CASE REPORT

Reduction Of Pain In Chronic Myofacial Pain Syndrome Following Naturopathic Intervention

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ABSTRACT

Myofascial pain syndrome (MPS) is a chronic muscle disorder caused by sensitive knots of tight muscle fibers in different areas of the body. The upper trapezius region is involved in daily activities and neck movement. Epsom salt compresses provide soothing relief for trapezius muscle pain; these increase blood circulation and relax tight fibers. In this case report, a female with MPS was treated using naturopathic interventions. Visual Analogue Scale (VAS), Neck Disability Index (NDI), and Shoulder Pain and Disability Index (SPADI) were used as assessments. After the treatment, there was a drastic change in the scores, where NDI reduced from (30-48%) to (0-8%), VAS from (9/10) to (2/10), and SPADI scores reduced from (75.5) to (17.5). Daily assessment showed improvement in pain. Thus this case study suggests that the combination of hot Epsom salt compress and hot wax therapy application have the potential in reducing the pain associated with chronic MPS. Further studies with a larger sample size are required to establish the effectiveness of the wax therapy and Epsom salt compress.

Key words: Myofascial pain syndrome, Superficial back muscles, Waxes, Visual Analog scale, Naturopathy, Pain measurement, Trigger points

The conventional definition of myofascial pain syndrome (MPS) is pain originating from a nodule within skeletal muscle, known as a myofascial trigger point. The commonest predisposing factors of MPS and functional impairment may be local or remote injury [. It is a manageable condition that exhibits a good response to physical and needling techniques but emphasizes the importance of postural deviations, biomechanical factors, and anatomical factors that interfere with normal muscle function [1]. In America, more than 9 million adults suffer from chronic persistent pain syndrome [2]. Research findings suggest MPS is associated with musculoskeletal discomfort. MPS symptoms may occur after repetitive muscular strain or trauma, but the etiology is still not confirmed [3]. MPS is identified by profound pain, persistent ache, and localized pain in musculoskeletal soft tissues. MPS is interpreted as a frequent form of musculoskeletal pain. This muscle-related pain is the leading cause of locomotor pain. Few of the underlying factors linked to trigger point formation are microbial, psychogenic, and hormone-mediated [4]. Radiating pain and elicited twitch response are the two essential features of myofascial trigger points.

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Both are regulated through the spinal nociceptive mechanism, based on clinical and animal studies. However, a strong nociceptive stimulus can transmit the impulse to the respective dorsal horn neurons and cause them to release substance P and CGRP (Calcitonin Gene-Related Peptide), which are released to other dorsal horn neurons and promote the effectiveness of silent synaptic connections at the spinal cord level. The clinical evaluation of myofascial trigger points relies on physical examination and clinical assessment. However, this physical examination is recognized as a questionnaire method [5]. The pain is associated with increased neural excitability, muscular tissue guarding arising from soft connective tissue overgrowth, and associated symptoms distinguished by palpable tender nodules in hypertonic muscle regions, pain, discomfort, and impaired mobility [6]. Epsom salt is a well-established natural mineral, and the active mineral compound is Magnesium sulphate. When salt is soaked and used as a compress, it relieves muscular discomfort and muscle tension. It is economically feasible and has high health-promoting effects. The intervention is highly tolerated. The properties present here include pain-modulating and anti-inflammatory effects [7].

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Wax therapy comprises the use of liquefied wax such as paraffin wax, which is mixed with oil and used for external applications on body parts. This helps in reducing muscle tension through heat-mediated vasodilation [8].

The present case used naturopathic interventions of Hot Wax application and Hot Epsom salt compress for the management of MPS. Improvement in pain was observed during the intervention period.

CASE DESCRIPTION

A female patient aged 31 years visited the hospital outpatient department (OPD) at the GTN Medical College of Naturopathy and Yogic Sciences and Research Centre, Dindigul, Tamil Nadu, India. The patient came with a complaint of upper shoulder pain and irritation for 1 year and Disturbed Sleep when the pain occurs for 9 months. Symptoms were exacerbated by doing heavy activities regularly and were relieved by applying topical analgesic gel. She weighs 72 kg with a height of 157 cm, with a Body Mass Index (BMI) of 29.2 kg/M² (overweight). There was no history of trauma, fever, systemic illness, or other joint inflammation.

The patient had a history of irregular menstrual cycles for 8 Years. The patient was not on any medications for the last 2 years and does not have any comorbidities such as diabetes mellitus or Hypertension. On physical examination, the pain was in the upper trapezius region, experienced as burning and stabbing, described as heaviness, pulling, and tightness over the muscle at the affected site. Tenderness and the presence of myofascial trigger points were assessed manually. The intensity of the pain was evaluated using the Visual Analogue Scale (VAS); neck disability was evaluated using the Neck disability index (NDI), and shoulder pain was assessed using the Shoulder Pain and disability index (SPADI).

INTERVENTION

The patient received Hot Wax application and Epsom salt compress on alternate days at a temperature of (42°C-52°C) for wax application and (38°C-40°C) for Epsom salt compress for 20 minutes between (3:00–4:00 PM) for 10 days, where the treatment is given on the upper shoulder covering the Trapezius region. Skin dryness, irritation, itching, blister formation, or Allergic dermatitis were monitored during treatment. Five sessions of Epsom salt compress and Wax therapy were implemented during the treatment period. The patient was also instructed not to use any co-administered analgesic treatment or other treatment modalities during the procedure.

RESULTS

The assessment of the pain and discomfort was done after 10 days, and the comparison of the pre- and post-treatment outcomes is shown in Table 1.

