

## CASE REPORT

## EFFECTIVENESS OF SLEEPER STRETCH IN SHOULDER POSTERIOR CAPSULAR TIGHTNESS - A CASE REPORT

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## ARTICLE INFO

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## ABSTRACT

A single case study design was selected to evaluate the effect of sleeper stretch on the pain and dysfunction due to posterior capsular tightness in shoulder joint. The technique involves sustained passing stretching of posterior capsule in a prescribed position and exercise regimen. Pre and post evaluation of treatment was evaluated using different outcome measures. The study involved three phases, pre treatment phase, treatment phase and post treatment phase. The technique's effect was to reduce the pain and improve function during activities of daily living. A structured exercise regimen of sleeper stretch was given to the patient for two weeks, 10 repetitions, and three sets for three times a day. The technique shown to be effective in treating patient with posterior capsular tightness.

**Key words:** adhesive capsulitis, overhead injury, shoulder joint, posterior capsule.

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## INTRODUCTION

Shoulder injuries accounts for 8-20% in overhead sports activities (Reeser *et al.*, 2003). Shoulder injuries occur largely as a result of repetitive trauma. This can be due to repeated spiking (Reeser *et al.*, 2003, Kugler *A et al.*, 1996). An elite athlete performs more than 40,000 spikes in a season. This results in higher risk for developing shoulder pain, which is a commonly reported scenario in overhead sports, including baseball or tennis, Volley ball, basket ball and so on as reported by many investigators (Reeser *et al.*, 2003).

Alterations in the range of motion (ROM) of the dominant shoulder of throwing athletes, such as decreased internal rotation, increased external rotation, and increased posterior shoulder tightness (limited glenohumeral [GH] horizontal adduction). Such alterations have been linked empirically to bony and soft tissue adaptations that result from the large rotational and distractive forces acting on the GH joint during the throwing motion (Kevin G *et al.*, 2003).

It has been found that, the overhead athlete has a tendency to develop posterior shoulder tightness. The posterior shoulder tightness may contribute to alteration in ROM such as reduced internal rotation, horizontal adduction and increased external rotation (Corrago *et al.*, 2009). Posterior shoulder tightness of the shoulder has been suggested as a causative or perpetuating factor in shoulder impingement syndrome, labral lesions & cuff pathology. In overhead athletes like volleyball players, repetitive spiking results in distention & laxity of anterior

capsular structures as well as the tightening of posterior shoulder soft tissues (Harryman *et al.*, 1996)

Because throwing athletes often endure large forces and large numbers of repetitions, such athletes routinely participate in a variety of exercises and techniques before and after a bout of throw or sport.

Sleeper stretch is one among these adopted to isolate the soft tissue of the posterior aspect of the shoulder (Kevin G *et al.*, 2003). Although this exercise is established among the players, the immediate effect has not been discussed or reported.

**CASE DESCRIPTION**

A 25 year old male volley ball player was referred to physiotherapy by an orthopedic surgeon for recurrent shoulder pain. His chief complaint was pain around right shoulder joint. He also reported limitation of movements around the shoulder in overhead activities. His symptoms get aggravated after playing volleyball, as it is a routine part of his daily life. The pain was gradual in onset, dull aching, and progressive in nature. The pain and movement restrictions refuse him to be active in sports as before. His symptoms were interfering with activities of daily living and sporting. The symptoms were relieved before with medical management and other physiotherapeutic modalities like Transcutaneous Electric Nerve Stimulation (TENS) and Inter-ferential Therapy (IFT) for a short period of time (1 to 10 days). The symptoms were recurring after a bout of overhead activities and matches, made the patient scared about his symptoms. Patient was referred to

another physiotherapist for further evaluation and management of the same.

**DESCRIPTION OF CLINICAL PRESENTATION**

The patient had a history of shoulder pain since six months. He had undergone different medical and physiotherapeutic management for the same. The pain and other symptoms subsided for few days and triggered again with activities of shoulder. There was no history of trauma, emergency medical attention on ground and surgeries to the right shoulder. The patient was on medication for pain during the initial days of pain and later used when pain recurred.

Patient reported a score of 7/10 for pain in a patient rated numeric scale, (Visual Analog Scale) VAS. The pain was gradual in onset, progressive in nature and aching type around the posterior aspect of the shoulder.

Range of Motion (ROM) assessment of the shoulder was taken in all the planes and axis, summarized in table 1. The end feel was firm. Function was measured with a digital hand grip dynamometer, showed 28 kg on right hand and 36.5 kg for left hand (mean of three trials per hand).

