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Effect of Mobilization and Myofascial Release (MFR) Technique on Cervicogenic Headache: Case Study

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Abstract

Background: CGH, in its clinically identifiable form, is distinguished by unilaterality/unilateral predominance of head pain, without side alternation. The unilaterality is distinguished by the frequent/regular involvement of the opposing side, particularly when the headache is severe. [10]. While MFR is being utilized to treat a wide range of illnesses, its effectiveness has not been well-studied. The outcome of investigation studies demonstrated the efficacious significance of both MFR and traditional therapeutic exercise routine for CGH.[12] According to Maitland et al. [16], one of the most popular manual therapy methods for treating cervical spine pain is posteroanterior (PA) spinal mobilization [14, 15]. It entails utilizing the thumbs or, less frequently, the heel of the hand to apply an oscillatory manual force for a duration of around 30 seconds on the spinous or transverse process of a cervical vertebra [16].

Objective: To align cervical vertebrae in proper anatomical position and to reduce pain with movement.

Case description: A patient was a 25 years old female; she came to physiotherapy OPD [Rama hospital and research center]. With complaints of having unilateral headache pain from 5 months that starts in neck before visiting our OPD. Her pain increases with neck movements. And also had limitations in movements.

Intervention – Total 3 weeks physiotherapy protocol was given to patient in which we provided mobilization and myofascial release technique to align cervical vertebrae in anatomical position and reduce pain.

Outcomes: the following 3 weeks physiotherapy protocol improved cervical bone alignment and reduced pain. Patient was able to perform cervical movement without pain. she was able to do her work without discomfort.

Conclusion: This case study is consistent with studies that demonstrates mobilization and MFR techniques are effective combinations of therapies for people with Cervicogenic headache. After completing treatment plan, there was excellent improvement in alignment and pain in Cervicogenic headache.

Keywords: Cervicogenic headache, headache, misalignment, pain, mobilization, myofascial release technique

INTRODUCTION

It was merely a migraine, then onset of cluster headache after that Tension headache appeared [1, 2, 3]. It

was shown that some headache is caused by prolonged skeletal muscle contractions in the area of the face, scalp, and neck. The clinical picture of this type of headache was not described. [4,5] Whose pain might not originate in this network of nerves that supply the posterior scalp from the cervical spine? It was unrealistic to anticipate any kind of compelling exactitude from these conjectures. These early attempts might have had some proper, clinical features. With the onset of Barre's syndrome sympathies cervical posterior, another phase came. [6] The primary symptom of an occipital headache was dizziness. Additional information about migraine cervical was provided.[7] In the western culture, voicing the view that a headache could have its genesis in the cervical region would likely elicit harsh criticism. This hypothesis was introduced at the First World Congress of Headache, [8] when it was observed that the phrase "cervicogenic headache," which was created at the time, was met with deep skepticisms. The strongest evidence that the idea of CEH was not at all embraced at the time is the strong, tenacious, and prolonged opposition [9].

The approach might reflect another attempt to acquire acknowledgment for CEH as a different headache. CEH, in its clinically identifiable form, is distinguished by unilaterality/unilateral predominance of head pain, without side alternation. The unilaterality is distinguished by the frequent/regular involvement of the opposing side, particularly when the headache is severe. Unfortunately, investigators commonly mix up this circumstance with an appropriate bilaterality. Furthermore, CEH is characterized by the following: reduced range of motion (ROM) in the neck; mechanical perceptibility of attacks/exacerbations, either by prolonged, awkward neck positioning or by external pressure against circumscribed, hypersensitive areas (e.g., tendon insertions), ipsilaterally in the occipital area (the awkward neck position "method" is the more reliable of the two methods for generating heavy attacks); and ipsilateral neck pain that frequently. Pain exacerbations typically begin in the neck/occipital area and extend to the forehead, with forehead pain being as severe as, if not more so than, posterior pain [10].

