

Precision Neuromuscular Therapy Mildly Decreases Duration and Frequency of Migraine-related Headaches in 26 Year-old Male

A Retrospective Case Study

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The Migraine Research Foundation has reported migraine to be the third most prevalent illness in the world.¹ In the US alone, almost one in four households includes someone who suffers with migraine.² And while migraine is a collection of many symptoms, Migraine.com states the most common symptom-reported by 85% of sufferers-is throbbing or pulsating head pain.³ In researching this condition, I found a number of studies that show that massage therapy has a positive effect on decreasing pain in tension-type headaches (TTHA), but few studies that look at the potential relationship between dysfunctional posture and the trigger points (TrP's) created from such dysfunction (and the correction thereof) to the onset of a migraineur's headache (HA) pain. With more than four million adults experiencing chronic migraines at least 15 times a month,⁴ I feel that we, as bodyworkers with specific knowledge in treating postural distortions with Precision Neuromuscular Therapy (PNMT) techniques, have an obligation to study if/how we can be a part of their pain relief strategy.

According to a 2015 survey conducted by Migraine.com entitled "Migraine in America", even though one in four migraine sufferers seek out alternative and complementary therapies, these therapies have the highest abandonment rate.⁵ I must ask, in regards to massage therapy: why is it abandoned? Does it not produce the results that are sought out? Are patients not devoting enough time to treatment for the results to develop? Is it too cost prohibitive to continue because insurance does not typically cover/reimburse for such therapies? Or is it that we are not treating the correct issue? These are all excellent questions, and my hope is that someone (perhaps me-in another case report) will study them soon; however my main focus for this case will be on the last question posed. In any illness or condition, when we look at and treat the whole person, and not just the symptoms, we may facilitate great and lasting results that can have profound effects on the daily activities of the person afflicted with such illness. This philosophy, in the context of PNMT, translates as assessing the posture and range of motion (ROM) patterns of the entire body, so that we treat and potentially correct the true causes of pain and not just the pain itself. This idea was the starting point for my case study client.

In this case study, there are a few main terms that must be understood to understand this case.

1. Precision Neuromuscular Therapy (PNMT)-a science-, research- and client-based approach to massage therapy developed by Douglas Nelson, LMT to better and more precisely treat musculoskeletal pain. It relies on critical thinking, clinical reasoning, trigger point (TrP) therapy, orthopedic testing, postural assessment and ROM measuring to treat a client's soft tissues with accuracy.⁶
2. Tension-type headache (TTHA)-according to MayoClinic.com: "A tension headache is generally a diffuse, mild to moderate pain in your head that's often described as feeling like a tight band around your head. A tension headache is the most common type of headache...."⁷
3. Migraine-an incapacitating collection of neurological symptoms including severe throbbing pain or a pulsing sensation, usually on one side of the head, though in one-third of patients, it can be bilateral (B.). It is often accompanied by multiple other symptoms and causes significant pain for hours to days and can be debilitating.^{8,9}
4. Visual Analogue Scale for Pain-a scale of one to ten to subjectively measure one's perception of pain at any moment. One equates to a low amount of pain, five is moderate, and ten is severe. Expressed as a fraction, ex: 5/10=moderate pain.

Migraine.com patient advocate, Kerrie Smyres, declares, “The belief that migraine is just a bad headache is so prevalent that even the people we’re closest to don’t believe the extent of migraine’s symptoms. “ This belief creates a stigma and a lack of understanding with far-reaching consequences for the sufferer, especially in the workplace such as: being forced to take medical leave or to have to stop work altogether.¹⁰ Migraines are quite often described as debilitating¹¹ and can have an effect on other areas of daily living also, like: straining relationships, limiting social activities/contact and diminishing self-esteem.¹² This is important because migraine occurs mainly in people between the ages of 25-55, people who are in their prime years for career and raising families. It affects 18% of women, 10% of children and 6% of men. Additionally, 90% of all migraine sufferers report a family history of migraine.¹³ With such a huge impact on patient’s lives, it is important to discover more avenues that lead to relief.

