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A Case Study on the Effect of Marma Chikitsa for Managing Pain in Individuals with Frozen Shoulder

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ABSTRACT
Frozen shoulder (adhesive capsulitis) is characterized by chronic pain, stiffness and loss of range of motion (ROM) in the shoulder joint. Conventional therapies (physiotherapy, NSAIDs, injections) often provide only partial or temporary relief. Marma Science is an ancient medical discipline that aims to prevent and treat diseases, promote health, and support mental well-being through activation of specific energy points known as Marma. Marma Chikitsa, which involves gentle stimulation of these points, is traditionally used for pain relief and functional restoration. This case study evaluates the effect of Marma Chikitsa on pain management in a patient with frozen shoulder. A 42-year-old male with right-sided adhesive capsulitis for six months received Marma Chikitsa daily for 21 days, with progress recorded throughout the intervention. After 21 days, the patient reported substantial improvement, with approximately 75–80% reduction in symptoms and notable enhancement in quality of life. These findings suggest that Marma Chikitsa, as a non-pharmacological and minimally invasive therapy, may offer significant relief in the management of frozen shoulder.

Keywords: Frozen shoulder, Marma, Marma Chikitsa.

INTRODUCTION
Frozen shoulder, clinically known as adhesive capsulitis, is a common musculoskeletal disorder characterized by progressive shoulder pain, stiffness, and significant restriction in both active and passive range of motion. The condition affects approximately 2–5% of the general population, with higher prevalence in individuals aged 40–70 years and in those with diabetes or thyroid disorders.[1] It typically progresses through three stages—painful, frozen, and thawing—each varying in duration and severity.[2] Conventional management includes physiotherapy, NSAIDs, intra-articular corticosteroid injections, and, in refractory cases, manipulation under anesthesia or arthroscopic capsular release.[3] Although widely

used, these approaches may provide incomplete relief or have side effects.

In Ayurveda, frozen shoulder can be correlated with Avabahuka, a condition described under Vata-vyadhi. Classical Ayurvedic texts such as the Sushruta Samhita and Ashtanga Hridaya describe Avabahuka as involving sira-kunchana (constriction of channels), shula (pain), and restriction of arm movement due to vitiation of Vata at the amsa sandhi (shoulder joint).[4] Management traditionally emphasizes pacification of Vata through external therapies, oleation, fomentation, and stimulation of Marma points.

Marma Chikitsa, an external manual therapy involving stimulation of specific vital points (Marma), is regarded in Ayurveda as effective for modulating pain, improving circulation, and restoring neuromuscular balance. Marmas are described extensively in the Sushruta Samhita, which identifies 107 vital points where muscles, ligaments, bones, vessels, and joints converge.[5] Modern interpretations suggest that Marma stimulation may influence peripheral neural pathways and pain perception, aligning partially with concepts in neurophysiology and mechanotransduction.[6]

Increasing interest has been directed toward exploring traditional therapies such as Marma chikitsa for musculoskeletal pain, particularly in conditions such as frozen shoulder, where mobility restriction and chronic pain significantly impair quality of life. Integrative approaches combining manual therapies with conventional care have shown potential benefits in improving pain and function in shoulder disorders.[7] However, focused evidence on Marma chikitsa for adhesive capsulitis remains limited, making clinical case documentation essential for guiding future research.

The present case study aims to evaluate the effectiveness of Marma Chikitsa in reducing pain and improving functional mobility in an individual with frozen shoulder, thereby contributing to the evidence base for integrative Ayurvedic management of adhesive capsulitis.

CASE REPORT

A 42-year-old male school teacher presented to the Pt. Khushilal Sharma Ayurveda Hospital Marma opd with complaints of:

Severe pain in the right shoulder for 4 months

Difficulty lifting the arm, especially overhead activities

Morning stiffness lasting 45–60 minutes

Pain aggravated by cold weather and nighttime lying on the affected side

History of Past Illness

The patient has no prior surgery or trauma to the right shoulder and no history of any comorbidity.

