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Case Report

A CASE STUDY ON THE IMPACT OF CRANIO-CERVICAL TRAINING ON MYOFACIAL PAIN SYNDROME.

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Abstract

Background and Goals: Trigger points (TPs) located in the muscles or fascia are the source of myofascial pain syndrome (MPS), a syndrome that manifests as either acute or chronic regional pain. Local points known as TPs exhibit high levels of irritation, sensitivity to finger pressure, and characteristic referred pain. This case study aims to evaluate the impact of cranio-cervical training on a patient with cervical myofascial pain syndrome's neck dysfunction, deep cervical muscular endurance, and pressure pain threshold.
Case description: A 36 year old female who was diagnosed with myofascial pain syndrome. She received cranio cervical training, a low load endurance exercises in order to train and/or to regain muscle control of the cervicoscapular and craniocervical regions. The patient received the treatment program for 10 to 15 minutes. The frequency of treatment is five days in a week for a period of 3 weeks.
Outcome: The outcome measures were neck disability index, pressure pain threshold and deep cervical endurance test, which were measured prior to treatment and at the end of third week.
Conclusion: The craniocervical training programme for a patient with myofascial pain syndrome found to be effective in reducing neck disability, improving the pressure pain threshold and deep cervical flexor muscle endurance

Keywords: *The Deep Cervical Endurance Test, Myofascial Pain Syndrome, Cranio Cervical Training, Neck Disability Index, and Pressure Pain Threshold*

INTRODUCTION

Nearly 95% of persons with chronic pain disorders have myofascial pain syndrome, one of the primary musculoskeletal pain diseases that is frequently found in pain management centers [1, 2, 3]. Trigger points (TPs) in the muscles or fascia are the source of this syndrome, which manifests as either acute or persistent regional pain. [2,4,5,6,7,8] Local points known as TPs exhibit high levels of irritation, sensitivity to finger pressure, and characteristic referred pain. This syndrome is frequently accompanied by autonomic symptoms, exhaustion, anxiety, and sadness [2,4].

Although the exact cause of TPs formation is still unknown, research has suggested that the pathogenesis is caused by muscular tissue overload and damage, which causes localized fibers to shorten involuntarily [9, 10]. It is commonly disregarded as the cause of cervicogenic and temporal headaches. The primary cause of tension neck pain was the upper trapezius trigger point, which also frequently refers pain to the mastoid process along with the posterolateral portion of the neck. Tension headaches occur when discomfort from myofascial trigger points in other muscles, including the sternocleidomastoid, suboccipital, and temporalis, overlaps [2]. Additionally, research has shown that myofascial pain sufferers' deep neck flexor strength and endurance were noticeably lower than those of age-matched controls [11]. Trigger point-affected muscles may not be able to properly stretch or shorten, which results in decreased strength and endurance as well as an increased susceptibility to fatigue [12].There are several treatment options that target the trigger points, including laser, trigger point injection, spray and stretch method, dry needling, ultrasound, TENS, muscle energy technique (MET), myofascial release therapy (MRT), positional release therapy (PRT), also known as strain counter

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strain technique, trigger point pressure release (TrPPR)/ ischemic compression (direct inhibitory pressure), and integrated neuromuscular inhibitory technique (INIT) [13,14]. Furthermore, it has been discovered that strengthening the upper cervical flexors can help patients with upper trapezius trigger points have less discomfort and incapacity [15]. While craniocervical training is done with low load for extended periods of time, upper cervical flexor strengthening exercises are done with high load and fewer repetitions in order to build muscular strength and power.

CASE DESCRIPTION: SYSTEM REVIEW AND PATIENT HISTORY

A right-handed woman of 36 years old complained of lateral and posterior neck ache. She said that her pain was constant and that it got worse when she was doing secretarial work in her office. These symptoms, along with any other skeletal or muscular disorders, were not present in the past. The patient had no recent, remarkable weight increase or reduction, and seemed to be within appropriate weight ranges. She had no past history of blunt force injuries or trauma that would have contributed to the beginning of her symptoms.The patient reported that she had been working at her desk for extended periods of time at her office when her symptoms started more than a month ago. She stated that over the course of the previous month, her symptoms had gotten progressively worse. To rule out any potential pathological or systemic causes, the patient first saw her family doctor. Numerous blood and urine tests were conducted, and according to reports, each one came back within normal ranges.

After the doctor determined that she had myofascial pain syndrome, a physiotherapist was recommended. She has been receiving treatment at Punjabi University's physiotherapy outpatient department ever since. The patient gave their informed consent before the case study could begin.

Examination: Bilateral extended and rounded shoulders, as well as forward head posture, were shown by the postural examination. Cervical ranges of motion showed less flexion, with 20% less rotation on the right and left and 20% less flexion on the side. It was determined that the manual muscle testing of the deep cervical flexor muscles was fair. [16] It was also clear that the bilateral pectoralis major and minor muscles as well as the suboccipital muscles were less flexible. Both the upper and lower limbs' neurological evaluations were unremarkable; that is, the sensory response (pin prick and gentle touch) was normal, and the deep tendon reflexes were 2+ (symmetric).

Treatment: To train and/or restore muscle control of the cervicoscapular and craniocervical regions, the Craniocervical Training Programme (CTP) was created using low-load endurance exercises [23]. Using a latex band (Thera-Band®, Resistive Exercise Systems; blue color-coded amount of increasing resistance), craniocervical flexion exercises were conducted to treat the deficit in neck flexor synergy reported in cervicogenic headache and other neck pain disorders [24,25]. One side of the 150-cm latex band was fastened slightly above the horizontal, while the other side was placed at the patient's neck's craniocervical region. The band was employed in a circular fashion. The band's resistance was applied in a way that helped the longus colli muscles [26].

RESULTS

The patient had treatment for three weeks at a rate of five sessions per week. Prior to treatment, the patient's Neck Disability Index score was 60%, indicating moderate disability; after treatment, the score dropped to 20%, indicating modest disability. After the treatment plan, the deep neck flexor endurance test time was extended from 14 to 24 seconds. Prior to beginning treatment, the pressure pain threshold for the levator scapulae, suboccipital, and upper trapezius muscles was 0.90, 1.10, and 0.80 kg/cm2, respectively; following treatment, it increased to 1.32, 1.24, and 1.14 kg/cm2, respectively.

TALK

This study demonstrated that using a cranio cervical training program for patients with myofascial pain syndrome has decreased neck impairment in addition to improving deep cervical muscle endurance and pressure pain threshold. This is explained by the fact that during craniocervical exercises, the upper cervical spine experiences a mobilizing impact that modifies pain perception and so lessens pain. [27, 28, 29, 30, 31, 32] Additionally, a particular craniocervical training regimen placed more emphasis on motor control than muscle strength. [33]. Decreased deep cervical flexor endurance causes muscles to become more fatiguable, which impairs focus and productivity and has long-term consequences that eventually result in forward head posture or increased cervical lordosis. As a result, neck endurance training not only lessens pain but also enhances the patient's capacity to read, drive, provide personnel care, sleep soundly, participate in leisure activities, and correct bad posture. Therefore, in this instance, cranio cervical training had positive short-term benefits, but no long-term effects were noted.

It is necessary to conduct more study on the assessment of the long-term effects of the cranio-cervical training program in individuals suffering from myofascial pain syndrome.

FINAL RESULTS

The Craniocervical Training Program was found to be effective in enhancing deep cervical flexor muscle endurance and lowering myofascial pain syndrome symptoms. It was also straightforward and easy to understand.

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