



## CHRONIC NECK PAIN AND THERAPEUTIC ROLE OF MYOFASCIAL RELEASE FOLLOWED BY CERVICAL OFFLOAD DYNAMIC TAPE: A CASE SERIES STUDY

Mohammad Sidiq<sup>1</sup>, Balamurugan Janakiraman<sup>2\*</sup>, Arunachalam Ramachandran<sup>3</sup>, Faizan Zaffar Kashoo<sup>4</sup>, Sureka Varalakshmi V<sup>5</sup>, Nalini Devarajan<sup>6</sup>

**Article History:** Received: 12.12.2022

Revised: 29.01.2023

Accepted: 15.03.2023

### Abstract

**Background:** Myofascial trigger points are very common in upper trapezius which can occur at any age due to the spasm of upper trapezius leading to Neck Pain and is often encountered with difficulty in sitting in flexed posture and can eventually lead to chronic cervical pain, disability, and diminished quality of life. Dynamic tape is a new approach applied in a shortened position and has a good purchase on the levers. By using the offload application technique to maximize load absorption is to put the tape on with the body part shortened and with a degree of stretch contributes to a lightening of muscular load required to make the movement thereby making movements less painful. There is no study available

**Objective:** To evaluate the effect of dynamic tape application using cervical offload approach along with MFR in chronic Neck pain.

**Case Description:** Four patients with neck pain with a chronicity ranging from four to eight months duration visited the OPD of NIMS Physiotherapy department. The patients presented with symptoms of neck pain, early morning stiffness, radiculopathy, and difficulty performing activities of daily life. It was diagnosed as chronic myofascial trigger syndrome in upper trapezius. An extensive assessment of pain, mobility, muscle length and function, and neuro-dynamics was conducted.

**Intervention:** We gave myofascial release before the application of dynamic tape to reduce pain, spasm of upper trapezius muscle, neck stiffness, improving flexion range of motion of neck contralateral neck flexion and functional activities of daily living. Baseline measurement of pain, Range of motion of cervical spine, neck disability index and functional ADL assessment were taken pre and post. Outcome measures showed a satisfactory improvement except ADL after the application of dynamic tape along with myofascial release.

**Conclusion:** We conclude that myofascial release along with dynamic tape offload approach is an effective intervention in chronic upper trapezius myofascial trigger point pain.

**Keywords:** Neck pain, Dynamic tape, Myofascial release technique, upper trapezitis, triggers point pain

<sup>1</sup>Department of Physiotherapy, Galgotias University, Greater Noida UP India

<sup>3</sup>Faculty of Physiotherapy, Madhav University, Abu road, Rajasthan, India

<sup>4</sup>Department of Physical Therapy and Health Rehabilitation, College of Applied Medical Sciences, Al Majmaah 11952, Saudi Arabia

<sup>2\*,5,6</sup>Department of Research, Meenakshi Academy of Higher Education and Research (MAHER), Tamil Nadu, India.

DOI: 10.31838/ecb/2023.12.s2.193

## 1. Introduction

At any age, myofascial pain disorders can develop (Prevalence of Cervical Myofascial Pain Syndrome and 2021). Poor ergonomics related to jobs, intensity of exercise, and use of electronic gadgets are the most prevalent causes of this ailment, which may be made worse by age, personal sickness, stress, and body mass index (BMI) (Boonruab et al. 2021). The goal of myofascial release therapy (MRT), which is performed manually, is to return the myofascial complex to its ideal length, reduce discomfort, and enhance function (Lee et al., 2016). According to a different study, MRT helps persons with non-specific NP and low back pain (LBP) by relaxing the area with decreased sliding fascia mobility and

decreasing pain perception in the short term (Toro et al. 2016). The few published research that show positive benefits for myofascial release technique (MRT) contradict each other regarding how MRT affects pain (Ajimsha and Al-mudahka 2014). Dynamic tape is a novel technique with good leverage that is used in a shortened position. To maximize load absorption, the shorter body component is wrapped with tape using the offload application technique. Moreover, a certain amount of stretch lessens the muscular load needed to perform the exercise, making it less unpleasant (McNeill and Pedersen 2016). Our goal is to investigate the impact of MFR and the dynamic tape unloading technique on upper trapezius trigger point discomfort that is chronic.

### Case Descriptions/Patient information:

The demographic details of all four patients are given in table No 1

Case no	Gender	Age in years	BMI kg/m <sup>2</sup>	Chronicity of pain
01	Female	21	20.3	4 months
02	Female	24	25.3	6 months
03	Male	37	30.4	3 months
04	Female	23	22.5	4 months

### Primary concerns/symptoms:

Their main complaints were left unilateral neck ache, which could radiate to the left shoulder blade and scapula spine and was accompanied by a great deal of anxiety that kept them up at night. The first

patient likewise lamented her inability to write for longer than 30 minutes, which prevented her from finishing her academic assignments and hurt performance.

