Case Report

ROLE OF THERAPEUTIC YOGA IN THE SUPPORTIVE MANAGEMENT OF LOWER LIMB EDEMA, LEFT LEG VASCULAR OBSTRUCTION, MUSCULOSKELETAL DISCOMFORT, AND NUTRITIONAL DEFICIENCIES IN A 61-YEAR-OLD FEMALE A CASE REPORT

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ABSTRACT

Background: Frozen shoulder, clinically known as adhesive capsulitis, is a debilitating musculoskeletal condition characterized by progressive pain and restriction of shoulder movement. The condition often leads to compensatory postural adaptations and secondary musculoskeletal complaints, particularly in the upper back region. Conventional management strategies include pharmacological treatment, physiotherapy, and exercise-based rehabilitation; however, complementary approaches such as therapeutic yoga have gained increasing attention because of their holistic effects on physical and psychological health. This case report describes the therapeutic outcomes in a 37-year-old patient diagnosed with frozen shoulder accompanied by chronic upper back pain.

Keywords: Therapeutic Yoga, Lower Limb Edema, Pranayama, Peripheral Vascular Disease, Elderly Rehabilitation, Vitamin D Deficiency, Vitamin B12 Deficiency, Quality of Life

INTRODUCTION

Frozen shoulder, or adhesive capsulitis, is a chronic musculoskeletal disorder characterized by pain and progressive limitation of shoulder movement due to inflammation and fibrosis of the glenohumeral joint capsule [1].

The condition affects approximately 2–5% of the general population and is most commonly observed among middle-aged individuals. Patients frequently experience difficulty in performing daily activities such as dressing, grooming, lifting objects, and reaching overhead. The clinical course of adhesive capsulitis is generally prolonged and may extend over several months or even years, significantly affecting quality of life and occupational productivity [2].

In addition to localized shoulder symptoms, individuals with frozen shoulder often develop compensatory movement patterns and postural abnormalities. Reduced shoulder mobility may increase strain on surrounding musculature, including the upper trapezius, rhomboids, levator scapulae, and thoracic paraspinal muscles. Consequently, many patients report persistent upper back pain, muscle stiffness, and reduced functional capacity [3]. Such secondary complications may further contribute to disability and psychological distress.

Therapeutic yoga has emerged as an integrative health intervention that combines physical postures, breathing regulation, relaxation techniques, and mindfulness practices. Unlike conventional exercise programs that primarily focus on physical rehabilitation, yoga addresses both physical and psychosocial dimensions of health. Previous research has demonstrated the beneficial effects of yoga in reducing musculoskeletal pain, improving flexibility, enhancing balance, and promoting emotional well-being [4].

The present case report aims to describe the effects of a structured therapeutic yoga intervention on a patient with frozen shoulder accompanied by chronic upper back pain.

CASE REPORT

A 37-year-old patient visited the with complaints of persistent right shoulder pain and upper back pain for approximately six months. The symptoms developed gradually without any significant history of trauma, surgery, or fracture. The patient reported difficulty in performing overhead activities, combing hair, reaching behind the back, lifting objects, and prolonged computer-based work.

Pain was aggravated during shoulder movements,

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particularly abduction and external rotation. The patient also experienced sleep disturbances due to nocturnal pain and stiffness. No significant medical comorbidities or neurological symptoms were reported.

CLINICAL FINDINGS

Physical examination demonstrated marked restriction of active and passive shoulder movements. Shoulder flexion was restricted to 100 degrees, abduction to 80 degrees, and external rotation was significantly limited. Postural assessment revealed forward head posture, rounded shoulders, and increased thoracic kyphotic tendency. Palpation revealed tenderness over the anterior shoulder region and increased muscle tightness in the upper trapezius, levator scapulae, and rhomboid muscles.

Pain intensity was assessed using the Visual Analog Scale [VAS] and recorded as 8/10. Based on clinical findings, the patient was diagnosed with Stage II adhesive capsulitis [Frozen Stage] associated with upper back pain secondary to postural dysfunction.

TIMELINE

THERAPEUTIC INTERVENTION

DURATION	CLINICAL EVENTS
Month 0	Onset of shoulder pain and stiffness
Month 3	Development of upper back pain and postural discomfort
Month 6	Presentation to Yoga Therapy Clinic
Week 1	Baseline assessment and initiation of yoga intervention
Week 4	Moderate reduction in pain and improvement in mobility
Week 8	Significant improvement in pain, posture, and shoulder function

A personalized therapeutic yoga protocol was designed and administered for eight weeks. The patient attended supervised sessions three times per week, each lasting approximately sixty minutes.

Each session commenced with diaphragmatic breathing, Nadi Shodhana Pranayama, and Ujjayi breathing to facilitate relaxation and improve respiratory efficiency. These practices were followed by gentle cervical and shoulder joint mobilization exercises aimed at reducing stiffness and promoting circulation around the affected structures.

