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CASE REPORT

The Use of Gong Mobilization for a Subject with Neck Pain During E-Learning in COVID-19: Case Report

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Author`s Contribution

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Summary

A 22-year-old university student who presented at a private hospital in Sargodha on October 2020 with complaint of having neck pain. He complained discomfort after using smartphone for a long time, stiffness on head turning and he also felt localized sharp, stabbing sort of pain in lower neck area which is increased by sustained posture. He reported headache after prolong use of gadgets. Objective findings included decreased cervical active range of motion (AROM) and tight upper trapezius and negative distraction, spurling, extension rotation tests and bakody sign. During inspection we suspect forward head posture by visualizing level of ear and acromion process of shoulder. It was evaluated by Craniovertebral angle using image J software. The patient was managed by Gong mobilization in terms of pain, range of motion. The use of Gong mobilization for the treatment of neck discomfort brought on by forward head posture was innovative in this clinical investigation.

Keywords: Neck Pain, Range of Motion

Introduction

For teaching and learning purpose electronic technology can be used and called as E-learning, which involves interaction with teachers and learners. It is easy and effective way of communication with student. It gives flexibility to the learner in today's fast dynamic world. [1] The term of 'Text Neck' is given by Fishman. Basically, it is a kind of overuse syndrome or repetitive stress injury that results from forward and downward flexion of head during prolong use of mobile phone. More than 4 billion people in the world are active users of mobile phones. Texting is one of the most frequently used communication media. Almost half of mobile phone users are younger than 25 years and keep their cell phones with them for about 22 hours a day.[2]

Text neck syndrome is the result of excessive use of digital tasks on mobile phones. It produces many harmful symptoms in areas of head, neck, shoulder, and upper back which are destructive in nature. While focusing on screens of smartphones, people often tend to look down which creates unnecessary forces on the spine. With an increase in neck flexion angle, these forces rise.[3] At 15 degrees of forward head tilt, a force of about 27 pounds is applied. This force increases to 40 pounds at 30 degrees, 49 pounds at 45 degrees, and 60 pounds at 60 degrees. The prediction of model was unreliable at 90 º. Serious permanent damage can be the outcome if left untreated and is pretty similar to cumulative stress disorder.[3, 4]

A smartphone is the most popular device used among young adults. With the advancement in mobile technology, people are spending more time on handheld devices stated by Priyal P. Continued neck flexion while using these modern electric gadgets result in the "Text neck syndrome" or "Turtleneck posture". This disease, which can affect millions of people worldwide, is emerging as one of the biggest health issues. Most of the persons look down while holding their arms for reading the screen of smartphones. Anterior and posterior curves of neck and upper back increase to maintain the balance that places excessive strain on the musculoskeletal components of this region. One of the frequently observed bad

postures that is connected to chronic musculoskeletal discomfort is the forward head..[5]

In this instead of patient active movement, therapist initiate passive movement using weight, gravity, fixation and acceleration. It helps to heal physical pain as well as distract the mind from stress. It's effective to reduce pain and improves range of motion. [6] Patient was given sustained glide along the facet joint and simultaneously physiological movement to end range in such a way that patient's neck posture remained neutral passively to induce normal cervical motion.[7]

The major goal of this case report is to determine the positive/negative effect of Gong mobilisation as a primary therapy intervention in neck pain patient with forward head posture. Case report is the part of main project which ethical approval was taken from the ethical review committee (REC/RCR&AHS/20/0105)

Methodology

A 22-year-old male university student was seen in the physical therapy OPD of a private hospital in Sargodha in October 2020 presented with complaint of neck pain after using smartphone for long time. The intensity of the pain increased after movement especially in head turning and at night pain aggravate while sleeping. A month ago, he had experienced neck pain but thepain intensity and duration was comparatively less. A general practitioner used muscle relaxants and painkillers to address the patient's pain, and in the past, the patient had an excellent response to the treatment. On subjective examination, pain on Numeric pain rating scale was 8/10. During inspection it suspected to be forward head posture by visualizing level of ear and acromion process of shoulder. It was further evaluated by Cranio-vertebral angle using image J software. There was decreased cervical active range of motion (AROM) and tight upper trapezius checked passively. Physical tests (Distraction test, spurling test, bakody sign and extension rotation test) were performed. All test was found to be negative and sensation, myotomal strength & reflexes were intact.

Heating pads were applied before Gong Mobilization to relax muscles.[8] In Gong's Mobilization patient was given sustained glide along the facet joint for 10 second and simultaneously physiological movement to end range in such a way that patient's neck posture remained neutral passively to induce normal cervical motion. Therapist stands on the side of patient in such a way that patient's head was in contact with therapist chest. Therapist one hand on the back of neck and glide along the facet joint with the thumb placed on the spinous process of the vertebra below the segment and with other hand wrapped around the cheeks and stabilized the upper vertebra to occiput and then passively retracted the head and extend the neck concurrent with glide.[7, 9]10-15 repetitions for 3 weeks, 3 sessions on alternate days in a week.[9] Readings mentioned below were taken at baseline and after 3 weeks and there was no follow up. Cervical Range of Motion (ROM), for pain Numeric Pain Rating Scale readings NPRS and for posture Cranio-vertebral Angle CVA were taken after three weeks.

Results

There was improvement in ROM, NPRS and CVA values. Table I stated the before and after treatment changes, ROM and posture in degrees. Prior to writing the case report written informed consent was taken for publication.

Discussion

The novelty of this case report was the use of Gong mobilization as a primary intervention for the management of neck pain due to forward head posture. Physical tests like distraction test, spurling test, bakody sign and extension rotation test were negative. Moreover, craniovertebral angle were checked using image j software and that showed patient presented with forward head posture.

Figure 1: posture before and after treatment
Consent was taken before clicking photographs

Table I: Improvements in range of motion, posture and pain intensity.

	NPRS	CVA	Flexion	Extension	Side bending Right	Side bending Left	Rotation Right	Rotation Left
Baseline	8/10	42.50°	60°	40°	35°	35°	50°	50°
After 3 weeks	2/10	54.70°	75°	50°	45°	40°	70°	70°

Figure 2: Gong Mobilization

Previous studies concluded that craniovertebral angle in which horizontal line were drawn from C7 spinous process and other line drawn from the mid-point of the tragus of ear and angle were measured electronically, was more accurate method to diagnose forward head posture than other methods.[10, 11] In this study forward head posture was also measured by craniovertebral angle electronically using image j software.

Previous studies illustrated that Gong mobilization was effective as compared to Sustained natural apophyseal glide SNAG in patients with decreased cervical lordosis and cervical range of motion and increased forward head posture.[7] another studies suggested that cervical mobilization in combination with upper thoracic mobilization were effective in the improvement of forward head posture for patients with neck pain.[12] Our study illustrated that Gong mobilization showed improvement in terms of pain, range of motion and forward head posture**.** A study conducted by harsulkar stated that by using Gong's mobilization for the treatment plan of cervical spondylosis was helpful to eliminate pain and disability and increasing range of motion. [13]

Conclusion

Gong mobilization was well tolerated by this subject, demonstrate that there are improvements in pain, motion and posture, without side effects. Promising results of Gong mobilization for neck pain due to postural discomfort were shown in terms of decrease in pain and improvements in motion of neck and forward head posture. As musculoskeletal disorder is diagnosed only on the bases of physical examination hence Clinical practitioners also take postural assessment in consideration while making diagnosis.

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