The following are the diagnostic criteria for CEH was unilaterality of pain, reduction in neck movement, ipsilateral shoulder discomfort, ipsilateral arm discomfort; and awkward neck positions or external pressure against sensitive occipital structures, which mechanically precipitate exacerbations/attacks.[10]Additionally, there are the characteristics of a cervical abnormality (cervicogenic factor), a summation factor made up of five independent components [11]that are lack of range of motion, soreness in the shoulder area during the skin-roll test, tendon insertions in the occipital area, musculus splenius/upper musculus trapezius area; and cervical facet joint tenderness.[11]

While MFR is being utilized to treat a wide range of illnesses, its effectiveness has not been well-studied. The outcome of investigation studies demonstrated the efficacious significance of both MFR and traditional therapeutic exercise routine for CeH. Both of the applied therapy approaches had positive impacts on the frequency and intensity of headaches. The length of the headache was not significantly reduced by using MFR alone. According to the study's findings, both the Ex's and MFR groups' patient of the spinous and transverse processes of their upper cervical joints significantly improved after ten therapy sessions as compared to their pre-treatment scores.[12]

Because the myofascial dysfunction in the upper cervical area has not received much attention in research looking at manual therapy in patients with CeH, and most of them have solely addressed joint procedures or exercise. After Direct and Indirect MFR, Ajimsha et al. showed positive results in 63 patients with tension-type headaches. [13]

According to Maitland et al. [16], one of the most popular manual therapy methods for treating cervical spine pain is posteroanterior (PA) spinal mobilization [14, 15]. It entails utilizing the thumbs or, less

frequently, the heel of the hand to apply an oscillatory manual force for a duration of around 30 seconds on the spinous or transverse process of a cervical vertebra [16]. This is not the same as manipulation, which uses a single thrusting force at rapid speed. When doing PA mobilizations, therapists choose one of the four degrees as described by Maitland et al. or grieve [17]. They choose the grade according on how they assess the patient's spinal stiffness and the goal of the treatment. The grades of mobilization are used to communicate the specific technique utilized by therapists and to determine the dosage of manual therapy used for treatment. The patients with sub-acute and chronic mechanical neck problems, whether or not they also had headaches, responded well to mobilization and/or manipulation when combined with exercise. [18] Physical therapy schools around the globe often include instruction in the utilization of these methods [19]. Research found that 99% of the programs assessed incorporated spinal mobilization.[20] Although spinal mobilization is frequently used to treat individuals with neck discomfort, there is insufficient data to determine the optimal doses of mobilization, including the amount of force used and the length of therapy. Furthermore, different therapists could employ different pressures for a same degree of mobilization. [21, 22], however the cervical spine has not received enough research attention. It is possible that excessive power applied to the neck might cause damage to anatomical structures like the vertebral artery. This is frequently brought up in reference to neck manipulation techniques [23, 24], but mobilization is typically seen as having little to no danger.While there aren't many documented examples of severe damage in the literature, there are a lot of reports of unfavorable post-mobilization symptoms (such nausea and dizziness) that may be connected to vertebral artery impairment. It is uncertain, nonetheless, if cervical mobilization forces may be connected to these symptoms. [26, 27].

Methodology

Case description

A patient was a 25 years old female, height 5.2ft, weight 49 kg, she came to physiotherapy OPD [Rama hospital and research center].

With complaints of having unilateral headache pain from 1 years that starts in neck before visiting our OPD. Her pain increases with neck movements. And also had limitations in movements.

Physical assessment

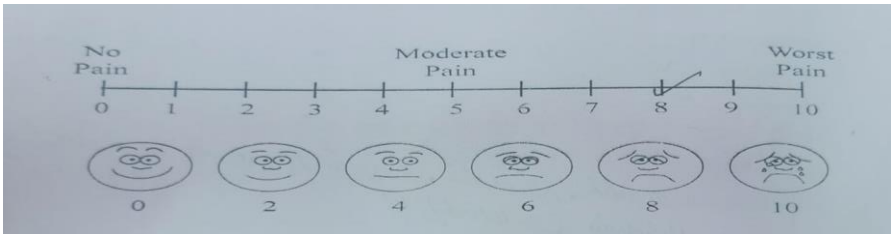
Rom assessment- limited ROM with pain during movements.

Had trigger points in posterior compartment of neck muscles.

