



Effect of Muscle Energy Technique in Patient with Chronic Neck Pain- A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Introduction: Chronic neck pain might lead to a change in muscle tissue fibres. Neck discomfort is a serious and prevalent sickness. It is common in the general population, and it frequently results in severe impairment. These alterations have an impact on the cervical spine's capacity to govern 3-D movement efficiently. A range of manual therapy approaches are available to assist relieve pain and impairment while also cervical spine range of motion enhancement and everyday mobility. More evidence for Muscle Energy Technique (MET) in treating such a condition was found. This case report describes muscular energy technique's effect on a patient who has been suffering from neck pain for a long time.

Case Presentation: At the previous three months, a 27-year-old female accountant in a hospital with extended periods of sitting while working on a computer presented to our facility with neck pain. Increase in pain with looking up.

Discussion: The therapy was well embraced through this patient to muscle energy technique resulting in a high degree of flexibility in the cervical spine, reduce pain and improves flexibility and strength.

Conclusion: Physiotherapy has a significant effect Pain, strength, and range of motion are all factors to consider. The findings of this case study indicate that a specific muscle energy technique It's possible that a routine will help to alleviate the problem of neck pain, improves strength and functional ability.

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1. INTRODUCTION

Neck ache is a painful condition that many people they have had at least once in their life [1]. Neck discomfort is a prevalent cause of impairment in most patients: it is linked to daily activity limits, decreased work productivity, and a loss in quality of life [2,3]. Because of the physical and psychological symptoms that are associated with neck discomfort, it has a socioeconomic impact [4-11]. Around 80% of the broad adult demographics experiences neck discomfort at some point in their lives, with 30–50% experiencing it on a yearly basis [2,12]. Neck pain can also be classified as mechanical or neuropathic, depending on whether it is ended up causing by a herniated disc, osteophyte, or spinal stenosis, or if it is caused by nerve root irritation ended up causing by a herniated disc, osteophyte, or spinal stenosis [13,14]. According to epidemiology data from all across the world, the Neck pain is more common after a year of discomfort ranges from 17 to 75 percent, with an estimated prevalence of 40 percent, with a later stage predominance of 10 to 20% [1]. The great majority of persons who suffer from neck discomfort do not receive total relief from their symptoms, resulting in a chronic and recurring condition. Between 50 and 85 percent of persons who have had neck pain at some time in their life report it returns 1 to 5 years later [15]. In today's day and age, chronic neck pain is becoming ever more frequent [16]. Physiotherapists or manual therapists are referred to about 59 percent of individuals with chronic neck discomfort. The costs associated with treating neck pain are significant [10]. Neck discomfort is a multimodal condition that comprises physical, emotional, cognitive, and social elements [17]. Neck pain is rarely caused by a significant medical condition (less than 1% of the time) [18]. Most of the time, the pathoanatomical cause of neck discomfort is unknown, and the agony is classified as physical or non-specific [19]. As a result, The health history and physical examination of the patient are the most important aspects of his or her care for initial steps in determining the NP type [13]. A radiograph showing the cervical spine in its natural state may then be helpful in determining the diagnosis [20]. Normal cervical lordosis is generally lost on X-ray, which explains cervical muscular spasm [20]. Ultrasonography is used to measure upper trapezius and muscle pathologies [21]. Magnetic Resonance Imaging (MRI) is a type of imaging that may be used investigate

soft tissue problems, and computed tomography (CT) can be used to assess bone health [22]. MET is an In an active manual technique, the physiotherapist does not regulate corrective force rehabilitative domain [23]. In fact, the patient should have the ability to create varying-intensity directed voluntary contractions [24]. As a result, It's a type of manual therapy for articulations of any kind with a limited range of motion. By inducing repetitive muscular movements, this procedure can ease muscle restriction or weakness, as well as lessen local oedema [25]. Through deep tissue stimulation and localised vasodilation, MET suppresses sympathetic tone [26]. After that, the patient can perform an isometric contraction and a post-isometric relaxation on the contracted muscle. Muscle constriction by a reciprocal agonist is also induced by MET. A physiological neuro reaction organ of the Golgi tendon causes this occurrence. Furthermore, when a therapist's pressure is too strong or partly corresponds as a result of a patient's efforts, by generating movement, a patient can cause others to move. an isotonic eccentric or concentric contraction [27]. As a result, MET stands for "hands-on" treatment that involves Muscles are stretched, strengthened, and relaxed. It is a non-specific neck pain rehabilitative therapy approach aimed at restoring normal joint mobility and alleviating pain [28]. The aim of the case report is to find the effectiveness of muscle energy technique in chronic neck pain.

