Case Report

Application of Matrix Rhythm Therapy (MaRhyThe©) as a Novel Treatment in Trigeminal Neuralgia

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Abstract

Trigeminal neuralgia (TN) is one of the most excruciating painful conditions that is generally referred and treated in the physiotherapy outpatient department (OPD). It is described by generalized bouts of paroxysmal pain enduring from a brief moment to as long as 2 min and is situated along the course of the trigeminal nerve in the orofacial region. Matrix Rhythm Therapy (MaRhyThe©) is a new tool to treat pain and restricted joint mobility. However, its effectiveness is yet to be established in myofascial pain syndromes. A case of TN was reported in the OPD with complaints of the right side intraoral and jaw pain for 2 years, lasting for 3–5 min with 15–20 episodes of pain every day. Three sessions of MaRhyThe© once a week for 3 weeks was administered as an intervention to the affected side. Pain intensity, duration of pain, and the number of episodes per day were recorded by the patient in the logbook provided to the patient. After the intervention by 3rd week, the subject reported decrease in intensity of pain, reduction in duration, and episodes of pain in the consecutive days. The effect of MaRhyThe© was encouraging on TN and its symptoms.

Keywords: Matrix rhythm therapy, Myofascia, Trigeminal neuralgia

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INTRODUCTION

Trigeminal neuralgia (TN) is orofacial pain that is restricted to one or more divisions of the trigeminal nerve. TN is categorized into three etiologic classes, namely idiopathic, classical, and secondary TN. Idiopathic TN occurs without any underlying pathology. Traditional TN is caused by vascular pressure of the trigeminal nerve root. Secondary TN is the result of a significant neurologic malady, like a tumor of the cerebellopontine point or multiple sclerosis.[1] TN is usually presented unilaterally with intense paroxysmal pain, provocation of pain with a limited local stimulus, with pain always confined along the course of the trigeminal nerve. The pain may last for a few seconds to minutes and is episodic in nature. Patients normally do not encounter pain between paroxysms.[2] The true prevalence of TN is unknown and has not been studied extensively in the population.[3] Although TN is a prototype of neuropathic pain, it does not fit the evaluating framework for the grading of neuropathic pain. Absent objective signs and tests are known features of classical TN and hence confirmatory diagnosis is done clinically.[1]

There are various treatment approaches used in the past which involve the use of medical management including

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anti-epileptic drugs,[4] antispasmodic and muscle relaxants, antidepressants.[5] The physiotherapeutic modalities such as transcutaneous electrical nerve stimulation and LASER[6] were considered as noninvasive modes of treatment. Matrix Rhythm Therapy (MaRhyThe©) has been a recent advancement in the field of rehabilitation. It works on the principle, that cells in the body vibrate or oscillate at a frequency of 8–12 Hz and maintain the physiological functions of the body.[7,8] MaRhyThe© has shown to be effective in the treatment of pain and movement dysfunction. However, its efficacy in treating symptoms of TN is lacking. Hence, the present case report aimed to investigate the effectiveness of MaRhyThe© in TN to strengthen its role in pain management in TN.

CASE REPORT

A 15-year-old school going boy visited a private physiotherapy center, Belagavi City with complaints of right side intraoral and jaw pain for 2 years. The patient described his pain as a frequent electric shock-like sensation which was episodic in nature. Pain presented while doing his activities of daily living such as washing his face, brushing and occasionally exposure to fan or air conditioners, and eating ice creams. Pain sustained for approximately 3–5 min with 15–20 episodes in a day. The patient was administered with oral nonsteroidal anti-inflammatory drugs, anti-epileptics, and antidepressants with no satisfactory reduction in condition/symptoms from the medical practitioner. During his first visit to the physiotherapy clinic, a detailed assessment was done, including brief history, pain assessment, sensory examination, and motor examinations. The assessment revealed no abnormalities and was clinically diagnosed based on his symptomatology as idiopathic TN.[1] MaRhyThe© was administered once a week for 3 weeks. The treatment outcomes included pain intensity, duration, and number of episodes of pain per day. A logbook was given to the patient to document the duration and episodes of pain the entire week for 3 weeks. The patient was instructed to stop oral medications during the course of therapy and was requested to comply with the advice to wear cotton in both the ears all the time to avoid cold exposure. Based on the logbook data, pre- and postdata of pain intensity (measured using verbal analog scale), duration of pain in seconds, and number of episodes of pain per day were noted and scored compared.