Other common signs and symptoms of migraine not included in the above definition can be nausea, vomiting, and extreme sensitivity to light, sound, touch and/or odors. Less common symptoms may include dizziness, tingling, or numbness in the extremities or face.^{14,15} Some people experience prodromal symptoms, signs that warn of an oncoming migraine. Prodromal symptoms occur in only 15-20% of sufferers,¹⁶ however, for that small population, they are helpful in that sometimes the migraine can be diffused in its infancy by treating it as soon as the prodromal signs occur.

There are many options to treat a migraine, both allopathic and alternative. Once it has been diagnosed, migraine is normally treated with one or more of a host of over-the-counter (OTC) and prescription drugs. Many sufferers use abortive medications, something taken at the onset of symptoms to cease or reduce pain/symptoms. Most start with OTC’s such as aspirin, acetaminophen, and non-steroidal anti-inflammatories like ibuprofen, naproxen sodium, and various combinations of these along with caffeine. When more is needed, there are prescription drugs available that fall into one of three categories: pain relievers, vasoconstrictors and anti-nausea medications. Opioids have been used, but because they are narcotic and highly addictive, they are typically prescribed only when other meds cannot be tolerated. Other types of drugs, known as glucocorticoids, are steroidal anti-inflammatories and are used in conjunction with other medications to improve pain relief. Some migraineurs choose to take preventive medications, often daily, to prevent the onset of symptoms or reduce the frequency and/or severity of attacks. This is normally used when other methods are not successful.^{17,18} Despite many options for treatment, MayoClinic.com reports only 40% of migraineurs are satisfied with their current treatment plans.¹⁹

Many alternative methods have been used in the relief and prevention attempts by migraine sufferers, like acupuncture, herbal remedies and massage.²⁰ For this case study, we will only focus on the effectiveness of massage.

Keywords that I used to research literature and pertinent studies were:

- a) Migraine
- b) Migraine and massage
- c) Headache and massage
- d) Posture and migraine
- e) Posture and headache

The articles and studies that I found did not specifically address a relationship between migraine symptoms and posture, but there were several that looked at posture, mainly forward head posture (FHP) and TTHA. A small case study consisting of 20 students with episodic migraines and 20 age- and sex-matched healthy controls were observed to support the hypothesis that the prevalence of TrP's in neck muscles and hypomobility in the upper cervical facet joints were associated with migraines. No significant differences were found in neck ROM measurements and FHP between the 2 groups.²¹ However, another study conducted in 2006 at the Universidad Rey Juan Carlos, in Madrid, Spain assessed the differences in the presence of Trp's in head/neck muscles, FHP and neck mobility between episodic TTH subjects and healthy controls. They concluded that active Trp's in the upper trapezius, sternocleidomastoid (SCM) and temporalis were more common in episodic TTH patients than in healthy controls and that episodic TTH patients showed greater FHP and lesser neck ROM than healthy subjects.²² And lastly, a study published in a 1998 International Journal of Neuroscience concluded that twenty-six adults with migraine headaches who received two 30-minute massages per week for five consecutive weeks reported fewer distress symptoms, less pain, more headache-free days, fewer sleep disturbances and increased serotonin levels compared to the control group.²³ Based on these meager findings and lack of more, if there exists a possible correlation between the prevalence of TrP's in cervical muscles, limited neck ROM and increased FHP in those with episodic TTH (a symptom of many migraineurs) and better migraine symptom management after receiving massage, then more studies need to be conducted regarding the relationship between posture (whole-body, not just cervical) and migraine symptom relief.

At the time my client and I began working together, he was 26 years old, 5'8" tall, and weighed 135 lbs. He directed children at a youth theater approximately ten hours/week and was mostly on his feet moving around continually. He also worked occasionally as a lighting designer and his duties varied gig-to-gig. The hours were long, late, and came in spurts. He often worked over-head or on a ladder, on his knees crouched over, or sitting hunched over a lighting board. He quit smoking two months prior to starting PNMT treatment, regularly consumed twelve-12 oz. bottles of beer a month, and drank plenty of water daily. His elimination habits were normal, and he did not exercise regularly beyond what he did at work. There was a familial history of migraine, with his father, paternal grandparents and 4 paternal aunts all having been sufferers. His history of pain included his neck, head, mid-back, low back, jaw and behind the eye pain. He often experienced nausea, digestive issues, and anxiety. In his opinion, all these symptoms were migraine-related. His HA and migraines started at age 20, were diagnosed at age 21, and they spiked at age 22. He reported no accidents or injuries in the last five years, but did explain that he typically had 20+ HA/month.

