



Clinical Case Report Competition

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Second Place Winner

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The effect of myofascial release and manual lymph drainage on chronic tension headaches

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ABSTRACT

The object of this case study is to study the effects of myofascial release and manual lymph drainage on chronic tension headaches. Currently there is a limited body of research in the use of these modalities for treating chronic tension headaches. Ten 90 minute treatments were performed over a period of 5 weeks on a 28 year old male. Treatment frequency was twice per week. Methods used included myofascial release to cranial, cervical and thoracic structures, and Vodder manual lymph drainage sequences for the neck, face, and nape of neck. Results included a reduction in headache frequency, intensity and medication use, as well as improved postural alignment and increased cervical ROM. The client reported better sleep patterns, an increase in energy levels, and better postural awareness. This study's results support the idea that myofascial release and manual lymph drainage can be a viable treatment option for chronic tension headaches.

INTRODUCTION

Tension headaches are the most common type of headache. They are defined as “pain or discomfort in the head, scalp, or neck, usually associated with muscle tightness in these areas” (PubMed, 2011). To be defined as chronic, a headache must occur on 15 days or more per month for at least 3 months (International Headache Society, 2004).

Factors predisposing to chronic tension headaches include trigger point stimuli and perpetuating factors, such as; fatigue, referred pain, emotional stress, disturbances of deep restorative sleep, and postural imbalances (Rattray, 2005). Posture seems to play an important role in the etiology of chronic tension headaches. Patients with a head forward posture and a slumped upper back frequently present with tightness in the posterior neck muscles, stretch weakness of the anterior vertebral neck flexors and compression on the posterior articulating facets and bodies of the cervical vertebrae. Tension headaches are one of the two types of headaches associated with this postural presentation. In addition to posture, stress is also an element predisposing to tension headaches, with the pain fluctuating with periods of increased or decreased stress (Kendall, 2005).

Chronic headaches are a common complaint in today’s society. A study performed on a population sample in the US concluded that the prevalence of frequent headaches is 4.1% in the general population, with increased prevalence

in females (1.8-1 female to male ratio), Caucasians, and those in the lowest educational category (Scher, Stewart, Lieberman and Lipton, 1998). Chronic headaches are difficult to treat, and due to their high prevalence pose a significant economic burden on society. One study that examined the impact of chronic tension-type headache on work, social functioning, and well-being, found that headache sufferers reported significant impairments in functioning, well-being, sleep and energy level. Although they continued to carry out life responsibilities when in pain, their performance was clearly impaired by headaches. Also, headache sufferers were 3 to 15 times more likely to be diagnosed with a mood and anxiety disorder than controls. The study concluded that “chronic tension-type headache has a greater impact on individuals' lives than has generally been realized, with affective distress being an important correlate of impairment” (Holkryod, 2000).

Traditionally, the treatment for this condition is medicamentous. The medications used for symptom relief range from over the counter pain relievers such as ibuprofen and acetaminophen to prescription combination medications combining acetaminophen, caffeine, and a sedative drug. Over time, these pain killers can lose their effectiveness, and their overuse might lead to the development of medication overuse headaches. Other medications are used preventatively, in order to reduce the frequency and severity of attacks. For example, antidepressants are used preventatively, in order to stabilize the levels of serotonin,

which has been implicated in headache development (Mayo Clinic, 2011). Anti-depressants are indicated as a preventative headache treatment even if the patient is not currently suffering from depression.

There are a limited number of research studies concerning the efficacy of manual lymph drainage, myofascial release and other massage therapy modalities in the treatment of chronic tension headaches. A literature search revealed an Italian study examining the treatment of chronic tension-type headaches with manual lymph drainage. The study found that headache patients reported a reduction in pain frequency and intensity (Longo et al, 2006). A large blinded research study investigating the effects of myofascial release in managing tension headaches found a reduction in headache frequency in those receiving myofascial release when compared to the control group (Ajimsha, 2011).. Another research study reported a decrease in headache frequency and duration in participants receiving massage therapy comprising of myofascial release, cervical traction, trigger point release, facilitated stretching and Swedish massage (Quinn, Chandler and Moraska, 2002). Although the literature is scant, the results of these studies indicate that manual lymph drainage and myofascial release could be of benefit in the treatment of chronic tension headaches, and that more research is warranted.

CASE HISTORY

The 28 year old male client, which will be referred to as Joe (real name omitted in order to protect client privacy), presented with frequent headaches. Joe is height-weight proportionate, and does not suffer from any other health care conditions. Joe has been suffering from frequent headaches for the past year and a half, with a frequency of 3 to 4 times a week. He feels that his headaches negatively affect his work productivity and general sense of well-being.

Joe usually feels the pain on his posterior neck, suboccipital area, and/or along the sides of the head. Onset is usually in the afternoon, but he sometimes wakes up with a headache. He takes one or two ibuprofen pills when he gets a headache, averaging 5/6 pills a week. Joe says that if he doesn't take medication the headache doesn't go away, and intensifies. He works as a programmer, and feels that working on the computer increases the frequency of his headaches. He reports that his eyes get tired and his neck gets stiff while sitting at his desk, and thinks that this might be contributing to his headaches. He wears contact lenses for vision correction. He has mentioned his headaches to his family doctor, who determined that they were not migraine headaches, and advised him to try resting his eyes by looking away from his computer screen at frequent intervals.

He sleeps around 7 hours a night. He says that he has a hard time falling asleep, and it sometimes takes him two hours to fall asleep.

He does not work out or engage in many physical activities at the moment, except for indoor volleyball about once a week. He mainly works from home and sits at his desk about 9 hours a day. After work he plays video games or watches TV. He smokes 4-5 cigarettes a day.