Family History

There is no family history of any musculoskeletal disease.

Personal History

1. Appetite - Normal
2. Bowel - Clear
3. Sleep - Disturbed
4. Micturition - Normal

Physical Examination

1. Body weight - 72 kg
2. Heart rate - 84/min
3. Respiration rate - 20/min
4. Blood pressure - 130/80 mm Hg

On Examination

1. Duration of pain – 6 month
2. Site - unilateral
3. Location - Right shoulder pain
4. Pain - VAS Score for pain was 8 (grade 4)
5. Range of movement - Restricted (30°abduction, 100° flexion, 35°extension and 50°external rotation) Stiffness - Relieved by oral medicine (grade 3)
6. Tenderness - On pressing pain appears on face of the patient (grade 2)
7. Sleep - 3-6 hours due to pain (grade 2)

INVESTIGATION

X-Ray of right shoulder was normal.
CBC, ESR and RBS are within normal limits.

DIAGNOSIS

Frozen shoulder on right shoulder.

TREATMENT PROTOCOL

Treatment involved administration of *Marma* Chikitsa. Present study includes stimulation of 11 *Marma* that is *Kshipra Marma, Talhridaya Marma, Manibandha marma, Indrabasti Marma, kurpar Marma, Ani Marma, urvi Marma, Kakshadhara Marma, AmsaMarma, Amsaphalak Marma, Brhati Marma.* These will be stimulated for 15-18 times on an average in single sitting.[8]

Total duration - 21 days

Follow up - 7th day

S.NO.	MARMA	STIMULATION TIME	FREQUENCY	DURATION
1.	KSHIPRA MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
2.	TALHIRDAYA MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
3.	MANIBANDHA MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
4.	INDRABASTI MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
5.	KURPAR MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
6.	ANI MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
7.	URVI MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
8.	KAKSHADHARA MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
9.	AMSA	0.8 SEC	15-18 TIMES	ONCE A DAY

	MARMA			
10.	AMSAPHALAK MARMA	0.8 SEC	15-18 TIMES	ONCE A DAY
11.	BRHATI MARMA.	0.8 SEC	15-18 TIMES	ONCE A DAY

A steady and moderate pressure is applied slowly and gently at the Marma points.

MARMA STHANS

KSHIPRA

TALHIRDAYA

INDRABASTI

ANI

URVI

KAKSHADHARA

AMSA

AMSAPHALKA

Assessment Criteria

The assessment of the effect of treatment will be based on subjective and objective parameters of disease.

This will be recorded before and after treatment. The symptoms will be graded on the basis of the system to be adopted as below.[9]

1. Pain

SN	Criteria	Grading
1.	No pain	0
2.	Mild pain	1
3.	Moderate pain without difficulty in walking	2
4.	Moderate pain with difficulty in walking	3
5.	Severe pain with difficulty in walking	4

3. Stiffness

SN	Stiffness	Grading
1.	No Stiffness	0
2.	Stiffness, no medication	1
3.	Stiffness, relieved by external application	2
4.	Stiffness, relieved by oral medication	3
5.	Stiffness not responded by medicines	4

2. Flexion

SN	Flexion	Grade
1.	161°- 180°	0
2.	121°- 160°	1
3.	81°- 120°	2
4.	41°- 80°	3
5.	0°- 40°	4

4.Extenion

SN	Extension	Grade
1.	41°- 60°	0
2.	31°- 40°	1
3.	21°- 30°	2
4.	11°- 20°	3
5.	0°- 10°	4

5.External rotation

SN	External Rotation	Grade
1.	81°- 90°	0
2.	61°- 80°	1
3.	41°- 60°	2
4.	21°- 40°	3
5.	0°- 20°	4

6.Abduction

SN	Abduction	Grade
1.	161° - 180°	0
2.	121° - 160°	1
3.	81°- 120°	2
4.	41°- 80°	3
5.	0°- 40°	4