His HA's generally came on all at once, but sometimes he did experience prodromal symptoms. Some signs were increased sensitivity to light and occasionally an aura. Known triggers were certain foods, weather pressure systems and increased stress. Bright lights, loud noises, strong scents, straining or pressure during voiding or defecating, and stress made them worse; darkness, quiet, rest/lying down, ice on his neck and forehead, medicine, stretching and head/neck massage could make them feel better.

Typical episodes started with a TTHA then progressed to a migraine, then decreased back to a TTHA before subsiding. He normally experienced a throbbing pain that was centralized at his right temple, that dipped into his temporal mandibular joint (TMJ), continued in an arc around the right ear and down the posterolateral neck. Other symptoms that he experienced were: a dull ache behind the right eye; loss of

appetite; loss of energy and focus; sensitivity to light, sound and smells; nausea when pain was above 8/10; vomiting sometimes; and right (R.) neck, occiput and upper back pain. His HA's commonly lasted 6-48 hours, with the longest having lasted four-and-a-half months, the bigger ones usually lasted two to three weeks and his last big occurrence was one month previous to starting PNMT sessions. His usual intensity was 6-7/10 and they normally occurred three times per week, unmedicated; and one to four times per week, medicated. When he has a HA, his quality of life is significantly reduced, and daily living activities are completely limited an average of four times per month.

He had tried many different treatment methods including: chiropractic, by itself and in conjunction with acupuncture; Botox injections; occipital nerve blocks; general full-body massage; and many abortive, anti-nausea and preventative prescriptions. Of all the treatments tried, the occipital nerve blocks worked the best for reducing intensity and frequency but he no longer received them due to insurance issues. My client's treatment goals were to reduce frequency, duration and/or intensity of his migraines and associated symptoms through improved posture.

We began sessions in June 2016 and ran through October 2016 for a total of 14 sessions that lasted 60-90 minutes each. There was an average of nine days between visits (range: 3-36 days) over the treatment period, however, more than 50% of all visits occurred within three to four days of the last.

Treatment 1-90 mins

My client described having a migraine centralized in his R. temple and TMJ. He rated his HA pain 7/10. He explained that his pain was in his R. neck, occiput and R. upper back near his shoulder blade.

Using visual assessment to determine his posture, I first noted a five-centimeter FHP and that his head was side-bent left (L.). He also had a decreased space between the base of his skull and the top of the back of his neck. His L. shoulder was higher than the R., but both were anterior in relation to his upper chest. When observing his torso, his spine had an "S"-shaped curve and his chest was caved anteriorly. His L. hip was hiked and the R. dropped, and the entire pelvis seemed anteriorly projected as evidenced by his B. greater trochanters presenting anterior to his knees. Lastly, his R. foot and knee were externally rotated.

I performed a cervical patency test and cervical facet test; both were negative. I also used the long-sit test to distinguish between pelvic obliquity and pelvic unilateral flexion: the test was negative for unilateral flexion, therefore supporting the observed obliquity.

The case-long treatment plan that I devised based on these findings was to first: decrease his cranial extension and reduce his FHP and HA referral pain. Second: to correct his pelvic distortions and "S" curve in his spine. Third: to correct his caved chest, medially rotated shoulders and shoulder height discrepancy. His goals for today were to: 1) reduce his HA pain; 2) reduce his neck pain.

To address his HA and occipital pain, I worked B. rectus capitis posterior (RCP) minor, R. obliquus capitis inferior/superior, R. occipitalis and then moved onto addressing his neck pain by doing general work on his other posterior cervical muscles. We found tender points in all the muscles worked on in his occiput and posterior cranium. Of special note: A TrP in his R. occipitalis referred stabbing pain to his R. eye (a common area of pain for his HA's).

