

Osteopathic Manipulative Treatment for Chronic Neck Pain, Headaches, and Referred Pain in a Patient With Myofascial Pain Syndrome: A Case Report

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CASE REPORT

Abstract

Myofascial pain syndrome (MPS) has been well documented to cause or contribute to chronic pain conditions and may go undiagnosed or ineffectively managed for years.¹ Additionally, MPS and trigger points (TrPs) are found commonly in cases of nerve injury such as radiculopathy.

In the present case report, a 48-year-old man with chronic neck pain radiating into left shoulder and arm, upper back, chest pain, and headaches with possible nerve injury was found to have myofascial trigger points related to his condition. An osteopathic manipulative treatment (OMT) approach was utilized to provide relief from the chronic and complex pain condition.

Background

MPS has been well documented in the pioneering research and literature of Travell and Simons as a cause for significant and undertreated pain throughout the body.¹ Treatment approaches for the characteristic TrPs thoroughly detailed in the literature include trigger point injections (or dry needling), ischemic compression, and spray and stretch.² Despite the well-established classic approaches for treatment, many patients suffer unnecessarily due to “unrecognized, misdiagnosed, and mistreated” TrPs.¹

Osteopathic physicians have an enhanced skill set with the training to appreciate, appropriately diagnose, and effectively address TrPs. Appreciating the effects of somatic dysfunction on the body and the reflexive correlation of somatic dysfunction with medical conditions are core components of the osteopathic philosophy.³ Additionally, core skill sets include the ability to diagnose tissue alterations through palpation (tenderness, tissue texture changes, asymmetry, restrictions)—also known as somatic dysfunction—and effectively resolving these dysfunctions with OMT.³ Training in osteopathic medicine therefore provides a distinct and useful skill set with which to approach treating patients with TrPs.

The purpose of the present report is to provide an osteopathic manipulative medicine (OMM) approach for managing somatic dysfunctions associated with MPS TrPs. Treating somatic dysfunctions associated with MPS TrPs can provide excellent relief of acute

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and chronic conditions, and it can be an extremely beneficial treatment approach with or without the need to utilize TrP injections.

Report of Case

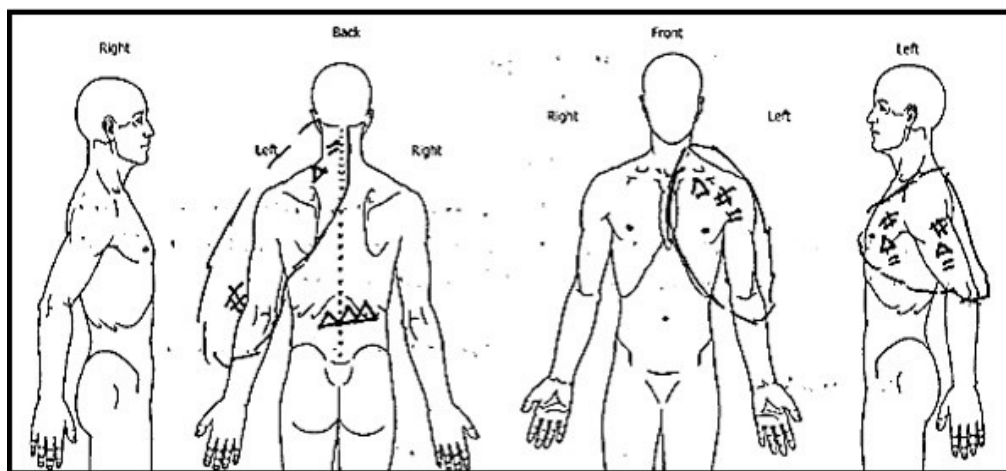
History of Present Illness

A 48-year-old man presented to the OMM clinic at the Des Moines (Iowa) University Tower Medical Clinic with a greater than 10-year history of neck pain radiating into the left shoulder, upper back, across his chest, and down to the left forearm (*Figure 1*). The patient described the pain as constant, dull, and aching to throbbing. On his initial visit, he reported the pain was a 6 out of 10 but that it varied from 2 to 8 out of 10.

In addition, the patient described weakness and difficulty moving his left arm. No specific injury was identified. He also reported headaches with pins and needles spreading to the entire face that were diagnosed by his neurologist as atypical migraines. Function-

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Figure 1. Pain diagram on initial visit intake form. Legend: ▲ ▲ ▲ = aching; /// = stabbing; # # # = weakness.



