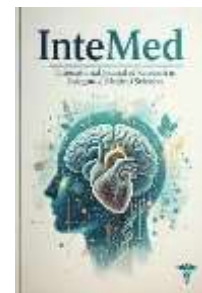




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Review Article

Effect of Acupuncture in the Management of Frozen Shoulder: A Case Report

Dr. Yasir Dabir¹, Sameer Dabir², Dr. Rubina Dabir³, Dr. Santosh Chavan⁴

¹ PG Scholar, Department of Panchakarma, Bharati Vidyapeeth College of Ayurved, Pune, Maharashtra, India - 411043.

Email: dr.dabiryasir@gmail.com

² Consultant, Naturopathy & Physiotherapy, DHC, Mangaon, Raigad, Maharashtra, India - 402104.

Email: dabirsamir@gmail.com

³ Consultant, Unani Therapy, DHC, Mangaon, Raigad, Maharashtra, India - 402104.

Email: dr.rubinadabir@gmail.com

⁴ HOD and Professor, Department of Panchakarma, Bharati Vidyapeeth College of Ayurved, Pune, Maharashtra, India - 411043.

Email: drsantoshchavan5@gmail.com

Abstract:

Introduction: Frozen shoulder (adhesive capsulitis) is a common, self-limiting yet disabling musculoskeletal disorder marked by progressive pain and restriction of active and passive glenohumeral movement. Conventional management — analgesics, corticosteroid injection, and structured physiotherapy — gives variable and often slow relief, prompting growing clinical and research interest in acupuncture as a low-risk adjunct or alternative.

Case presentation: A 56-year-old right-hand-dominant male presented with a four-month history of insidious-onset right shoulder pain and progressively restricted range of motion, without preceding trauma or known systemic disease, consistent with the freezing-to-frozen stage of primary adhesive capsulitis. Clinical diagnosis was made on history and examination; plain radiography excluded bony or degenerative pathology. The patient underwent a structured course of acupuncture using a combination of local (LI15, LI14, TE14, SI9, HT1 Ashi points) and distal (LI4, LI11, ST38, GB34) acupoints, twice weekly for six weeks (12 sessions), supplemented

with a home stretching programme and no concurrent pharmacological or injection therapy.

Outcomes: Pain on the Visual Analogue Scale fell from 7/10 at baseline to 1/10 at the end of treatment, the Shoulder Pain and Disability Index score improved from 78% to 18%, and goniometric range of motion in flexion, abduction, and external and internal rotation improved substantially. Gains were maintained at 12-week follow-up, and no adverse events were recorded beyond transient needle-site bruising.

Conclusion: In this patient, a structured acupuncture protocol combined with home exercise was associated with clinically meaningful reductions in pain and disability and improved shoulder mobility. This case adds to a growing body of trial evidence supporting acupuncture as a reasonable, low-risk component of frozen shoulder management, while underscoring the need for controlled studies to establish causal efficacy.

Keywords: *Acupuncture; Frozen shoulder; Adhesive capsulitis; Shoulder pain; Traditional Chinese Medicine; Case report*

Introduction

Frozen shoulder, or adhesive capsulitis, is a condition of unknown primary aetiology characterised by progressive thickening, fibrosis, and contracture of the glenohumeral joint capsule, producing pain and a capsular pattern of restricted movement (external rotation more limited than abduction, which is more limited than internal rotation) [1,2]. It affects an estimated 2–5% of the general population, most commonly adults between 40 and 65 years of age, with a higher prevalence among people with diabetes mellitus and thyroid disorders [1,3]. The condition classically progresses through freezing (painful), frozen (stiff), and thawing (recovery) phases over a course that may extend from several months to more than two years [4,5].

Conventional treatment options include patient education, structured physiotherapy, oral or injected corticosteroids, hydrodilatation, and — in refractory cases — manipulation under anaesthesia or arthroscopic capsular release [1]. While corticosteroid injection can shorten the painful phase, evidence on the comparative long-term effectiveness of conservative options remains mixed, and many patients seek additional or alternative approaches for symptom relief [6]. Acupuncture, a core modality of Traditional Chinese Medicine, has been investigated in numerous randomised controlled trials and systematic reviews for shoulder pain and adhesive capsulitis, with meta-analytic evidence suggesting benefit for pain and function when used alone or combined with physical therapy [3,6,7,8,9]. Proposed mechanisms include segmental and extra-segmental analgesia through endogenous opioid and gate-control pathways, together with local anti-inflammatory and neuro-immune effects at the acupuncture point and target tissue [10].

