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Research Article

Efficacy of Myofascial Release Method on Pain in Patients with Cervical Radiculopathy Associated with Myofascial Pain

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Abstract

Objective: The study was aimed to evaluate the efficacy of Myofascial release (MFR) method on pain severity in patients with cervical radiculopathy associated with Myofascial Pain Syndrome (MPS).

Patients and Method: Sixteen patients applied MFR were scrutinized for pain intensity. Detailed history, physical and neurological examination findings were obtained from all cases. Magnetic Resonance Imagination (MRI) was performed on all patients. The subjects were 45.5 ± 4.5 years of age, with cervical pain for 3.4 ± 1.9 years. Senior physiotherapist who experienced treating soft tissue rheumatism and advanced training in MFR delivered the therapy. MFR therapy consists of prolonged assisted stretching of painful areas of soft tissue of the neck, back and arms. There were no adverse events or early discontinuations. Recruitment was completed in three weeks. Pain intensity was evaluated by Visual Analogue Scale (VAS) at pre-and post-intervention.

Results: There were significant improvements in the mean score of VAS after MFR therapy ($p<0.001$). There were no adverse effects seen during maintenance treatment.

Conclusion: MFR therapy may shed light on the management of mechanic cervical pain as an effective and reliable method.

Keywords: Myofascial Pain Syndrome; Myofascial Release Therapy; Neck Pain

Introduction

Cervical radiculopathy is characterized by severe neck pain which results of compression of a spinal nerve root, which causes pain and numbness in a dermatomal distribution, muscle weakness, and impaired deep tendon reflexes [1,2]. The annual prevalence of cervical radiculopathy is 83.2 per 100.000 populations [3]. Cervical radiculopathy is commonly associated with Myofascial Pain Syndrome (MPS) [4]. MPS may presents in the neck, parascapular region, and upper back muscles of patients with cervical radiculopathy [4]. myofascial trigger points are other possible sources of pain in patients with radiculopathy [5]. Several researchs have reported that Myofascial trigger points (MTrPs) are predominantly present on the side of radiculopathy [6]. Trigger points may be causing the painful symptoms that are attributed to radiculopathy. Myofascial release is soft tissue therapy and is used for the treatment of skeletal muscle immobility and pain. MFR is considered to be effective in treating the Myofascial trigger points [7,8]. Our study has been planned to assess the effect of MFR of neck pain in patients with cervical radiculopathy. A total of 16 patients with mechanical neck pain were admitted to Department of Physical Therapy and Rehabilitation of Gaziantep University Research Hospital. Detailed history, physical and neurological examination findings including spurling test were obtained from all cases. Magnetic Resonance Imagination (MRI) was performed on all patients. All patients diagnosed with cervical radiculopathy associated with MPS as a result.

Inclusion criteria were age between 25-55 years, either males or females, unilateral pain radiation to the arm, trigger points in upper trapezius, patients showing positive cervical foraminal compression test (spurling test). Patients had an identified systemic, metabolic, endocrinological, tumoral, infectious, neurologic disease, were addicted to alcohol or drug, were pregnant, had not been diagnosed with cervical radiculopathy and

received antidepressants, pregabaline, gabapentine, and were not volunteers for participation or if they stated an intolerance to touch were excluded from the study. Neck pain was evaluated by Visual Analogue Scale (VAS) in all patients. MFR therapy consisted of prolonged assisted stretching of painful areas of soft tissue of the neck and upper limb. The study groups undervent a protocol which was modified from Ritika Sambyal method [2]. Our MFR protocol was as follows: myofascial release at insertion of the trapezius assisted release of cervical fascia, release of anterior thoracic wall, release of pectoral region. All of patients have been treated from the neck to back. Focused MFR was given over the small segment of the upper trapezius with two fingers reinforcing each other and then a downward vertical stretch was executed [9]. The stretch was applied to take the available slack. The hold was executed for 90-120 seconds, depending upon the release and stretch was then applied again. Patients were taking no medication during the study period. All subjects received 45 min of therapy 5 times per week for three consecutive weeks. Senior physiotherapist delivered the intervention. A signed consent form was obtained from all subjects.