Post-treatment (Post-Tx): his HA pain reduced to 6/10 and he felt a slight increase in his neck ROM. No change in posture was observed. I demonstrated chin tucks to stretch his suboccipitals. For our next session: I planned to address specific posterior neck muscles to decrease his cranial extension; and anterior neck muscles to reduce his FHP and HA referral pain.

Treatment 2-120 mins, 15 days elapsed

My client reported a migraine HA that began two days ago, 7/10 pain located in R. temporal/occipital arc and a little in his R. TMJ.

At the beginning of the session I observed that he had greater L. lateral cervical flexion versus the R., however, cervical flexion and B. cervical rotation were normal. We found many tender points in his B. upper trapezius, and a TrP that referred a familiar pain to his R. TMJ. A TrP midway in his R. SCM-sternal head referred to the epicenter of his migraine arc in the R. lateral cranium. There was pain at his L. anterior and middle scalenes at the first rib-8/10, and along the L. anterior tubercles of C1-C6. Due to this finding, I then worked the L. longus colli/capitis. He also had some tenderness in R. semispinalis, 7/10.

Post-Tx: He stated his pain had dropped to 5/10, and visually, his R. cervical lateral flexion had increased closer to normal. No changes were noted in his shoulder height or FHP. I demonstrated some gentle stretches to increase cervical lateral flexion, forward flexion and a combination of forward flexion with a slight rotation. For his next session I intended to work on his R. latissimus dorsi and lower trapezius to address the shoulder depression; L. middle trapezius to decrease his scapular retraction; and the spinal muscles that may be involved in his scoliosis.

Treatment 3-90 mins, 3 days elapsed

Client stated he still had a HA, 5/10 today, and that his shoulders felt “much looser than they have in a long time”.

Focusing on his shoulder height discrepancy, I worked the R. middle/lower trapezius, R. latissimus dorsi, R. pectoralis minor, R. subscapularis, L. levator scapula-superior angle, L. C1-C4 posterior tubercles, and L. upper trapezius. Moving to his caved chest posture I concentrated on his rectus abdominus, B. costal cartilage, and superior pubic ramus. Lastly, I worked on his rectus capitus posterior major and minor for his FHP. Noteworthy: a TrP on his R. costal cartilage referred to the epicenter of his HA and a second TrP above that one recreated his nausea. After work on R. mid/low trapezius, latissimus dorsi and pectoralis minor, shoulder height was still slightly uneven, but improved. More work was done on L. levator scapula/upper trapezius and after that, the shoulders were visually even.

Post-Tx: His chest concavity decreased slightly and his hips were level. His pelvis was still anteriorly projected and B. shoulders were still internally rotated. HA pain decreased to 3/10. Looking ahead, I planned to continue working on muscles to reinforce his level shoulder posture and decreased chest concavity. I also needed to address his erectors for his scoliosis; and his quadratus lumborum, obliques, diaphragm, hamstrings and gluteus maximus for his anteriorly projected pelvis.

Treatment 4-60 mins, 4 days elapsed

Client reported his migraine was gone and HA was now manageable, 2/10. He feels that his body went back to pre-massage posture, but feels also that some areas still feel better, “looser”. He reported that his R. shoulder feels like he “slept funny” on it and he has pain from his shoulder blade up to the bottom of his head.

I worked rectus abdominus and found the TrP at edge of his R. costal cartilage still referring to his head, but only pressure this time, not pain, as in the previous session. The TrP superior to that still created nausea. I also worked B. diaphragm and noted B. tenderness with more on the left. I then massaged his R. superior erectors and L. inferior erectors that may have been contributing to his “S” curve. I finished by working on his L. quadratus lumborum for its contribution to pelvic obliquity.

Post-Tx: the client’s L. shoulder was, again, higher than the R., but he did state that he felt loose and open. “Things feel like they are in a different [place].” His reported HA pain was 2/10. Heat was suggested for his neck and back and I demonstrated a new stretch for his neck/shoulders/chest: He was to lie on a bed face-up with his head at the edge of the bed placing a hand towel rolled up long-ways between his scapulae and under and in-line with his spine. He would then raise both his arms overhead into full flexion while performing a chin tuck. Hold for 5 seconds, release and repeat. I also demonstrated how to do side-bends for his latissimus dorsi. For our next session, I wanted to explore his pectoralis major, subscapularis, and latissimus dorsi for his shoulder height; and his hamstrings and gluteus maximus for the anterior pelvic projection.