Her blood pressure was 128/82 mm Hg.

NPRS- (Numeric pain rating scale)

It is a segmented numeric version of visual analog scale in which a respondent selects a whole number (0 – 10 integers) that best reflects the intensity of his/her pain. Its positive point is takes less than 1 minute to complete and easy to administer and score.



NPRS score was 8 before treatment protocol.

CFRT (cervical flexion rotation test):

Position of patient – Patient in Supine lying position.

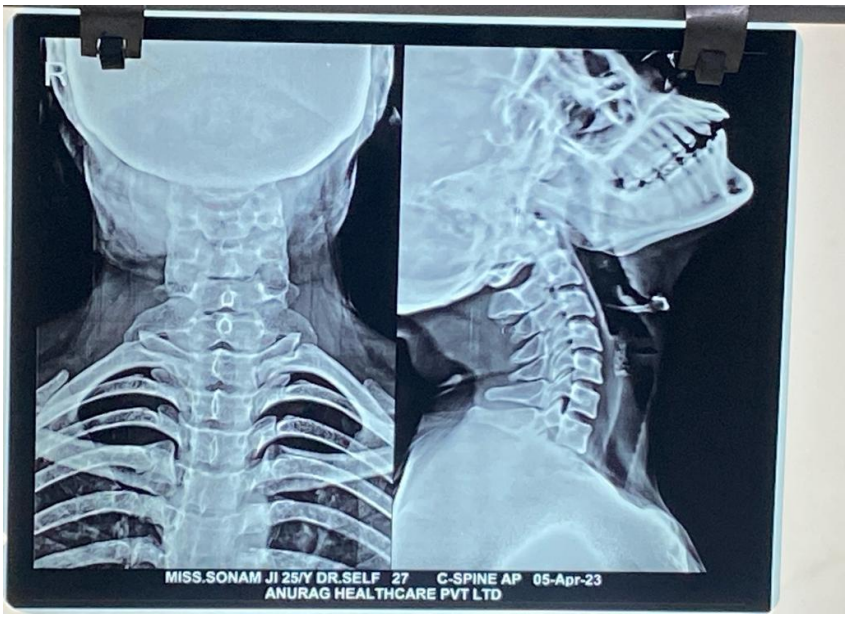
Position of therapist – walk standing position.

Procedure - During this test, the neck of patient is passively held in end flexion. The therapist rotates the neck to each side until they feel resistance or until they patient says they are in pain. At this end point, the therapist makes a visual estimate of the rotating range and says on which side the CFRT was positive or negative.

Positive finding – CFRT was found positive.

Radiological findings-

Checking alignments of cervical vertebrae.



Misalignment was found.

Treatment protocol

The treatment was given for 3 weeks in 3 phases. Each phase had program of 7 days. Each program had 5 settings with 2 days gap between each phase.

Phase 1 –

Position of patient – prone lying.
Therapist position – walk standing in front of patient.

MFR technique – focusing of posterior compartment of neck muscles.
10 mins each set
Mobilization - Grade 1oscillatory mobilization
Glides given at transverse process (C2 to C6)
20 glides / set

Phase 2 –

Position of patient – prone lying
Therapist position – walk standing in front of patient

MFR technique – focusing of posterior compartment of neck muscles.
10 mins each set

Mobilization - Grade 2 oscillatory mobilization
Glides given at transverse process (C2 to C6)
20 glides /set

Phase 3 –

Position of patient – prone lying
Therapist position – walk standing in front of patient

MFR technique – focusing of posterior compartment of neck muscles.
10 mins each set

Mobilization – Grade 3 oscillatory mobilization
Glides given at transverse process (C2 to C6)
30 glides /set at each vertebra

Time Protocol	**Phase 1**	**Phase 2**	**Phase 3**
MFR technique	10 min set	10 min set	10 min set
Mobilization	Grade 1oscillatory mobilization	Grade 2 oscillatory mobilization	Grade 3 oscillatory mobilization

	Glides given at each transverse process 30 glides / set	Glides given at each transverse process 30glides /set	Glides given at each transverse process 30 glides /set

