leaves	1 kg
5.	Aab Barge Sambhalu	*Vitex negundo* Linn.	Leaves	1 kg
6.	Aab Barge Sahajna	*Moringa oleifera* Linn.	Leaves	1 kg
7.	Aab Barge Thuhar	*Euphorbia neriifolia* Linn.	Leaves	1 kg
8.	Roghan-e-Kunjad	*Sesamum indicum* Linn.	Oil	6 kg

RESULTS AND OBSERVATIONS

The patient was assessed as per the following objective criteria:

1. Improvement in Range of Motion (ROM) of Shoulder Joint
2. **The Shoulder Pain and Disability Index (SPADI)** - to measure current shoulder pain and disability associated with shoulder disease. It consists of two subscales: a five-item pain and an eight-item disability subscale. Patients can mark one item as not applicable, which is then excluded from scoring. If more than two items are marked not applicable, no score is calculated. The final score, on a 100-point scale, is derived by averaging both subscales, with higher scores indicating greater pain and disability.
3. Tests Negativity showing improvement in mobility and stiffness.

The **recorded values** were documented in the **proforma** at both **baseline** and **post-intervention** stages for comparison and analysis as shown by table below -

S. No.	PARAMETERS		VALUES AT BASELINE	AFTER INTERVENTION
1.	ROM	Abduction	60/65°	150^0 (full)
		Adduction	30/35°	50° (Full)
		Flexion	60/70°	180^0 (Full)
		Extension	35/45°	60^0(Full)
		Internal Rotation	40°/45°	90^0(Full)
		External Rotation	35/40°	75°
2.	SPADI Score	Total Pain Score	80%	24%
		Total Disability Score	75.5%	12.5%
		Total SPADI Score	77.5%	18.2%
3.	Diagnostic Tests	Shoulder Shrug Test	+ve	-ve
		Coracoid Pain Test	+ve	-ve
		Hawkins-Kennedy Test	+ve	-ve
		Apley Stretch Test	+ve	-ve

DISCUSSION

Frozen shoulder is a chronic inflammatory condition characterized by pain, stiffness, and restricted mobility in the shoulder joint, leading to significant functional impairment.

According to Unani medicine, frozen shoulder results from humoral imbalances, particularly ***Balgham*** (phlegm) and ***Sawdā*** (melancholy), leading to stiffness and restricted movement. ***Hijāma bilā Sharṭ*** (Dry Cupping) and ***Dalk*** (Massage) enhance blood circulation, reduce inflammation, and alleviate muscle tightness, while ***Roghan Haft Barg*** aids in pain relief and mobility restoration.

Gliding cupping, a combination of dry cupping and massage, proves to be an effective method for managing frozen shoulder by improving circulation, reducing inflammation, and relieving muscular stiffness. The negative pressure generated by cupping therapy increases oxygen supply, promotes lymphatic drainage, and helps eliminate metabolic waste, thereby reducing inflammatory markers such as interleukins and cytokines. Additionally, the mechanical stimulation of soft tissues triggers the release of endorphins and neuropeptides, contributing to pain relief and muscle relaxation. This approach aids in breaking adhesions, reducing fibrosis, and restoring shoulder mobility.

Alongside cupping therapy, targeted shoulder exercises play a vital role in enhancing joint flexibility and muscle strength. Techniques such as pendulum stretching, towel stretching, finger walk, and cross-body reach help gradually stretch the contracted joint capsule and

strengthen the surrounding muscles. The pendulum stretch uses gravity to create gentle traction, facilitating movement with minimal strain, while towel stretching and cross-body reach improve abduction and external rotation, the most restricted movements in frozen shoulder.

The combination of gliding cupping and structured exercises enhances tissue oxygenation, collagen remodeling, and mobility, leading to pain relief and functional recovery. These findings support the integration of Unani regimenal therapy with modern rehabilitation strategies for adhesive capsulitis. While pharmacological interventions remain standard in conventional medicine, this study underscores the potential of natural, non-invasive approaches in managing musculoskeletal disorders.

CONCLUSION

This case report demonstrates that *Hijāma Dalkiyya* (Gliding Cupping) and targeted exercises can serve as an effective, non-invasive approach for managing frozen shoulder. The intervention resulted in significant improvements in pain, mobility, and functional capacity, indicating its potential as an alternative to pharmacological treatments. By enhancing blood circulation, reducing inflammation, and promoting tissue flexibility, this combined therapy helped restore shoulder movement and daily functionality. These findings emphasize the value of Unani regimenal therapy in musculoskeletal rehabilitation, warranting further clinical research and integration into the modern therapeutic framework.

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Author's Contribution

BH: Conceptualization, Manuscript writing, and Manuscript drafting. **IAW & M. Najeeb:** Data Collection & Interpretation of results. **M. Nayab & MB:** Supervision, and Editing.

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