Despite this expanding trial base, detailed clinical case reports describing the specific point selection, dosing, and week-by-week outcome trajectory of an acupuncture course for frozen shoulder are relatively scarce, particularly outside East Asian settings. This report describes the clinical course of a 56-year-old man with right-sided primary adhesive capsulitis treated with a combined local–distal acupuncture protocol, with the aim of illustrating a practical treatment framework and objective outcome measurement that may be useful to clinicians considering acupuncture for this condition. We present the following case in accordance with the CARE (Case Report) reporting guideline [11,12].

Patient Information

A 56-year-old right-hand-dominant male, employed in a predominantly sedentary occupation, presented to the outpatient acupuncture/physical medicine clinic with a four-month history of insidious, non-traumatic right shoulder pain and progressive difficulty moving the arm. The pain was dull and aching at rest, sharp at end ranges of movement, and worse at night, frequently disturbing sleep when lying on the affected side. He reported increasing difficulty with overhead reaching, combing his hair, fastening his seatbelt, and reaching into a back pocket or bra-strap height behind his back.

There was no history of shoulder trauma, dislocation, or recent surgery. Past medical history was unremarkable for diabetes mellitus, thyroid disease, cardiac disease, or inflammatory arthritis; the patient was not taking any regular medication and had no known drug allergies. He denied prior corticosteroid injection or acupuncture treatment for this episode. He had briefly used over-the-counter oral NSAIDs with minimal relief and had not undertaken any structured physiotherapy prior to presentation. He was a non-smoker and consumed alcohol occasionally. Family history was non-contributory. He described the pain and restricted movement as increasingly interfering with his work productivity and household activities, which motivated him to seek treatment.

Clinical Findings

On inspection, there was no visible swelling, deformity, or muscle wasting, though mild guarding of the right shoulder was noted during undressing. Palpation revealed diffuse tenderness over the anterior and lateral subacromial region and the bicipital groove, without a discrete focal trigger point. Active and passive range of motion were both restricted in a capsular pattern, with external rotation most affected, followed by abduction and internal rotation, and a firm, painful "empty" end-feel was noted at end range. Baseline goniometric measurements were: forward flexion 95°, abduction 80°, external rotation (arm at side) 20°, and internal rotation to the L3 vertebral level (measured as reach behind the back).

Neer's and Hawkins–Kennedy impingement tests were negative, the empty-can (Jobe) test showed reduced strength secondary to pain rather than a discrete rotator cuff tear pattern, and neurovascular examination of the upper limb was normal, with no cervical spine referred-

pain pattern on Spurling's test. Baseline outcome measures recorded were a Visual Analogue Scale (VAS) pain score of 7/10 and a Shoulder Pain and Disability Index (SPADI) score of 78%.

Timeline

Time point	Event
4 months before presentation	Insidious onset of right shoulder pain without preceding trauma
Week 0 (baseline)	Clinical assessment, diagnosis of adhesive capsulitis, radiograph performed, informed consent obtained; VAS 7/10, SPADI 78%
Weeks 1–6	Acupuncture therapy, 2 sessions/week (12 sessions total) with home stretching programme
Week 3 (interim review)	VAS 4/10, SPADI 46%; improved external rotation and sleep quality
Week 6 (end of treatment)	VAS 1/10, SPADI 18%; near-full functional range of motion
Week 10 (4-week follow-up)	Gains maintained; patient independently continuing home exercises
Week 18 (12-week follow-up)	Sustained improvement; no recurrence; patient discharged from active care