7.Tenderness

SN	Tenderness	Grade
1.	On pressing patient does not feel any pain	0
2.	On pressing patient feels pain, but no sign on face (wincing)	1
3.	On pressing pain appear on face of patient (wincing)	2
4.	Wincing of the face and withdrawal of the affected part on pressure	3
5.	Patient does not allow to touch	4

8.Sleep

SN	Sleep	Grade
1.	More than 8 hours	0
2.	6-8 hours	1
3.	3-6 hours	2
4.	Less than 3 hours	3
5.	No sleep	4

OBSERVATION

Diagnostic criteria	Before treatment	After treatment
Pain	VAS Score 8 (grade 4)	VAS Score 0 (grade 0)
Stiffness	Stiffness, relived by oral medication (Grade 3)	No Stiffness (Grade 0)
Flexion	100°	160°
Extension	35°	45°
External rotation	50°	65°
Abduction	30°	120°
Tenderness	On pressing pain appears on face of patient (Grade 2)	On pressing patient does not feel any pain (Grade 0)
Sleep	3-6 hours (Grade 2)	6-8 hours (Grade 1)

Mode of Action of Marma Chikitsa in Frozen Shoulder (Avabahuka)

Frozen shoulder, or adhesive capsulitis, is characterized by pain, stiffness, and restricted range of motion (ROM) due to inflammation, capsular contracture, and peri-articular muscle tightness. In Ayurveda, this correlates with Avabahuka, a Vata-dominant disorder affecting the amsa sandhi (shoulder joint) and associated channels (sira-kunchana) [10].

Marma Chikitsa, through targeted stimulation of 10 specific Marma points in this case (Kshipra, Talhridaya, Manibandha, Indrabasti, Kurpar, Ani, Urvi, Kakshadhara, Amsa, Amsaphalak, and Brhati Marma), facilitates pain relief, improved mobility, and enhanced neuromuscular function.

1. Pain Modulation via Neural Mechanisms

1. Gate Control Theory (Neurophysiological Effect):

Gentle mechanical stimulation of Marma points activates large-diameter Aβ fibers, which inhibit nociceptive signal transmission in the dorsal horn of the spinal cord, thereby reducing pain perception [11].

This aligns with the observed reduction in VAS pain score from 8 (grade 4) to 0 (grade 0) in the present case.

2. Endogenous Analgesia:

Repeated Marma stimulation may enhance release of endorphins, enkephalins, and serotonin, contributing to central pain inhibition [11].

3. Peripheral Neurovascular Modulation:

Marmas are described as convergence points of muscles, tendons, vessels, and ligaments [12].

Stimulation may reduce local nerve hypersensitivity and inflammatory mediators, contributing to decreased tenderness (grade 2 → 0) and improved sleep (grade 2 → 1).

2. Muscle Relaxation and Soft Tissue Mobilization

1. Reduction of Peri-articular Muscle Tension:

Contracted muscles around the shoulder (deltoid, rotator cuff, pectoralis major/minor) contribute to stiff-

ness and restricted ROM.
Marma stimulation induces reflex relaxation of these muscles via proprioceptive feedback mechanisms, improving flexion (100° → 160°), abduction (30° → 120°), extension (35° → 45°), and external rotation (50° → 65°).

2. Fascia and Ligament Effects:
Mild repetitive pressure may enhance tissue pliability and reduce capsular tightness, aiding recovery from frozen stage of adhesive capsulitis [11].

3. Enhancement of Microcirculation and Metabolic Clearance

1. Vascular Stimulation:
Marma points are located near arteries, veins, and capillaries. Stimulation improves local blood flow, providing nutrients and oxygen to ischemic peri-articular tissues [12].

2. Metabolite Clearance:
Increased circulation accelerates removal of inflammatory metabolites, reducing pain and swelling [11].

4. Energetic (Pranic) and Dosha Balancing Effects

1. Vāta Pacification:
Avabahuka is primarily Vata-vitiated; Marma stimulation harmonizes Prana Vāta, facilitating normalization of joint movement and energy flow [10].

2. Clearing Srotas (Channels):
Gentle pressure at marma points is believed to remove sira-kunchana (channel constriction), improving joint nutrition and facilitating movement [10,12].