Treatment 5-60 mins, 9 days elapsed

On arrival, client stated he had a HA, 3.5/10 today, but reported that he had a migraine up to yesterday that lasted 36 hours.

I began by working on his B. multifidi at L1-S3, and B. gluteus maximus. When working on R. hamstrings, I found it remarkable that a TrP in the medial middle one-third referred to the L. side of his neck, then a TrP found on the middle one-third of his L. hamstring referred to epicenter of his typical migraine arc on the R. side of his head. These both are atypical referral patterns for hamstrings. To reinforce the work, I used proprioceptive neuromuscular facilitation (PNF) to stretch his B. hamstrings and gluteus maximus.

Post-Tx: There was no change in his FHP and his HA had decreased to 2/10. The new stretches I demonstrated were for hamstrings in standing, and a stretch/mobilizer for his neck muscles by rotating left, slowly tipping his chin down, then extending back, head back to neutral and then rotating back to center and repeating on the opposite side. For our next session, I planned to work his pectoralis muscles, and rectus abdominus to continue to realign his caved chest.

Treatment 6-60 mins, 5 days elapsed

He reported that he had a HA that started midday and he took a pain relieving cocktail comprised of his prescription medications that took the edge off, but the pain was still not gone, 7/10. His pain pattern was in his R. temple and occiput, neck and upper shoulder and there was pressure in the migraine arc.

To relieve the pain in his neck and upper shoulder, I worked on his B. upper trapezius, R. scalenes and levator scapula. Moving on to addressing his shoulder height discrepancy, I then worked B. pectoralis major.

Post-Tx: His HA decreased to 6/10 and he stated that his neck “felt much better”. Visually, his shoulders were much more even in standing. Stretches suggested and demonstrated in this visit were: chin tucks, doorway stretch for pectoralis major, corner stretch for pectoralis minor, and performing the pin and move technique we used in session for his pectoralis major. In his next session I intended to continue to tackle muscles affecting his caved chest and anteriorly projected pelvis.

Treatment 7-60 mins, 6 days elapsed

Today he reported no migraine; however he did have one three-and-one-half days ago. He did have a head cold and sinus HA today. He reports that he has been compliant with his stretching at home.

I started with his R. latissimus dorsi and teres major for the depressed shoulder. There was still pain in his B. hamstrings, with his R. having more than the L.; the R. hamstring still referred, but now into the L. temple instead of his L. neck. I progressed to his rectus abdominus and his B. tensor fascia latae (TFL) for his pelvic distortions. I noted moderate hypertonicity on the L. and severe hypertonicity on the R., which fits with his right pelvic obliquity.

Post-Tx: Visually re-assessing his posture, it was noted that his pelvic obliquity had vanished, and his anteriorly projected pelvis had decreased slightly; however, his shoulders were still angled up to the left and rounded forward. I demonstrated a new stretch for his hamstrings from supine using a strap or towel around his foot to pull the leg into flexion. In the next session I planned to re-address his TFL for his pelvic distortions, work on his FHP and shoulder posture.

Treatment 8-60 mins, 3 days elapsed

He had a small migraine with HA today, but took medication this morning, pain was 3/10. He had been doing stretches daily and he felt it was helping.

Before we began, I noticed his B. iliac crests were still even, his L. shoulder was still slightly higher than his R., and his B. pelvis now exhibited posterior pelvic inclination. Dealing with his pelvic posture first, I worked B. TFL, gluteus maximus and iliotibial band. I then turned my focus to his shoulder height and FHP by working on B. pectoralis major, subscapularis, SCM's, scalenes and RCP major and minor, and his R. pectoralis minor.

Post-Tx: The shoulders showed decreased internal rotation and the angle was noticeably less. No new stretches were added this session. For our next session, I wanted to continue to work on his pelvic posture by adding in his adductor magnus and quadratus femoris; and continue to work on muscles contributing to his FHP.

