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A New *Asana* for Treating the Neck & Shoulder Pain with Improved Flexibility

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Abstract

A new therapy for alleviating the neck & shoulder pain instantly based on the principles of yoga *asana* is presented. The method involves a sequence of skeletal movements of the neck and shoulder muscles to relieve any stress developed during the trauma or disturbing experience; excluding injuries causing damage to the tissue. Through prolonged stretch and relaxation, the muscles are freed from the constrained posture to bring about the symptomatic relief to the individual. It is found that the *asana* does not involves staining along the directions that lead to the injury as opposed to the well-known *asanas* such as Utthita Shishosana, *Sasangasana*, and *Dhanurasana*, *Matsyasana*, suggesting a huge potential to explore the pathophysiological benefits of the new *asana* in managing NSPs.

Keywords: *Asana*; Neck & Shoulder Pain

Introduction

Neck/Shoulder Pain (NSP) is a common musculoskeletal disorder that affects a significant population around the worldwide; 50% of US population [1], 20.2 in Norway, 20% in UK, 19% in Sweden and other European countries, 17% in Finland, and 15.1% in Holland [2]. NSP are very common and affects individuals of all age groups; particularly 45-65-year age bracket [3]. NSP is a growing concern as they affect large proportion of occupational illness and disability. They significantly reduce the quality of life, increase discomfort resulting in a decrease in work productivity and absenteeism. The working professional are the most affected with NSPs. For example, a survey on the musculoskeletal complaints of the teachers' reports a higher prevalence for risk for developing discomfort in neck, shoulder (NSP) and low back pain (LBP) by about 69%, 73% and 59% respectively [4]. The NSP and LBP symptoms are equally likely to occur in working groups irrespective of difference in ergonomic and occupational factors [5]. Although the NSP are prone to repeated activities of heavy duty works, strained postures, bending, twisting, and remaining in same posture for long such as the prolonged sitting or standing, inactivity of the skeletal muscles may also contribute to the development of MSDs [6,7]. Adopting such lifestyle can result in a sickness, not only in adults but also children as well. Students (10 to 14yrs) at their elementary school, who spent most of the time on sedentary activities such as watching television, working on computer, and playing videogames, there is a higher of NSP [8]. The objective of the paper is to address the NSPs resulting from a spasm. A new therapy in the form of a yoga *asana* is presented in the study which is beneficial in resolving the musculoskeletal problem of head and neck muscles.

What is neck/ shoulder pain?

NSPs are the '*mechanical*' pains of the neck and shoulder. Neck pains may result from over straining of muscles, tendonitis, nerve compression, cervical radiculopathy (pinched nerves), dislocation due to injuries, trauma and degeneration (cervical spondylosis). Sometimes the NSP may also result from a bad posture such as-working at a desk for long duration without break, working at a computer in '*bent-forward*' posture, straining the neck while working, and hunched over the mobile phones and tablets. Rapid movement of the neck's tendons and ligaments may result in over stretch and tear causing whiplash; for e.g. in motor vehicle accidents. A neck spasm or stiffness of the neck results from an involuntary contraction of the muscles surrounding the neck and shoulder. These may be very inconvenient and oppose the free movement of the neck, shoulders and head. Spasms are triggered when the muscles are overstretched or held in strained position for a long duration. Under such circumstances, the energy reserve of the muscle become limited and runs out of supply to meet the energy requirements of muscle contraction. Since, the storage capacity of ATP is very low, the muscles can only sustain to under contraction for a short duration (a few

seconds). The contraction, without ATP, comes to a standstill. In the absence of the ATP, the myosin heads remain bound to the actin-binding sites of the muscles; resulting in the muscle stiffening [9]. The muscles therefore have to be replenished back with the energy source to ensure that the contraction can be recovered.

Holistic Approach to the NSP

We resort to the techniques of yoga as a holistic approach to address the problem of neck and shoulder pain. Yoga helps in releasing such tensions trapped inside our body and the minds by allowing us to delve into meditation in simultaneous with the yoga *asana*. The yoga *asana* is well known for their intuitive ways of treating various ailments. Yoga practices involve-spiritual, mental and physical dimensions. It improves the physical wellbeing by correcting the posture, increase the flexibility of movement, and help improve the strength of the muscles that are rarely used or neglected. In conjunction with the breathing exercise (*pranayama*), a popular *asana* to restore and rejuvenate the body and mind, helps to improve the lung function and their capacity. The essence of *asanas* lies in their ability to effortlessly or passively increase the circulation of blood to all parts of the body; so as to ensure continuous supply of oxygen and nutrients.

The New *Asana*

We propose a new *asana* as an alternative method for reducing the NSPs arising from muscular spasms. Stresses that are accumulated in the muscles are released through a sequence of stretch exercise of the muscles interconnecting neck and shoulder. According to the Hatha yoga [10-12], the stretch exercise sets up a range of pressures that can increase the pressure due to compression or lower the pressure due to relaxation. Such increases in the pressure differences in the region help stimulate the circulation of blood and recover the muscles from any ischemic condition. We essentially employ the fundamental principles of Hatha yoga which includes:

1. conscious contraction of muscles
2. contraction and relaxation of the thorax during breathing

In the process, we effectively correct any muscular imbalances resulting from poor postures as discussed in the previous sections. The *asana* also helps in reorienting the associated tissues (muscles, tendons and ligaments) to assume a stress-free posture and facilitate the curing process (during damage) Figure 1.