3. Holistic Nervous System Integration:
The combination of mechanical and energetic stimulation may modulate the autonomic nervous system, reducing sympathetic overactivity, improving sleep, and supporting tissue repair [11,13].

5. Improvement in Functional Mobility
By combining pain reduction, muscle relaxation, vascular enhancement, and dosha balancing, Marma Chikitsa restores neuromuscular coordination around the shoulder joint. Clinical outcomes in this case demonstrate improvement in ROM, pain, tenderness, and stiffness, aligning with the Ayurvedic aim of restoring movement (sandhi gati) and alleviating Vāta obstruction.

Summary Table of Mode of Action

Therapeutic Aspect	Mechanism	Observed Outcome (Case)
Pain relief	Gate control, endorphin release, reduced nerve hypersensitivity	VAS: 8 → 0 Tenderness 2 → 0
Muscle relaxation	Reflex relaxation via proprioception	Flexion/Abduction/Rotation improved
Microcirculation	Increased blood flow, metabolite clearance	Reduced stiffness (Grade 3 → 0)

Dosha/Prana balancing	Vata pacification, srotas clearance	Improved sleep (Grade 2 → 1), overall comfort
Neuromuscular coordination	Improved motor control, joint mobility	Functional mobility restored

DISCUSSION

In the present case, a 42-year-old male patient with unilateral right shoulder pain, restricted range of motion, and significant functional impairment was treated with Marma Chikitsa for 21 days. A total of 11 marma points were stimulated—Kshipra, Talhridaya, Manibandha, Indrabasti, Kurpar, Ani, Urvi, Kakshadhara, Amsa, Amsaphalak, and Brhati. Each Marma was stimulated 15–18 times per session, with gentle and steady pressure, following classical Ayurvedic guidelines.

Effect on Pain and Stiffness

Before treatment, the patient reported severe pain (VAS 8, grade 4) and stiffness relieved only by oral medication (grade 3). Post-treatment, pain completely resolved (VAS 0), and stiffness was absent (grade 0). These findings suggest that Marma stimulation may have analgesic effects, likely mediated through modulation of peripheral neural pathways, mechanoreceptor activation, and improved local circulation. Modern studies indicate that targeted pressure and stimulation at key points may reduce nociceptive signaling, decrease inflammation, and restore joint function.

Effect on Range of Motion

Significant improvements were observed in all planes of shoulder movement:
Flexion improved from 100° to 160°
Extension increased from 35° to 45°
External rotation rose from 50° to 65°
Abduction improved remarkably from 30° to 120°
These changes suggest that Marma Chikitsa may help restore joint mobility by reducing capsular tightness, improving muscle elasticity, and facilitating neuromuscular coordination. The gentle mechanical stimulation and targeted pressure at the Marma points likely promoted relaxation of periarticular tissues and enhanced synovial fluid dynamics, which are critical in frozen shoulder recovery.

Effect on Functional and Quality-of-Life Parameters

Tenderness, graded as 2 before treatment, completely resolved, indicating reduction in localized hyperalgesia. Sleep quality also improved from 3–6 hours to 6–8 hours per night, reflecting the indirect benefits of pain relief on overall well-being. These findings underscore the holistic impact of Marma chikitsa, aligning with Ayurveda's principle of treating both symptoms and systemic disturbances.

Clinical Implications

This case demonstrates that Marma Chikitsa can be an effective non-invasive intervention for frozen shoulder, particularly in patients who are reluctant or unsuitable for pharmacological or surgical treatment. The chikitsa appears to address not only pain but also stiffness, range of motion, and functional impairment, offering a multidimensional benefit.

CONCLUSION

Marma Chikitsa in this case resulted in complete pain relief, marked improvement in range of motion, and better quality of life for a patient with frozen shoulder. These findings support its potential role as a complementary therapy for adhesive capsulitis. Integrating Ayurvedic external therapies with conventional management may offer a safe and effective approach for improving outcomes in musculoskeletal disorders.

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