Table 1. Pre- and post-treatment assessment

PARAMETERS	Pre-Assessment	Post-Assessment
Height	153 cm	153 cm
Weight	72kg	72kg
BMI	29.2kg/m²	29.2kg/m²
Systolic Blood Pressure	132	136
Diastolic Blood Pressure	86	84
NDI	(30-48) %	(0-8) %
VAS	9/10	2/10
SPADI	75.5	17.5

There is a significant reduction in pain intensity and physical limitations under naturopathic therapy. The NDI Score decreased from 30-48% to 0-8% (Figure 1), VAS Score decreased from 9/10 to 2/10 (Figure 2), and the SPADI Score decreased from 75.5 to 17.5 (Figure 3). This showed a substantial reduction in pain intensity, functional impairment, and improved daily activity performance. There was an absence of adverse reactions, and the patient's adherence to the treatment was good; she responded without any negativity.

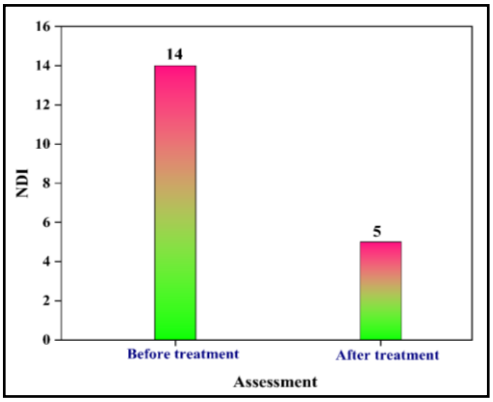


Figure 1. The graph shows the gradual decrease in NDI levels

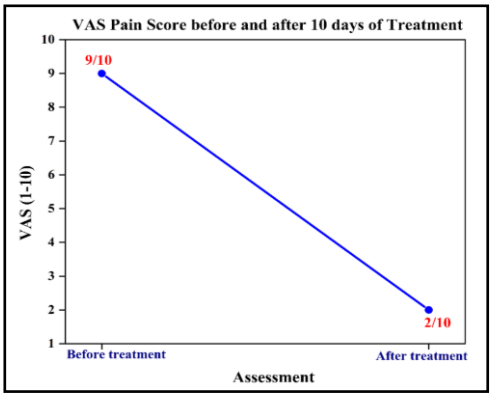


Figure 2. The graph shows the gradual decrease in VAS levels

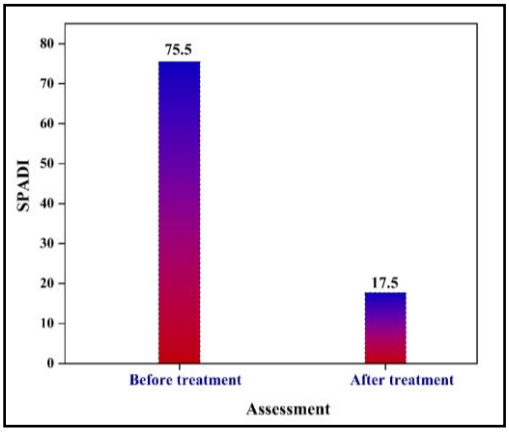


Figure 3. The graph shows the gradual decrease in SPADI levels

DISCUSSION

The present case demonstrated a reduction in pain Symptoms following a naturopathic modality in a 31-year-old female with chronic MPS involving the upper trapezius region. The changes in clinical outcomes were due to the combined effects of Epsom salt compress and Wax Therapy. The changes observed in the present case are supported by previous reports documenting the positive outcomes with favorable changes from these interventions intended to improve localized muscular discomfort and functional disability.

Thermal treatment, such as physiological responses like vascular dilation and muscular relaxation, provides pain alleviation [6]. By reducing physiological levels of the pro-inflammatory cytokine, Epsom salt alleviates pain and inflammation. This mineral enhances Adenosine Triphosphate (ATP) production, supports calcium metabolism, and skeletal health [7]. Wax therapy helps to facilitate blood flow and aids muscle relaxation [8]. Thermotherapy may influence local Thermal state and pain perception [9]. The administration of heat stimulus increases cutaneous perfusion and induces localized physiological responses [10]. There is an improvement in pain intensity and functional status following treatment methods involving heat [11]. Magnesium ions are thought to modulate neural transmission and the NMDA (N-methyl-D-aspartate) receptors, a mediator signaling supporting a proposed mechanism of action for the analgesic effects associated with magnesium [12]. However, the findings on the treatment effects of cutaneous absorption of magnesium remain limited. The available evidence also reported on the potential health and wellness-related roles of magnesium [13]. The overall therapeutic response noted in the present case could be explained by the combined effects of localized thermal therapy, decreased muscle tension, localized tissue responses, and other treatment-related factors rather than a single mechanism. The primary therapeutic aim in MPS focuses on reducing trigger point-related muscular tension and improving pain severity and functional limitations [14].

This case report has several limitations as it involves a single patient, and no control or comparison group is created, which prevents the establishment of a direct causal link between the intervention and observed improvement. Since Epsom salt compress and wax therapy were administered as a combined intervention, the specific contribution to the observed clinical improvement could not be determined. The limited intervention period and follow-up period reduce the ability to evaluate the long-term sustainability of the improvement observed. Large-scale studies with control or comparison groups, extended observation periods, and standardized outcome measures are necessary. Furthermore, comparative investigation analyzing Wax therapy and Epsom salt compress separately and in combination may help to determine individualized and overall effects in patients with chronic MPS.

CONCLUSION

This case shows that the combined application of hot Epsom salt compress and hot wax therapy was associated with reduced pain and improved functional scores in a patient with chronic MPS. Further controlled studies involving larger samples and longer follow-up are needed to establish the effectiveness of these interventions.

LETTER OF CONCERN

The patient had documented concerns about the data interpretation and publication.

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