Diagnostic Assessment

The diagnosis of primary (idiopathic) adhesive capsulitis was made clinically, applying criteria consistent with the American Physical Therapy Association's clinical practice guideline: patient age between 40 and 65 years, gradual onset with progressive worsening of pain and stiffness, functional limitation of sleeping, grooming, dressing, and reaching activities, and passive glenohumeral range of motion restricted in multiple planes with external rotation most affected [3]. Plain radiographs of the right shoulder were obtained to exclude glenohumeral osteoarthritis, calcific tendinitis, and fracture, and were unremarkable. Differential diagnoses considered and excluded on clinical grounds included rotator cuff tendinopathy or tear, subacromial impingement syndrome, and cervical radiculopathy referring pain to the shoulder. Based on the duration of symptoms (approximately four months), the predominance of pain together with substantial stiffness, and the capsular-pattern restriction on examination, the presentation was staged as transitioning from the freezing into the frozen phase of adhesive capsulitis [4,5].

Therapeutic Intervention

The rationale, expected benefits, and possible risks (bruising, minor bleeding, transient soreness, rare pneumothorax with chest-wall points, and infection) were explained to the patient, and written informed consent for acupuncture treatment and for publication of anonymised clinical details was obtained before treatment began. Single-use, sterile, 0.25 × 25–40 mm filiform needles were used throughout, following standard aseptic technique.

A combined local–distal point selection was used, informed by traditional acupuncture point prescriptions for shoulder peri-arthritis and by comparative trial evidence indicating that combining local and distal points, or emphasising distal points, may enhance range-of-motion and disability outcomes over local points alone [8,9]. The points used are summarised in Table 1.

Table 1. Acupuncture point selection used in this case.

Category	Acupoint (code)	Location / rationale
Local	LI15 (Jianyu)	Anterior shoulder hollow between acromion and greater tuberosity; primary local point for shoulder disorders
Local	TE14 (Jianliao)	Posterior shoulder hollow, paired with LI15 to bracket the glenohumeral joint
Local	SI9 (Jianzhen)	Posterior axillary fold; addresses posterior capsule restriction
Local	LI14 (Binao) / Ashi points	Deltoid insertion and points of maximal tenderness identified on palpation
Local	HT1 (Jiquan)	The depression in the center of the axilla, on the medial aspect of the axillary artery
Distal	LI4 (Hegu)	Hand Yangming source point; general analgesic and anti-inflammatory point, classic distal point for upper-limb disorders
Distal	LI11 (Quchi)	Elbow crease; dredges the Yangming channel, supports LI4 and LI15
Distal	ST38 (Tiaokou)	Anterior tibia; empirically effective contralateral/ipsilateral distal point for frozen shoulder in TCM literature
Distal	GB34 (Yanglingquan)	Influential point of sinews/tendons; used to relax musculotendinous restriction and relieve pain

At each session, local points were needled with the shoulder positioned to open the joint space (arm supported in mild abduction), angled toward the joint line, and manipulated to elicit deqi (a sensation of soreness, distension, or heaviness). Distal points were needled perpendicularly to a depth of 0.5–1 cun. Needles were retained for 20–25 minutes per session, with manual stimulation at the midpoint of retention. A heat lamp (TDP) was applied to the shoulder during needle retention to promote local circulation and comfort. Treatment was delivered twice weekly for six consecutive weeks (12 sessions in total).

The patient was additionally taught a home programme of Codman pendulum exercises and gentle wall-climbing and towel-stretch exercises to be performed daily, and was advised on activity modification to avoid provocative overhead loading in the early, more irritable phase of treatment. No corticosteroid injection, oral NSAID, or formal physiotherapy modality was used concurrently, so that the clinical response to acupuncture and home exercise could be observed with minimal confounding from other active interventions.

Follow-up and Outcomes

The patient tolerated all 12 acupuncture sessions well, with the only adverse effect being minor, self-limiting bruising at two needle sites, which resolved within a week without intervention. Clinically meaningful improvement in pain was evident from the third week of treatment, with more substantial gains in range of motion emerging from week four onward as pain-related guarding decreased. Objective outcome data are summarised in Table 2.

Table 2. Pain, disability, and range-of-motion outcomes over the course of treatment and follow-up.