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ally, the patient's pain limited his ability to lift over his head or use the left arm.

Full cardiac evaluations in 2000 and 2008 were non-contributory. The patient previously received chiropractic treatment and found some temporary relief of symptoms. A magnetic resonance image (MRI) of the cervical spine in 2004 demonstrated mild spondylosis. He reported a bad fall on the ice many years ago and a motor vehicle collision in 2002 where he was rear-ended, but he did not feel these incidents were related to his symptoms.

Medical History

The patient's medical history was remarkable for elevated cholesterol, gastroesophageal reflux disease, and type 2 diabetes with a recent HgA1C 7.2. His medications included rosuvastatin, metformin, glipizide, lisinopril, omeprazole, and aspirin.

Review of Systems

The patient's review of systems was remarkable for a mild concussion suffered in 1969.

Physical Examination

The patient's vital signs were stable, and his gait was normal. A neurologic exam revealed deep tendon reflexes (DTR) 2 out of 4 in the bilateral biceps, brachioradialis, patella, and Achilles tendon. Reflex response in the bilateral triceps was symmetric at 1 out of 4.

Sensation was abnormal with decreased light touch in the left C5, right C6, and left C7 dermatomes. Pain-inhibited weakness was noted in the left shoulder abductor muscles (C5). Painless weakness was noted in the left abductor digiti minimi (C8, T1) and first dorsal interossei (T1). Otherwise, full strength was noted in the lower limbs.

Focal osteopathic structural exam revealed a significant head forward posture with exaggeration of the cervical lordosis and upper thoracic kyphosis. Muscle tightness with active myofascial trigger points was found in the left upper trapezius, sternocleidomastoid, serratus posterior superior, and pec minor muscles. Examination findings were otherwise unremarkable.

Medical Decision-Making

After the patient's presentation and the examination findings were evaluated, the assessment was discussed.

Although the neck and left upper extremity symptoms could be entirely related to myofascial pain syndrome, as trigger points can be secondary to nerve injury,⁴ the clinicians felt it was warranted to obtain MRI of the cervical spine. In addition, the headaches and face paresthesias diagnosed as atypical migraines could also be related to the myofascial trigger points.

Recommendations

MRI of the cervical spine was recommended to rule-out neurogenic causes such as radiculopathy for the patient's condition. OMM was discussed, and three appointments were scheduled on a weekly basis for a trial of treatments. In addition, the patient was scheduled separately for myofascial trigger point evaluation and possible trigger point injections.

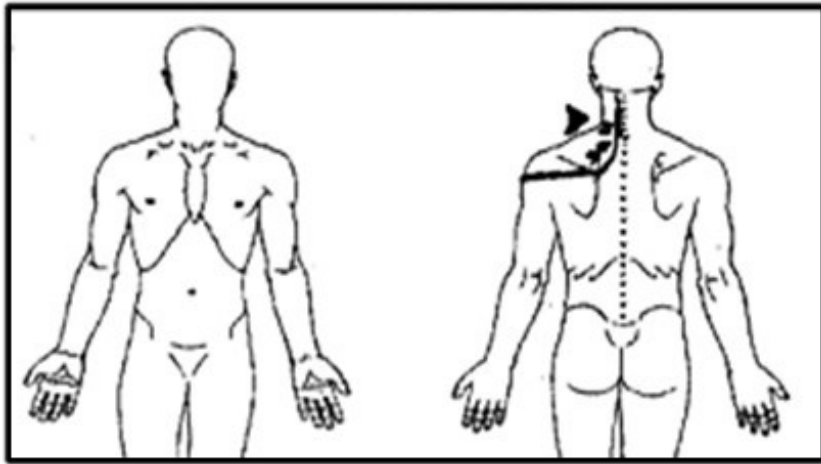
First Treatment

The first follow-up visit occurred 1 week later, and the MRI of the cervical spine was still pending. The patient received an osteopathic structural exam which revealed reduced range of motion of the cervical spine in right sidebending and bilateral rotation. Evaluation of the patient in the supine position revealed the following somatic dysfunctions: thoracic inlet (SB_L, R_R); occipitoatlantal joint ([OA], ES_R R_L); posterior left third rib; and muscle tightness with tender points in the bilateral sternocleidomastoid, bilateral upper trapezius, and left levator scapula. The patient's somatic dysfunctions were addressed with strain-counterstrain, muscle energy, and Still principle techniques (thoracic inlet and posterior third rib).