Intervention

The patient was made to lie down comfortably in a supine/prone position depending on the area treated. The treatment areas were well exposed and talcum powder was applied over the treatment area to avoid the friction caused by the Matrix Mobil®. MaRhyThe© sessions lasted for 60 min. The face was divided into three areas: cervical, entire face, and scalp. The treatment duration of each area was 15 min to the cervical region, 30 min to the entire face, and 15 min to the scalp.

Description of MaRhyThe©: MaRhyThe© was delivered using a device Matrix Mobil®. The Matrix Mobil® is rod shaped with a spiral-shaped vibration head that vibrates in the physiological frequency of 8–12 Hz and is applied in a longitudinal stroking manner by pushing the probe of the device into the soft tissue of treatment areas. The device utilizes a combination of mechanical vibrations together with the oscillating electromagnetic field induced by permanent magnets mounted in the resonator. No other physiotherapeutic treatment was provided.

RESULTS

The preintervention score of pain intensity on the verbal analog scale was 7 which reduced to 2 at 3 weeks of postintervention with 71% of pain reduction. The patient also showed a reduction in the duration of pain by 75% (54 s preintervention to 13 s postintervention). Further, the number of episodic pains also reduced remarkably by 60% with 5 episodes/day at preintervention to 2 episodes/day at postintervention) [Table 1].

DISCUSSION

Adapting to the recent advancement in technological trends in the field of rehabilitation is the need of the hour. MaRhyThe© is a newer tool in the field of rehabilitation that has shown to be effective in treating pain and restricted mobility of the musculoskeletal system. The current case report addressed to determine the effectiveness of MaRhyThe© in TN. The treatment was locally targeted to deal with the pathology caused to the fifth cranial nerve. Myofascial pain is generally presented by a local, boring, aching muscle pain and the presence of localized tender sites in a muscle, tendon, or fascia. The severity of symptoms in terms of pain by myofascial trigger points is said to cause and is described as agonizing, incapacitating pain to painless restriction of the range of motion.[9]

Table 1: Variation of pain-related parameters pre- to postintervention

	Verbal analog scale	Duration of pain per episode	Number of episodes per day
Day 1	7	54	5
Day 21	2	13	2
Percentage of change	71.43	75.92593	60

Similar findings were noted in a study conducted on patients with Bell's Palsy where MaRhyThe© along with standard physiotherapy care was provided. The authors concluded that MaRhyThe© showed faster and better recovery than those in whom only conventional physical therapy treatment is applied.[10]

According to William N. Danzig, physical therapy should be an integral part to boost and accelerate the recovery of temporomandibular joint patients. The utilization of hot moist packs and ultrasound has shown to improve the microcirculatory system, promotes relaxation, relieves muscle spasm, and decreases the inflammation.[11] However, limited scientific evidence prevails in the use of MaRhyThe© which hypothesizes that the intervention acts on cells, promotes improved microcirculation, muscle relaxation, and decreases the inflammation.[12]

In the current case report, the decrease in pain could be ascribed with the impact of MaRhyThe© which acts at cell level causing tissue extension and the elasticity of fascia, permitting free movements of fascia and ligaments, causing decrease in pain. It has also shown to improve microcirculation by decreasing viscosity in blood and increasing artery diameter, consequentially increasing blood supply, oxygen delivery, and the exchange of metabolites at the tissue site that could be the possible reason of improvement observed in the case.[13,14]

Application of MaRhyThe© also produces muscle relaxation by massaging effect, enhancing parasympathetic activities, and reducing sympathetic activities of the autonomic nervous system.[15] This may also be one of the reasons for the reduction in pain in the present case report.

CONCLUSION

The present case of TN treated with MaRhyThe© as a novel treatment demonstrated a satisfactory decrease in pain, duration, and episodes of pain. Consequently, the use of MaRhyThe© may be considered as another effective. Physio-therapeutic intervention for treating painful conditions like TN. However, more case series and clinical trials are required to generalize the results to such clinical evidences.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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