Treatment 9-60 mins, 4 days elapsed

He is still complying with home stretches and he feels it is going well. He had a migraine over the past 36 hours, but it was gone this morning.

The Spring Test for rotatores was positive for T5-T7, so I worked that area. There was local pain only noted in B. hamstrings and I used PNF to stretch them in supine. I also worked B. adductor magnus belly and attachments and passively stretched them.

Post-Tx: B. hamstring length=120° (normal); B. adductor magnus length=40° (normal). His B. anterior superior iliac spines and greater trochanters remained even; his FHP lingered; B. shoulders continued to be internally rotated; however, no concavity of chest was observed; and his B. pelvic position was now corrected to normal range for a male's anterior inclination (0°-5°). I added a new stretch for his adductor magnus: client kneels on one knee and turns torso toward and leans into kneeling leg to increase angle between pelvis and femur of bent leg. Looking ahead, I planned to continue working the same muscles as in the last two sessions to support and further the progress already gained.

Treatment 10-60 mins, 3 days elapsed

Client states he is having difficulty performing the new stretch. He had a moderate HA with migraine, 5/10.

No pain or TrP's were noted while working on hamstrings today. B. adductor magnus were very tender. I worked superior rectus abdominus and the TrP on the R. costal cartilage still referred to migraine arc on R. side of head. Pectoralis major had notably more hypertonicity on the R. versus the L., but they both were more pliable when compared to his previous session. I also worked on his B. RCP minor and stretched his SCM's with the head in supine, as I supported it, off the top of table.

At the end of the session, his HA hadn't changed, still 5/10, but he expressed that he felt "looser, straighter". Visually, his pelvis remained at a normal anterior-to-posterior angle and his FHP had decreased. For the next session, I planned to concentrate on his FHP now that his pelvis was closer to a normal posture.

Treatment 11-60 mins, 36 days elapsed

Client came in with a HA today, 4/10, and a head cold. He stated that he had been working on lights overhead for the last few days.

During this session I focused on his FHP by working on his B. RCP major/minor, B. upper trapezius, B. posterior cervicals, L. semispinalis, R. splenius capitis, and L. SCM.

Cervical ROM measurements taken this session:			
Motion & Norms	Pre-Tx	Post-Tx	Change in this session
Flexion (40°)	45°	58°	+13°
Extension (75°)	65°	71°	+6°
L. Lateral Flexion (35-45°)	50°	52°	+2°
R. Lateral Flexion (35-45°)	48°	48°	0
L. Rotation (80-90°)	60°	75°	+15°
R. Rotation (80-90°)	90°	98°	+8°

Post-Tx: His HA pain had not changed, still 4/10. I suggested stretching his posterior cervical and suboccipital muscles using capital and cervical flexion, and using some ice on his occipital area. Because

he had improved his numbers so much, we decided for our next session to do a full-body, PNMT integrated massage to decrease his stress, increase his relaxation and to support the PNMT work and postural/ROM gains we have made thus far.

Treatment 12-60 mins, 10 days elapsed

Client explained that his HA was “coming and going in waves” today, pain was “not too bad”, 4/10.

While he was in prone, I noted that his R. pelvis seemed more rotated than the L. and he still had a slight levoscoliosis in his upper thoracic spine. In supine his B. shoulders were anterior and some mild hypertonicity was detected in his B. pectoralis minor.

Post-Tx: Client stated he had considerable difficulty allowing himself to fully relax and had to continually make a conscious effort to do so throughout the session. For our next and final session, I planned to continue working on any areas still out of alignment.

Treatment 13-60 mins, 4 days elapsed

Client stated he felt like he was “tip-toeing” around the beginning of a migraine. His R. temple felt bruised, the back of his head hurt and his R. neck was tight. His pain was 4/10.

I noted that his R. eye was half-closed, his R. shoulder was higher than the L., looking at him from the R., his L. scapula was visible revealing a L. thoracic rotation, and he still exhibited an FHP. Concentrating on his trunk rotation, I worked his R. external oblique, L. internal oblique, L. rotatores, and L. serratus posterior inferior. Directing my attention to his tight neck, I massaged his R. iliocostalis cervicis, R. semispinalis cervicis, and B. upper trapezius. I ended the session by working on his R. masseter and temporalis for his TMJ pain.