Treatment resulted in improved range of motion and was without complications. The patient reported he was virtually pain free for almost the entire week leading to the next follow-up visit. He also reported resolution of the numbness, tingling, and weakness.

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Figure 2. Pain diagram on follow-up after first OMT session. Legend: ▲ ▲ ▲ = aching; /// = stabbing; # # # = weakness.



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Second Treatment

Follow-up evaluation occurred 7 days after the first treatment. Some pain returned in the left upper trapezius region, 2 out of 10 (Figure 2). The patient attempted to have the MRI performed but could not tolerate the procedure due to severe claustrophobia.

The osteopathic structural examination revealed new and recurring somatic dysfunctions, including thoracic inlet (SB_{L,R_L}), OA ($ES_{R,L}$), AA rotated right, C4 FRS_R, and muscle tightness with tender points in the left sternocleidomastoid, bilateral upper trapezius, and left levator scapula. The patient's somatic dysfunctions were addressed with strain-counterstrain, muscle energy, and Still principles (thoracic inlet).

Self-stretch exercises were explained to the patient with demonstrations and handouts provided. In light of his claustrophobia and significant symptomatic improvement, it was decided to put the MRI on hold.

Additional Treatment

Scheduled trigger point evaluation occurred 7 days after the second OMT treatment. Some pain returned 5 days after OMT in the left upper trapezius region, 1 to 2 out of 10. No facial paresthesias were reported since initiating OMT, but some vertex headache persisted. The myofascial evaluation revealed active trigger points in the left upper trapezius and left sternocleidomastoid.

After consent was obtained, needling technique and post-needling injection of 0.5% lidocaine were applied to the trigger points. Aftercare instructions included heat and gentle, maximum isolation static stretches 3 times each day to the injected muscles.

Follow-up

By a 12-month follow-up, the patient had been treated with OMT on 11 visits. His neck and upper quarter pain had become much more focal, and the patient reported the pain was 2 out of 10. He tolerated exercising 5 days a week in a local fitness program, and he continued to perform his home stretches as needed.

Discussion

Neck pain is one of the most common conditions presenting to primary care⁵ as well as musculoskeletal specialists from multiple fields of medicine. This case presented a patient with long-standing neck pain with referral to his upper limb, head, and upper thorax.

In addition, his neurologic examination abnormalities raised the concern for a possible primary neurologic condition causing his symptoms. Despite the inability to obtain an MRI, safe and effective OMT was provided, resulting in significant relief.

Trigger point injections may or may not have been necessary to obtain maximum resolution of his symptoms. The patient was counseled on treatment options, and considering the duration this patient had been suffering with his condition, he was eager to move toward the injections sooner.

Tight muscles which developed into active trigger points appeared to be a significant contributor to his symptoms. OMT can be significantly beneficial for patients with myofascial pain. Indirect techniques (such as counterstrain), through reduction of abnormal afferent impulses to the spinal cord,⁶ present a means of reducing the tone in muscles and can be utilized to inactivate trigger points.⁴ Following effective techniques to reduce the abnormal muscle tone, manual stretches can be utilized to help restore the muscle fibers to their normal length and transition into a self-stretching regimen.

In addition, trigger points can be better treated when correcting related somatic dysfunctions.⁴ This includes addressing the "strain" or increased tension in the muscles, the articular regions associated with the involved muscle, and the spinal segmental levels of neurologic innervation to the involved muscle. Education on daily self-stretches to further maintain the effects of OMT (reduced tone and lengthened muscles) helped provide the patient with a tool to manage his condition.

Conclusion

MFP TrPs cause painful conditions for patients which can go undiagnosed or can be ineffectively treated by health care providers.

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OMT works especially well with patients who are diagnosed with myofascial trigger points. OMT can be utilized to clear-up contributing somatic dysfunctions and more acute myofascial trigger points, and it can be utilized to complement the injection of more chronic or severe myofascial trigger points.

The present case demonstrates the potential for OMT to safely and effectively provide relief from a chronic and complex pain condition, even in the presence of red-flag findings where the recommended diagnostic imaging was unable to be performed.

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