2. CASE REPORT

A 27-year-old female with weight-64, height-5.5 and bmi-10.7kg/m² work as an accountant in an hospital with long duration (8-10 hours) of sitting while working on computer presented to our facility with complain in the previous three months of neck discomfort. The neck discomfort was excruciating and became worse by movement. The onset of pain was gradual. Pain gets aggravated when she looks down or up. She complains of severe pain in looking up and complains disturbed sleep due to pain. On observation patient was seen sitting position with rounded shoulder and forward neck. The Neck range of motion of the patient was considerably reduced on physical examination, and bilateral discomfort was evident with reduced strength. Patient was not treated for any chronic disease prior to visit.

2.1 Clinical Findings

The patient was seen sitting with a rounder shoulder and forward neck on observations. On physical examination there was decrease Cervical flexion, extension, rotation, and lateral flexion range of motion. Tightness was present on upper trapezius muscle with grade 2 tenderness. Strength was assessed through oxford muscle strength grading system (table 3). Range of motion was assessed three times and best was taken (Table2). There was no neurological signs and symptoms present.

2.2 Therapeutic Management

1.Reduce pain

2.Enhancesm flexibility

3.Progresses range of motion

4.Improves strength

2.3 Management

The therapist will stand behind the subject. The patient will get 3-5 repeats 7-10 seconds of post-isometric relaxation with a 30-50 percent isometric contraction of the muscle to be stretched, followed by a 5-second rest interval, and then a stretch lasting 10-60 seconds. For four weeks, there will be five sessions per week. The impact of the examination before and after will then be examined.

Table 1. Visual analogue scale

On Rest	Muscle energy technique
Pre-test (1 st day)	9
Post-test (last day of 4 th week)	4

Table 2. Range of motion

Joint	Pretreatment (1 st day)	Post treatment (last day of 4 th week)
Cervical flexion	35 ⁰	55 ⁰
Cervical Extension	40 ⁰	70 ⁰
Cervical lateral Flexion	20 ⁰	40 ⁰
Cervical rotation	50 ⁰	75 ⁰

Table 3. Manual muscle testing

Cervical flexors	Muscle Energy Technique
Pre-test (1 st day)	3
Post-test (last day of 4 th week)	4+

Cervical extensor	Muscle Energy Technique
Pre-test (1 st day)	3
Post-test (last day of 4 th week)	4+

Table 4. Neck disability index

	Muscle Energy Technique
Pre-test (1 st day)	54
Post-test (last day of 4 th week)	15

3. DISCUSSION

The objective of this case study was to demonstrate the consequences of a specific action muscle energy approach on neck discomfort, pain-related motion anxiousness and dizziness in a patient who had begun to experience symptoms following 3 months of bed rest. Tension-type headache (TTH) and migraine are the most common main headaches globally. These headaches are commonly accompanied with neck discomfort [29]. The clinical hypothesis was that this patient's pain, dizziness, restricted range of motion, and restrictions in activity were caused by alterations in the Muscle Energy Technique's structure and function as a result of his prolonged bed rest. Through patient education, the initial intervention attempted to reduce her fear avoidance. The major treatments that followed were targeted at gradually restoring local motor control function. We believe that this strategy played a role in her lowered fear aversion. The patient stated that her ultimate aim was to be able to engage in all of her previous every day and professional activities sports without discomfort or dizziness. Within two weeks of starting treatment, all objective measures enhanced. The patient wasn't any more disoriented or discomfort after four weeks. According to the conclusions of this case study, it is possible to conclude that a specific muscular energy technique program is helpful for neck pain and dizziness following an extended term of bed rest [30].

3.1 Home Programme

Hot fermentation, stretching of the muscle and strengthening.

4. CONCLUSION

The findings of this case study show that a MET regiment may be effective in training deep cervical muscle to decrease neck pain and dizziness following a lengthy duration of bed rest. The steps of MET are as follows:

- 1-Joint placement isolates the target joint and/or muscle barrier, usually to a pathologic barrier.
- 2-The patient then contracts his or her muscles in a certain direction, usually away from the restriction, for a set amount of time against provider-applied counterforce. Traditionally, the amount of force created by the patient should be the utmost amount that both the patient and the practitioner can endure comfortably.

3-The constricted muscle relaxes.

4-The patient's anatomy is passively moving toward a new pathogenic barrier.

A standardised physical examination should be performed after a patient's neck has been immobilised to determine the effectiveness of stabilising muscles.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Patient's consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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