Table 2: Scores of initial evaluation for outcome Measures

Outcome measure	Case 1	Case 2	Case 3	Case 4
VAS	6	7	6	9
Neck Disability Index	35	40	35	42
WHO-5 quality index	30	40	30	42
Barthel Index	60	40	40	40

### Therapeutic intervention:

Before applying Dynamic tape, Myofascial Release was performed on all four patients.

The tape was then put on utilizing the cervical offload technique. The primary technical distinction between Dynamic Tape and K-Tape is that Dynamic Tape is put in a shorter position,

offloading the upper trapezius and allowing the muscle to rest and repair. Any itching or pain must be reported, and the patient is allowed to remove the tape after 48 hours. For three weeks, this was done twice, and then there was follow-up. For this case series, CARE Guidelines were adhered to.

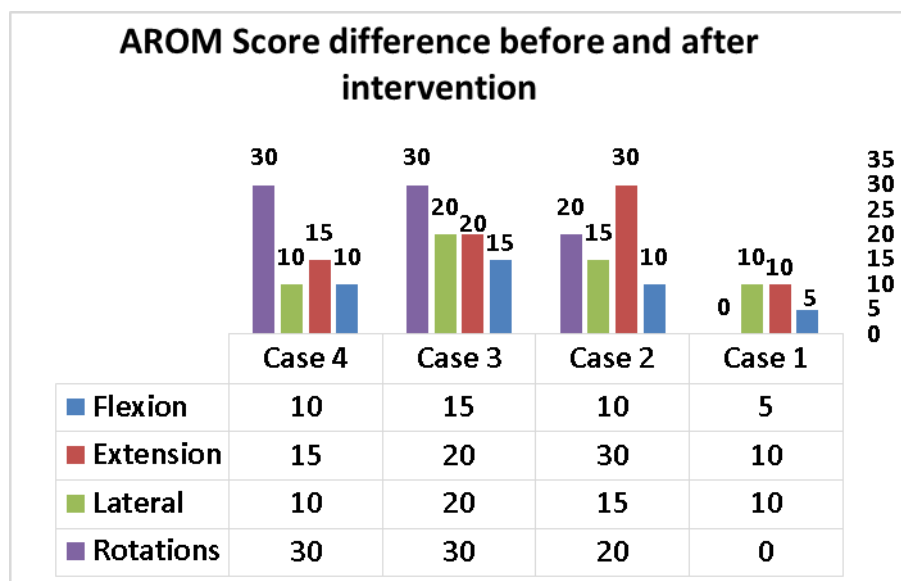
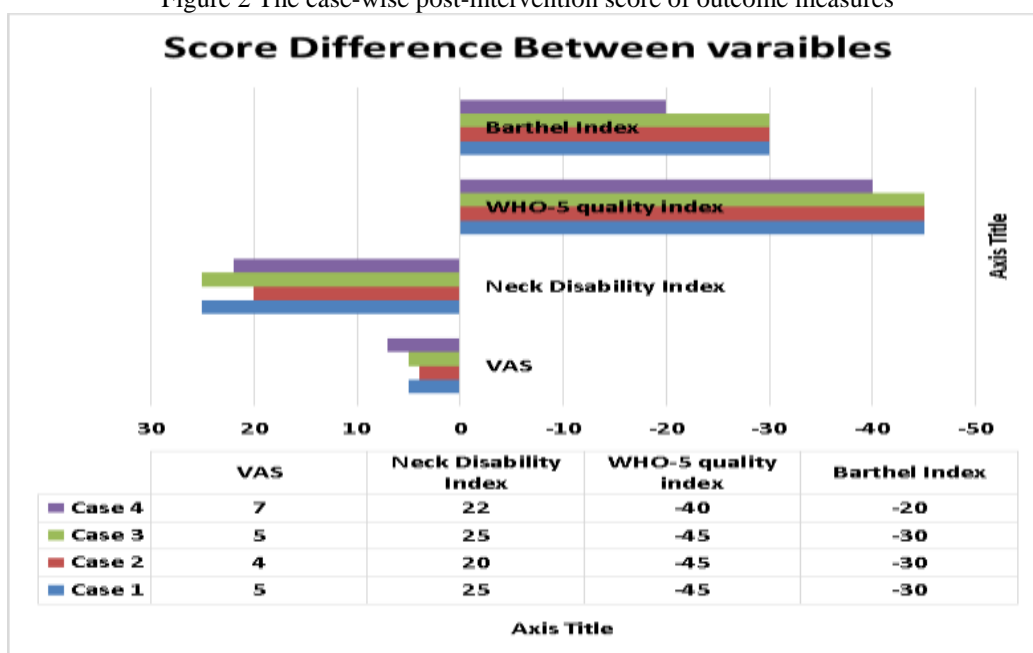


Figure 1 The difference in pre and post intervention scores for active range of motion among the 4 cases.