Outcome measure	Baseline (Week 0)	Week 3	Week 6 (end of treatment)	Week 18 (follow-up)
VAS pain (0–10)	7	4	1	1
SPADI score (%)	78	46	18	14
Flexion (°)	95	115	155	160
Abduction (°)	80	105	150	155
External rotation (°)	20	32	55	58
Internal rotation (level)	L3	L2	T10	T9

By the end of the six-week treatment course, VAS pain had fallen from 7/10 to 1/10 and the SPADI score had improved from 78% to 18%, exceeding commonly cited minimal clinically important difference thresholds for both measures. Sleep quality improved markedly, with the patient reporting he could once again lie on the affected side without pain. At the 12-week follow-up visit, gains in pain, disability, and range of motion were maintained, and the patient had returned to his usual occupational and recreational activities without restriction. He was discharged from active treatment with continued encouragement to maintain the home stretching routine.

Discussion

This case describes substantial improvement in pain, disability, and shoulder range of motion in a 56-year-old man with primary adhesive capsulitis following a structured, twelve-session acupuncture course combined with a home exercise programme. The magnitude and time course of improvement are broadly consistent with published trial evidence. A systematic review and meta-analysis by Ben-Arie et al. concluded that acupuncture produces significant improvement in pain and shoulder function in adhesive capsulitis compared with sham or waitlist control [6]. Similarly, a randomised controlled trial by Asheghan et al. found acupuncture superior to physiotherapy alone for pain and range-of-motion outcomes in frozen shoulder [7]. A more recent meta-analysis by Xu et al. reported that combining acupuncture with physical therapy produced greater improvement than physical therapy alone across multiple shoulder-function outcome measures [8], supporting the adjunctive exercise component used in this case.

The point-selection strategy in this case, which combined local shoulder points (LI15, TE14, SI9, HT1) with distal points (LI4, LI11, ST38, GB34), draws on a comparative trial by Chandran et al., which found that both local and remote acupuncture points improved the Shoulder Pain and Disability Index and range of motion in periarthritis of the shoulder, with remote points showing a numerically greater between-group effect [9]. Combining both categories, as done here, is consistent with common clinical practice and with meta-analytic work on pharmacopuncture and thread-embedding acupuncture protocols that similarly integrate local and distal points for adhesive capsulitis [13,14]. Proposed mechanisms for these effects include modulation of nociceptive signalling through gate-control and descending inhibitory pathways,

endogenous opioid release, and local anti-inflammatory and neuro-immune regulation at needled acupoints and their target tissues, which may reduce synovitis and facilitate capsular remodelling in early-stage disease [10].

This report has the inherent limitations of a single case. Adhesive capsulitis is often self-limiting, and the observed improvement cannot be firmly attributed to acupuncture in the absence of a control condition; natural resolution during the transition from the frozen to thawing phase, concurrent home exercise, regression to the mean, and non-specific or placebo effects of a therapeutic clinical encounter may all have contributed [1,5]. Outcome measures (VAS and SPADI) were patient-reported and unblinded, and no long-term (>12-week) follow-up beyond that reported here was available at the time of writing. Larger, blinded, sham-controlled trials — several of which are currently registered or under way [13,15] — are needed to isolate the specific therapeutic contribution of acupuncture from these confounding factors. Nonetheless, given its low risk profile and the consistency of this patient's response with the broader trial literature, this case supports acupuncture as a reasonable option to discuss with patients seeking non-pharmacological management of frozen shoulder, particularly as an adjunct to a home exercise programme.

Patient Perspective

The patient reported that, prior to treatment, shoulder pain and stiffness had significantly disrupted his sleep and made routine tasks such as dressing, combing his hair, and reaching overhead difficult and frustrating. He noted a clear improvement in comfort within the first two to three weeks of acupuncture treatment, followed by steady gains in movement over the remainder of the course. He described the treatment as well tolerated, with only mild and transient discomfort at needle insertion sites, and expressed satisfaction with acupuncture as a non-pharmacological option that allowed him to avoid injection therapy or surgery.

Informed Consent

Written informed consent was obtained from the patient for both the acupuncture treatment described and for publication of this case report, including anonymised clinical details and outcome data. A copy of the signed consent form is available for review by the Editor-in-Chief of this journal upon request.

Conflicts of Interest

The author(s) declare that they have no conflicts of interest relevant to the content of this case report.

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