A patient specific functional scale (PSFS) scale was given to the patient and asked to write three patient expected outcomes from the treatment. The three expectations are as follows; pain relief, pain and restriction free movements at the shoulder and playing volleyball as before (narrated in patient language). Followed Shoulder Pain and Disability Index (SPADI ) questionnaire was given to the patient and the total score obtained was 87% (pain score 86% and disability score 87.5%)

Based on the light of physical evaluation and other supporting scales taken, the patient was diagnosed with posterior capsular tightness with mild capsulitis of the right shoulder.

**DESCRIPTION OF TWO WEEK TREATMENT PHASE**

A two week treatment was given to the patient using ‘sleeper stretch’ as the primary exercise. Along with this other traditional therapeutic modalities were also included in the rehabilitation program. The patient was advised to perform sleeper stretch by lying on the side to be stretched (right side), elevating the humerus to 90° on the support surface, then passively internally rotating the humerus with the opposite arm .The stretch was maintained for 30 seconds and then repeated twice with 30 seconds rest between each stretching episodes. This regimen was continued for two weeks, three sets of 10 repetitions, for three sessions a day (Based on FITT principle).

After two weeks, the patient was advised to start with sporting, incorporating exercises continuing in low frequencies and time. A post treatment evaluation was taken after one week of activities and sporting by the patient.

**Post-treatment assessment**

The same physical evaluation methods and scales were reassessed in this phase to check the effectiveness of the treatment given to the patient. Patient reported occasional pain 2/10 on VAS scale. Range of motion (ROM) of the shoulder was assessed using inclinometer (table 1). The grip strength was 34 kg for right hand and 36 kg for left hand. The scores on SPADI was 38.4 (pain score 40% and disability score was 37.5%)

**Table 1: Active Range of Motion of right shoulder joint in phase I and III**

Phase-I-Pre treatment assessment			Phase III-Post treatment assessment	
Sl. No	Movement	AROM (in degrees)	Movement	AROM (in degrees)
1	Flexion	0-173	Flexion	0-175
2	Extension	0-45	Extension	0-45
3	Abduction	0-170	Abduction	0-170
4	Adduction	170-0	Adduction	170-0
5	Internal rotation	0-50	Internal rotation	0-85
6	External rotation	0-80	External rotation	0-85

**PROGNOSIS**

The patient showed significant improvement after two weeks of exercise program and was maintained even after sporting and other activities of daily living. He could play volley ball without pain and restriction in movements. There was a considerable reduction in VAS score. The patient was able to do overhead activities without any interference of pain and restrictions after three weeks.

**DISCUSSION**

Therapeutic interventions and exercises are considered to be an important aspect of shoulder rehabilitation in posterior capsule tightness and its complications. This case report gives an insight about the importance of sleeper stretch in posterior capsular tightness in shoulder joint. The combined results from phase I and phase III evaluation suggest that, sleeper stretches has a direct effect on pain reduction and ROM restriction in patients with posterior capsular tightness. The outcome measures used also supports this. Even though there are established protocols for adhesive capsulitis in rehabilitation, none of them has included sleeper stretches in patient with posterior tightness. hence this report strongly recommend that future protocols needs greater attention to incorporate sleeper stretches in the rehabilitation program for a case with posterior capsular tightness of the shoulder.

**FUTURE DIRECTIONS**

A single case study design was used to assess the effect of a novel stretching technique. It does provide evidence of the beneficial response obtained by use of this technique in a patient affected by posterior capsular tightness of shoulder joint. Generalization of the study cannot be done with a single patient. Future studies with adequate sample size are warranted in this area to fill this out.

**REFERENCES**

1. Volleyball–Hand book of sports medicine and science: Jonathan Reeser, Roald Bahr 2003, 102-108
2. Corrao, M., Kolber, M. and Wilson, S. (2009). Addressing Posterior Shoulder Tightness in the Athletic Population. *Strength and Conditioning Journal*, 31(6), pp.61-65.
3. Harryman, D., Sidles, J., Clark, J., McQuade, K., Gibb, T. and Matsen, F. (1990). Translation of the humeral head on the glenoid with passive glenohumeral motion. *The Journal of Bone & Joint Surgery*, 72(9), pp.1334-13
4. Corrao, M., Kolber, M. and Wilson, S. (2009). Addressing Posterior Shoulder Tightness in the Athletic Population. *Strength and Conditioning Journal*, 31(6), pp.61-65.
5. Laudner, K., Sipes, R. and Wilson, J. (2008). The Acute Effects of Sleeper Stretches on Shoulder Range of Motion. *Journal of Athletic Training*, 43(4), pp.359-363.

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