Figure 2 The case-wise post-intervention score of outcome measures



## 2. Discussion

Improvements in pain, disability, quality of life, and cervical range of motion were seen in the patient outcomes. According to a prior study, "Dynamic tape like Kinesio taping leads to improvements in pain, pressure pain threshold, and cervical range of motion in quick order, but not impairment (Ay et al. 2016). Kinesio taping can therefore be employed as an alternative therapy technique for the treatment of MPS patients (Ay et al. 2016) Another study found that, compared to the placebo, Kinesio™ tape effectively reduced joint position errors and neck pain severity in

people with mechanical neck pain after 3 and 7 days, but there was no difference between the two groups' NDI scores (Alahmari, Rengaramanujam, et al. 2020). Applying dynamic tape involves stretching the tape a little bit and shortening the affected body portion in order to maximize load absorption. According to a study by (Alahmari, Reddy, et al. 2020), using DT on people with CNLBP may only enhance their back extensor endurance. This finding implies that DT regulates the mechanisms causing back muscular exhaustion. According to a study by Sidiq et al 2022, dynamic tape offloading and myofascial release are an

efficient treatment for chronic upper trapezius myofascial trigger point pain (Sidiq et al. 2023).

In this study, the observed limitations are the case series design is prone for bias and the findings are not fit for generalizability to larger people with chronic neck pain. Nevertheless, this case series provides information that permits development of hypothesis, leading to conduction of advanced scientific investigations.

### 3. Conclusion

This case series study findings suggest that myofascial release immediately followed by cervical offload dynamic tape is a possible interventional approach to alleviate pain and improve function among chronic neck pain people. However, studies exploring this treatment approach are needed.

**Conflict of interest:** None

### 4. References

- Ajimsha, M S, and Noora R Al-mudahka. 2014. "Effectiveness of Myofascial Release: Systematic Review of Randomized Controlled Trials." *Journal of Bodywork & Movement Therapies*. <http://dx.doi.org/10.1016/j.jbmt.2014.06.001>
- Alahmari, Khalid A, Ravi Shankar Reddy, et al. 2020. "The Effect of Kinesio Taping on Cervical Proprioception in Athletes with Mechanical Neck Pain — a Placebo-Controlled Trial." 9: 1–9.
- Alahmari, Khalid A, Kanagaraj Rengaramanujam, et al. 2020. "The Immediate and Short-Term Effects of Dynamic Taping on Pain , Endurance , Disability , Mobility and Kinesiophobia in Individuals with Chronic Non-Specific Low Back Pain : A Randomized Controlled Trial." : 1–17. <http://dx.doi.org/10.1371/journal.pone.0239505>.
- Ay, Saime, Hatice Ecem, Deniz Evcik, and Sibel Kibar. 2016. "Original Article The Effectiveness of Kinesio Taping on Pain and Disability in Cervical Myofascial Pain Syndrome." *Revista Brasileira de Ortopedia (English Edition)* (x x): 1–7. <http://dx.doi.org/10.1016/j.rbre.2016.03.012>.
- Boonruab, Jurairat, Phiyaphon Poonsuk, Watchara Damjuti, and Wichit Supamethangkura. 2021. "Myofascial Pain Syndrome Focused on the Upper Trapezius Muscle : A Comparative Randomized Controlled Trial of the Court-Type Traditional Thai Massage versus the Thai Hermit." 26: 1–8.
- McNeill, Warrick, and Clare Pedersen. 2016. "Dynamic Tape. Is It All about Controlling Load?" *Journal of Bodywork and Movement Therapies* 20(1): 179–88.
- "Prevalence of Cervical Myofascial Pain Syndrome And." 2021. 230(3): 230–34.
- Sidiq, Mohammad et al. 2023. "Dynamic Tape Cervical Offload Approach in Chronic Upper - Trapezius Myofascial - Trigger Point Pain : Case Study." 14(1): 613–15.
- Dey, N., Kumar, G., Vickram, A. S., Mohan, M., Singhanian, R. R., Patel, A. K., ... & Ponnusamy, V. K. (2022). Nanotechnology-assisted production of value-added biopotent energy-yielding products from lignocellulosic biomass refinery—a review. *Bioresource Technology*, 344, 126171.
- Toro, De, Francisco Javier, Iris Machado, and Isaac Manuel. 2016. "Myofascial Release Therapy in the Treatment of Occupational Mechanical Neck Pain : A Randomized Parallel Group Study." 95(7): 507–15.