Assessments of pain severity at initially and after treatment were made by physiatrist. Subjective complaints of pain were measured using a Visual Analog Scale (VAS) [10] which assesses the pain intensity and degree of relief experienced by the patient (score of 0 = no pain; 10 = unbearable pain).

Statistical Analysis

The Statistical Package for Social Sciences (SPSS 11.5, SPSS Inc, Chicago, IL) was used for all statistical analyses. A paired sample t-test is used to determine the difference between the average values of the pain score in baseline and after treatment. $p < 0.05$ was considered significant.

Results

Demographic data of the participants recruited is showed in Table 1.

	Mean ± SD
Age (years)	45.5 ± 4.5
Disease duration (years)	3.4 ± 1.9

Table 1: Demographic data of patients with Neck Pain.

The mean age of the patients was 45.5 ± 4.5 years and the mean disease duration was 3.4 ± 1.9 in patients. Pre-and post-analyzed report of pain severity is showed in Table 2.

	Baseline Mean ± SD	Post- treatment Mean ± SD	p
VAS	9.2 ± 0.7	3.7 ± 1.1	< 0.001

Table 2: The comparison of pain severity at initial assessment and post-intervention in patients with neck pain.

The mean VAS score was 9.2 ± 0.7 and 3.7 ± 1.1 in baseline and post-treatment, respectively). We observed that mean VAS score decreased significantly for the patients when compared to the baseline and after treatment ($p < 0.001$).

Discussion

In our study, we showed that MFR program significantly improved the pain severity in patients with cervical radiculopathy associated with MPS. We observed that MFR technic was strongly effective on pain especially in a short period of treatment. MFR was specifically designed to relax the fascia in painfull area. Multiple studies show that myofascial release can result in decreased pain and reduced symptoms in myofascial pain [10,11,12]. We thought that our results were superior to other similar studies because we assessed the pain intensity in patients with not only MPS but also radiculopathy. Our present study has demonstrated that MFR was more benefit for treating MPS at the muscles with radicular pain with an important and consistent improvement. The gentleness of myofascial release technic is easy to apply for patients to tolerate [12]. With any form of hands-on therapy, it's crucial to communicate with the therapists about how much pressure the patients can tolerate. Pain is associated with deconditioning in commonly [13,14]. Strecthing, pressure and massage can reduce tenderness and pain, but we don't know if these benefits long lasting. In our results presented in this study, patients who received MFR therapy showed significant improvements in pain compared before therapy.

There are several limitations to our study. We have found that our patients improved with this treatment protocol. However, we can't recommend that this protocol for every patient with cervical radiculopathy and MPS. When we do this study, we only enroll 16 cases. Although double-blind would be more appropriate for clinical parameters but we could not find this opportunity in study period. Further, the comparatively sample size, and homogeneity of the sample limit the generalizability of this study. To our knowledge, this is the important report to assess the efficacy of MFR on myofascial pain in patients with cevical radiculopathy. There is no standard regimen for this technique we applied as commonly recommended version. We thought that treatment alternatives should be individualized for patients based on target symptoms and impairment in functioning. Another important point was that our patients never complained the pain during therapy in fact massage is not contraindicated except locally on active trigger points. Further double-blind, placebo controlled and long term follow-up studies are needed to determine the effect of MFR in mechanical neck pain. Future randomized controlled trials of MFR powered for efficacy are needed to determine; if selected patient characteristics can be applied to select the most efficacious therapy technique, or determine the ideal dose of therapy.

Conclusion

This study suggests that MFR method provides relief from the symptoms of cevical radiculopathy associated with myofascial trigger points and could be an important therapeutic tool to decrease pain for patients. MFR program can be considered as a complementary therapy in addition to other therapies that can achieve transient improvements in the symptoms of these patients.

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