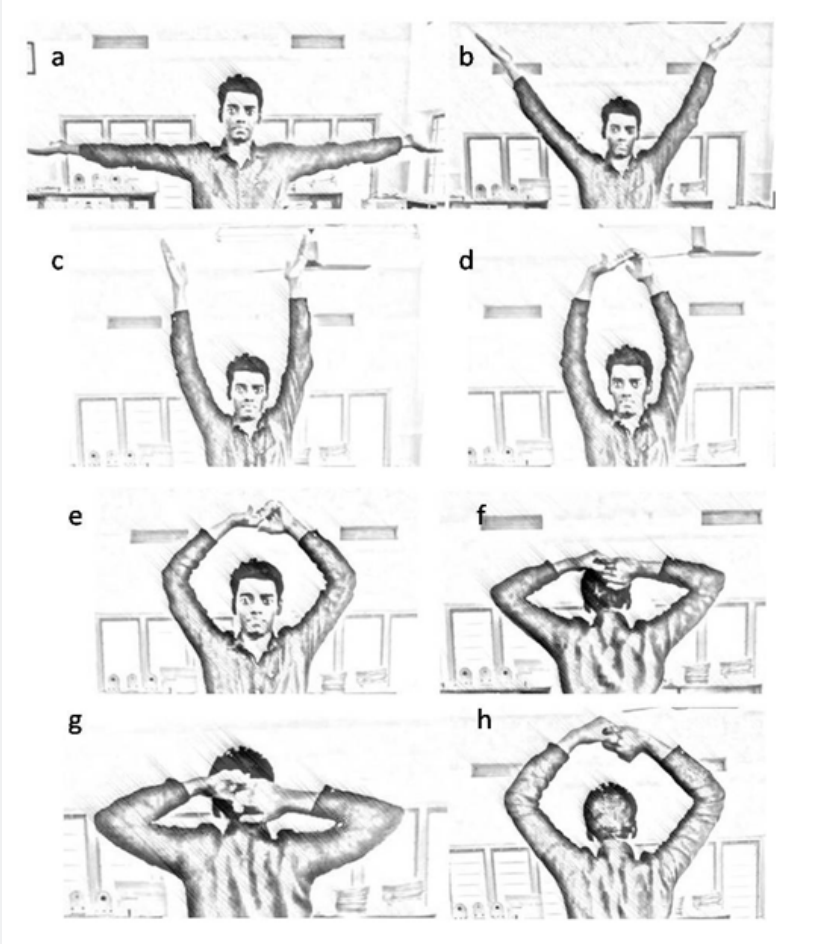

Figure 1: Yoga posture for neck and shoulder pain.

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The underlying basis of the new *asana* is to perform a slow and gradual movement of the shoulder muscles in the following sequence,

1. Stand in an upright posture holding hands (with straight palm) parallel to the ground (Figure 1a).

2. Take a slow breath in simultaneous with the upward movement of the thorax in a way to straighten the backbone (Figure 1b).

a) Breath should be done at full potential to bring awareness of the body movements while assessing the relief benefits.

b) Head may be positioned at an obtuse angle; 120 degrees between the line of sight and the body axis or a comfortable position.

c) Head may move slightly as per the convenience.

d) Ensure that the shoulder and neck muscles are free from any tension.

3. The breathing process and the head movement can go in parallel.

4. Move the hands circumferentially and along the coronal plane with the palm facing the direction of movement.

5. As the fingers meet at the tip, interlock them to allow for next sequence.

a) The individual may adopt a different way of latching the finger that suits well.

6. Perform simultaneous movement of the elbows following the exertion as shown in Figure 1d- 1i.

a) During the posture as indicated in Figure 1j, the individual may allow for the straining (lasting few seconds) of the NSP muscles that suits well for the therapy.

b) As the palm reaches the level of head, the individual would be able to feel the shoulder muscles.

c) Ensure that the muscles and the joints are able to perform the movement at ease.

7. Repeat the step 6 for few cycles (e.g. five times).

It is suggestive of avoiding the exercise in case of individuals suffering from arthritis of the cervical (such as the cervical spondylosis), and any injury involving the neck and shoulder musculoskeletal system. The individual, however, may adopt the *asana* only to a extent that it does not leads to generation of higher strains.

Table 1: Comparison with alternative medications.

Treatment modality	Difficulty during use	Straining of NSP muscles	Abrupt forces	Side effects	Effectiveness
Our technique	No	Minor	No	No	Instant
Yoga *asana* (Utthita Shishosana, Sasang*asana*, Dhanur*asana*, Matsy*asana*)	Minor	Minor	No	No	May be
Physiotherapy	May be	Yes	No	May be	May be
Stretch exercise	Yes	Yes	No	May be	Depends on the posture
Chiropractic	Yes	Yes	Yes	Minor	Not always effective

Conclusion

In this paper we have introduced a new method for alleviating the NSPs that not only reduces the pain instantly, but also increase the flexibility of motion through easing the stiffened muscles. One major advantages of the technique is to eliminate the constrained motion of the neck muscle; especially the side wide and forward/backward head movement. While in contrast to the alternative medications including the yoga *asanas* such as *Utthita Shishosana, Sasangasana, Dhanurasana,* and *Matsyasana*, it is quite difficult to engage any of the neck muscles and participate in any kind of stretch exercise that are administered as part of the yoga or any physiotherapy techniques. During the condition, there is limited range of motion of the neck/head muscles available for physiotherapy. As detailed in the Table 1, our *asana* is more appropriate in reducing the pain while providing symptomatic relief in comparison to alternative methods. Although there is minor staining of the neck/head muscles involved in the *asana*, such movement, however, makes use of the available degrees of motion of the muscles without interfering with the constrained movement. We speculate that such movement (lifting of arms up and down-ward) allows for smoothing of the musculoskeletal system of the neck and shoulder and releases any concentrated loads, if any, while allowing for reorientation of the NSP muscles to recover back Table 1.

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