The asana component included:

Tadasana: This stretching posture helps elongate the spine, improve posture, and increase body awareness. It may also assist in improving balance and circulation. [Figure 1]

Figure 1:tadasana

Utthita Trikonasana: This pose provides a lateral stretch to the body and supports flexibility of the spine and legs. It may stimulate abdominal organs and support digestive function. [Figure 2]

Figure 2: Utthita Trikonasana

Utthita Parsvakonasana: A strengthening and stretching posture that enhances lower body stability and promotes circulation throughout the body. [Figure 3]

Figure 3:Utthita Parsvakonasana

Uttanasana: Forward bending postures help calm the mind, reduce mental tension, and gently stretch the back muscles and hamstrings. [Figure 4]

Figure 4: Uttanasana

Sirsasana: Traditionally regarded as an advanced posture, it may improve concentration and circulation. It should only be practiced under expert supervision and avoided in uncontrolled hypertension or severe weakness. [Figure 5]

Figure 5: Sirsasana

Bharadvajasan :This seated twist improves spinal mo-

bility and may support digestion and posture correction.[Figure 6]

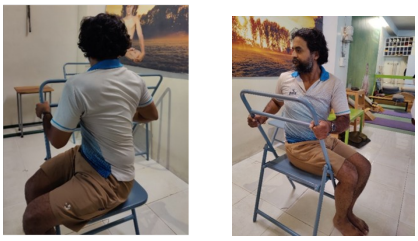

Figure 6: Bharadvajasan

Chakrasana [Wheel Pose] is a back-bending yoga posture that improves spinal flexibility and strengthens the shoulders and back muscles. It also helps open the chest and increase energy levels [Figure 7]

Figure 7:Chakrasana

Supta Padangusthasana : Helpful for stretching the legs and improving flexibility, especially in individuals with muscular tightness or reduced lower-limb circulation.

Setu Bandha Sarvangasana : A mild backbend that stretches the chest and spine while helping reduce stress and physical fatigue.

The final component consisted of Yoga Nidra and guided mindfulness meditation to reduce stress, facilitate neuromuscular relaxation, and improve pain coping mechanisms. All practices were performed within pain-free limits and gradually progressed according to the patient's tolerance.

OUTCOME MEASURES AND FOLLOW-UP

Outcome assessment was conducted before and after completion of the intervention. Pain intensity was measured using the Visual Analog Scale, while shoulder mobility was assessed through goniometric measurements.

At the end of eight weeks, pain intensity decreased from 8/10 to 2/10. Shoulder flexion improved from 100° to 160°, abduction increased from 80° to 150°, and external rotation demonstrated noticeable improvement. The patient reported reduced upper back stiffness, improved posture, enhanced sleep quality, and increased ease in performing activities of daily living.

No adverse events or complications were reported during the intervention period.

LIMITATIONS

This report describes a single patient and therefore findings cannot be generalized. Objective outcome measures and long-term follow-up data were limited. Controlled studies with larger sample sizes are needed to confirm the effectiveness of therapeutic yoga in similar patients.

PATIENT OUTCOME AND FOLLOW-UP

After regular supervised yoga practice and adherence to medical advice, the patient reported subjective improvement in comfort, mobility, relaxation, and ability to perform daily activities. Lower-limb stiffness and perceived stress were reduced. Continued follow-up and multidisciplinary care were advised.

DISCUSSION

The findings of this case report indicate that therapeutic yoga may provide meaningful clinical benefits for individuals with frozen shoulder and associated upper back pain. Adhesive capsulitis is characterized by pain -induced movement restriction and capsular fibrosis, which frequently result in altered biomechanics and compensatory muscular overactivity. These compensatory patterns often contribute to secondary pain in the cervical and thoracic regions, creating a cycle of discomfort and functional limitation [5].

The therapeutic improvements observed in this patient may be attributed to multiple mechanisms. The gentle stretching and mobilization components of the yoga intervention likely contributed to increased capsular extensibility and reduced muscular tightness around the shoulder complex. Improved flexibility of the pectoral muscles and strengthening of postural stabilizers may have reduced abnormal loading on the shoulder girdle and thoracic spine. Furthermore, yoga postures encourage balanced muscular activation and enhanced body awareness, which may facilitate restoration of normal movement patterns [6].

Breathing practices and relaxation techniques may also have played a significant role in pain reduction. Chronic musculoskeletal pain is frequently associated with increased sympathetic nervous system activity, psychological stress, and heightened pain sensitivity. Yogic breathing techniques have been shown to influence autonomic regulation, promote parasympathetic activation, and reduce physiological stress responses. These effects may contribute to decreased muscle tension and improved pain perception [7].

The findings of the present case are consistent with previous studies demonstrating the effectiveness of yoga-based interventions for chronic musculoskeletal disorders. Research has reported improvements in pain intensity, joint mobility, physical functioning, and psychological well-being among individuals participating in structured yoga programs [4,8].

CONCLUSIONS

This case report demonstrates that therapeutic yoga inter-

vention was associated with significant improvements in pain, shoulder mobility, upper back flexibility, posture, and functional performance in a 37-year-old patient with frozen shoulder and chronic upper back pain. The integration of breathing exercises, therapeutic postures, mobility training, relaxation practices, and mindfulness techniques appeared to contribute to both physical and psychological recovery. Therapeutic yoga may therefore be considered a safe, cost-effective, and holistic complementary approach in the management of adhesive capsulitis and related musculoskeletal dysfunctions. Further controlled clinical studies involving larger sample sizes are recommended to establish evidence-based guidelines for the incorporation of yoga therapy into conventional rehabilitation programs.

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