Post-Tx: He stated his TMJ pain had decreased slightly and I noted that from the side view his thoracic rotation had decreased. At this point, I began to wonder if his TMJ pain may not have been a symptom, but rather, possibly, a cause of some of his HA pain. We discussed that it was often present during his episodes, and decided that it was worth exploring the TMJ more thoroughly in our next session.

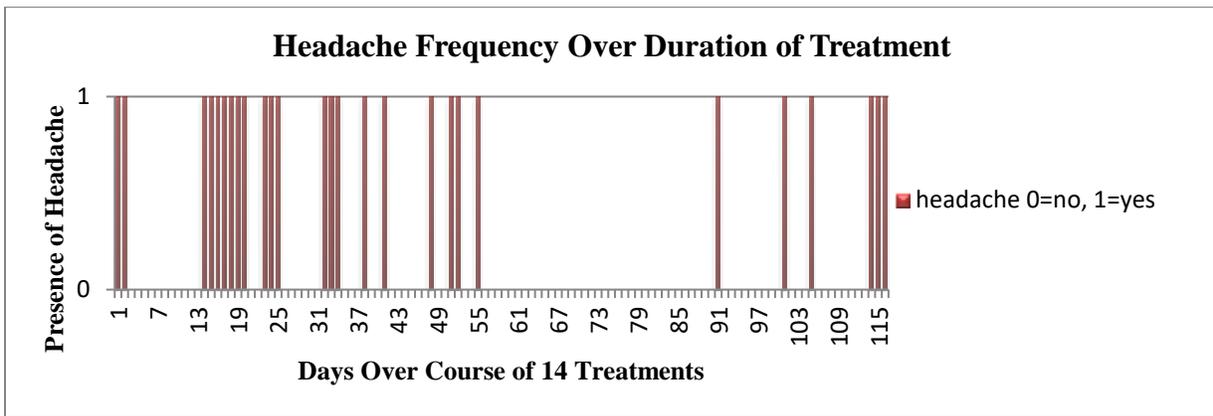
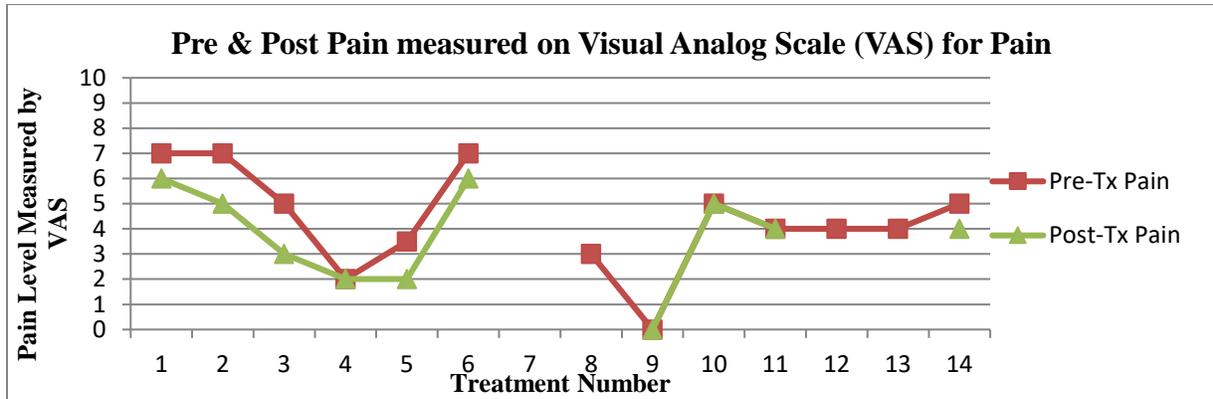
Treatment 14-60 mins, 11 days elapsed, final treatment

He had a HA that started 2 days ago, has had difficulty sleeping and he feels that storm pressure was a factor. His pain was 5/10 and he has not taken any meds for it.