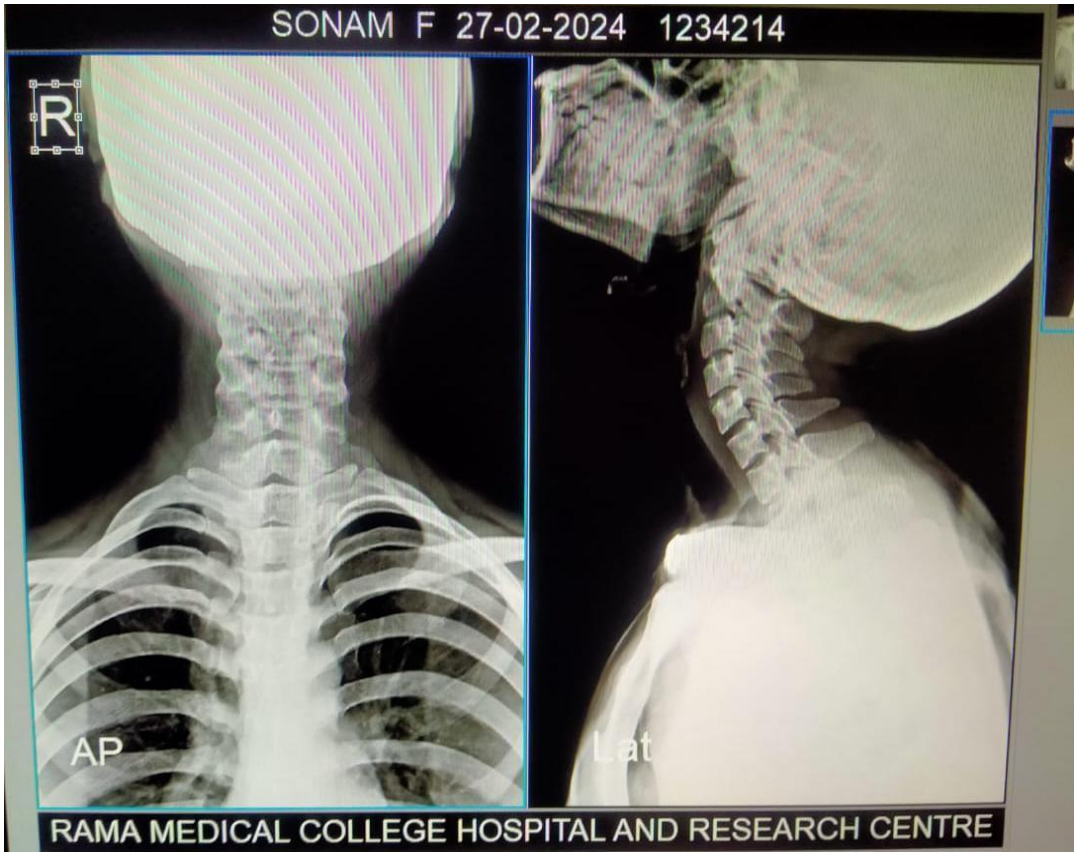
Fig. Mobilization.

Fig. MFR

RESULT:

After treatment protocol, the patient claimed she had improvement and she was able to perform ROM without pain. Cervical vertebrae came to anatomical position. No pain was left. Mobility is increased.

CFRT is negative.
NPRS was reported 0 after end of treatment protocol.
Mobilization and MFR gave best results to overcome misalignment of cervical vertebrae and pain with movement.



Discussion:

My case assessed manually, physical tests and by radiographical assessment. She had cervicogenic headache from past few months. As I applied Mobilization and MFR, MFR released facia and muscles of posterior compartment of cervical which removed restrictions of vertebras to shift from their anatomical position, helped vertebras to stay in corrected position and gave relief in pain. On other hand, mobilization was working on correcting vertebral position and secondly on pain. Therefore, combination of this worked together wonderfully to improve overall condition of CGH patient.

Conclusion:

This case study is consistent with studies that demonstrates mobilization and MFR techniques are effective combinations of therapies for people with Cervicogenic headache.
After completing treatment plan, there was excellent improvement in alignment and pain in Cervicogenic headache.

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