Before we started treatment, I measured his mouth/jaw ROM with a TheraBite® at 50mm. I then worked on his B. masseter deep head (intra-orally), R. masseter superficial head, R. RCP major and minor, his R. nuchal line and R. SCM. I ended with MFR over his entire scalp.

Post-Tx: I re-measured with the TheraBite® at 55 mm, and he reported his pain was reduced to 4/10. He stated “tension has gone down”, it was now mainly in his R. temple. Although this was our last official session for the case study, I advised him to continue with stretching routines and regular massage/PNMT sessions to maintain his posture, reduce stress levels and further improve his posture.

The following graphs show his pretreatment and post-treatment pain levels for each session (except number 7, it wasn't noted for that session) and HA frequency (though this data was not as accurately tracked as intensity, especially for the 36 days between visit 10 and 11), respectively.



In the end, I feel that this case was neither an outright success nor a complete failure. We made some progress, although it was small and slow to be sure. We reduced his overall pain intensity and frequency slightly, improved his posture as evidenced by our measurements and educated him on how to be more body-aware. Better posture-whether it improved his migraine and headache symptoms or not-will benefit him in his long-term, overall health. I feel that we made some progress in this area, even if we didn't make huge gains in what we originally set out to accomplish.

There were a few challenges that I confronted in this case; some I sought outside help to overcome and others I was able to reconcile on my own. In each challenge, I feel that I was able to learn more and grow as a PNMT practitioner.

Dealing with my own frustration over not achieving greater results, faster.

I discussed my feelings with a mentor who is PNMT certified and she helped me see that it wasn't the end result I was after, it was the journey where I would learn the most. She helped me find my patience and renewed my curiosity in and commitment to the PNMT process.

Working with ever-present, albeit varying levels of head/neck pain constantly challenged my palpation skills and depth-control.

We were sure to always quantify his pain level before each session to guide the depth and breadth of work to be done that day. Using the PNMT guidelines of working slowly, warming an area first, then moving gradually from light to deep work helped to keep the work mostly tolerable, if not comfortable for my client and afforded very few set-backs.

Client's irregular work schedule and unreliable transportation made regular intervals between sessions problematic.

Because I knew this client outside of my practice, I was open to, on occasion, changing venues and/or my schedule to accommodate his needs so that we were able to stay on schedule (and so that I could keep my case-study on track). I recognize that this is not realistic with everyday clients that I do not share that type of relationship with, and it is ultimately their responsibility to advocate and plan for their own well-being within the confines of a given practice.

Numerous symptoms that accompany his migraines made prioritizing work and goals challenging.

Although I created a plan at the end of each session for the next, I always discussed with my client what he was feeling and where at the beginning of each new session. I needed to remain flexible and work where it was most needed that day, putting my plans aside in lieu of his more immediate goals. In the end, we always kept sight of the larger goal, recognizing that the altered smaller goals were a part of the journey and I had much to learn from each step.

Being exposed to the emotions and energy of a client who is constantly in pain.

Reading the book, *Mystery of Pain* by Douglas Nelson, and then attending his workshop of the same name gave me more insight into how my client's pain may have been affecting him, and what factors might have contributed to his pain experience. It helped me understand and sympathize with his situation more compassionately.

In studying this case, I often thought of how an exercise/strengthening plan might help this young man in supporting his postural changes. With such a host of postural distortions and symptoms, I might suggest to someone working a case similar to this one to work in conjunction with a Certified Personal Trainer to strengthen the client's core and/or a Doctor of Physical Therapy who specializes in or is very familiar with migraine patients. When my client was experiencing his worse HA's, I did notice more whole-body sensitization, so this multidisciplinary approach could also prove very advantageous not just to correct his posture but to reduce pain symptoms overall. In the future, if I work with this client again, I would ask him to keep a detailed HA journal so that we have more information to use to track our progress. I would also like to take periodic photos of the client to demonstrate his progress in gaining better posture.

In the realm of migraine research, there is much out there, but still many unanswered questions remain when it comes to the relationship between migraine and posture. I would love to see more studies done exploring this relationship, especially where pelvic distortion is involved with FHP.

Notes

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