Joe drinks two cups of coffee a day, along with one or two glasses of juice, and a couple of alcoholic beverages at night. He reports that he does not like to drink water.

Joe rated his stress level at 4 out of 5, due to a very demanding work schedule. He related having had a tough year due to personal and financial difficulties, which he feels correlates with the intensification of his headaches. He rates his activity level at 1 out of 5.

ASSESSMENT

The assessment consisted of a thorough case history in order to get to know the client and determine what lifestyle factors could be contributing to his complaint. A postural assessment was also performed, revealing moderate head forward posture, slight hyperlordosis, moderate thoracic hyperkyphosis, moderate anteriorly rotated shoulders and pes planus. Cervical AROM, PROM, and RROM were assessed, revealing limited AROM in side flexion bilaterally (L>R), and limited AROM in flexion. Spurling's test was negative for facet joint irritation.

Palpation of the cervical musculature indicated hypertonicity in the upper trapezius, sternocleidomastoid, and suboccipitals bilaterally.

Joe was provided with a headache journal in order to track various variables related to his headaches. This journal was used as the main tool of assessment and reassessment for this client. Using this journal, Joe was asked to track the date of the headache, the time of onset, the duration and location of pain, the intensity of the pain, possible triggers, and additional thoughts. The journal was started two weeks prior to his first massage therapy treatment in order to establish a baseline, and continued for one week after his last treatment, in order to establish lasting effects after treatment discontinuation.

METHODS

Each of the ten treatments lasted approximately 90 minutes, including the assessment, and were performed over a period of 5 weeks.

The treatment goals were releasing fascial adhesions in order to improve posture and decrease muscle tension in the thoracic and cervical areas, decreasing sympathetic nervous system firing, and facilitating circulation and drainage of waste products from connective tissue. Treatments were started with an interview in order to assess the client's reaction to the previous treatment, to review his headache journal, and to monitor compliance with homecare recommendations.

Full body compressions were applied through the sheets in the beginning of each treatment to introduce touch. This was followed by myofascial release techniques in the supine position. The myofascial release comprised of assessment of fascial movement, followed by direct fascial techniques, waiting for three releases. Manual lymph drainage techniques to the neck and face were applied in the supine position, and the nape of the neck was treated in the prone position. The treatment was finished with gentle full body palmar stroking over the sheets in order to further decrease SNS firing.

The following specific protocol was followed during the treatments:

Treatments 1-6

Introductory techniques: Full body compressions to introduce touch

Myofascial Release:

- *MFR of Platysma* – one hand fixates at clavicle, while the other stretches insertions at mandible, waiting for 3 releases
- *MFR of anterior chest* – cross hands placed at GH joints opening up anterior chest, after each release client pushes into therapist's hands gently for 20 seconds and relaxes – 3 releases total

- *MFR of Upper Trapezius bilaterally* – therapist grabs entire muscle belly and assesses movement, waiting for 3 releases in the direction of restriction
- *MFR of SCM bilaterally* – therapist grabs entire muscle belly and assesses movement, waiting for 3 releases in the direction of restriction
- *MFR of deep posterior neck fascia* – fingertip raking of posterior neck followed by fascial stretch of posterior neck, waiting for 3 releases

Manual Lymph Drainage (Vodder Method):

- Anterior neck sequence (10 min)
- Face sequence (20 min)
- Posterior neck sequence (10 min)

Closing techniques: Full body gentle palmar stroking

Treatments 7-10

Introductory techniques: Full body compressions to introduce touch

Myofascial Release:

As per Treatment 1-6 protocol, with the addition of the following techniques:

- *Fascial arm pull bilaterally* – starting with client's into abduction, the therapist holds client's arm above wrist, applies slight traction, and slowly

takes arm into abduction and external rotation, feeling for restrictions and waiting for restriction throughout the ROM

- *Epicranius Release* – fascial hair pull, therapist grabs client's hair in 4 places along the galea aponeurotica, and waits for a fascial release

Manual Lymph Drainage (Vodder Method):

- Anterior neck sequence (10 min)
- Face sequence (20 min)
- Posterior neck sequence (10 min)

Closing techniques: Full body gentle palmar stroking

Homecare

Set alarm every 30 minutes while working at computer to perform the following two homecare recommendations:

- Brugger's Exercise, once every 30 minutes while at computer, hold for 30 seconds
- Upper Trapezius stretch - bilateral, hold for 20 sec, repeat twice, every 30 minutes

Go for a 10 minute light jog every weekday morning

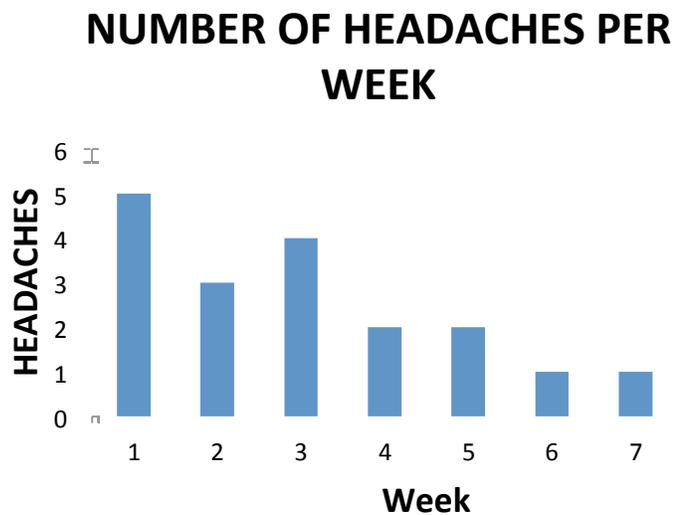
Drink two litres of non-caffeinated, non-alcoholic fluids a day

Try to get up from the computer and take a five minute break once hour

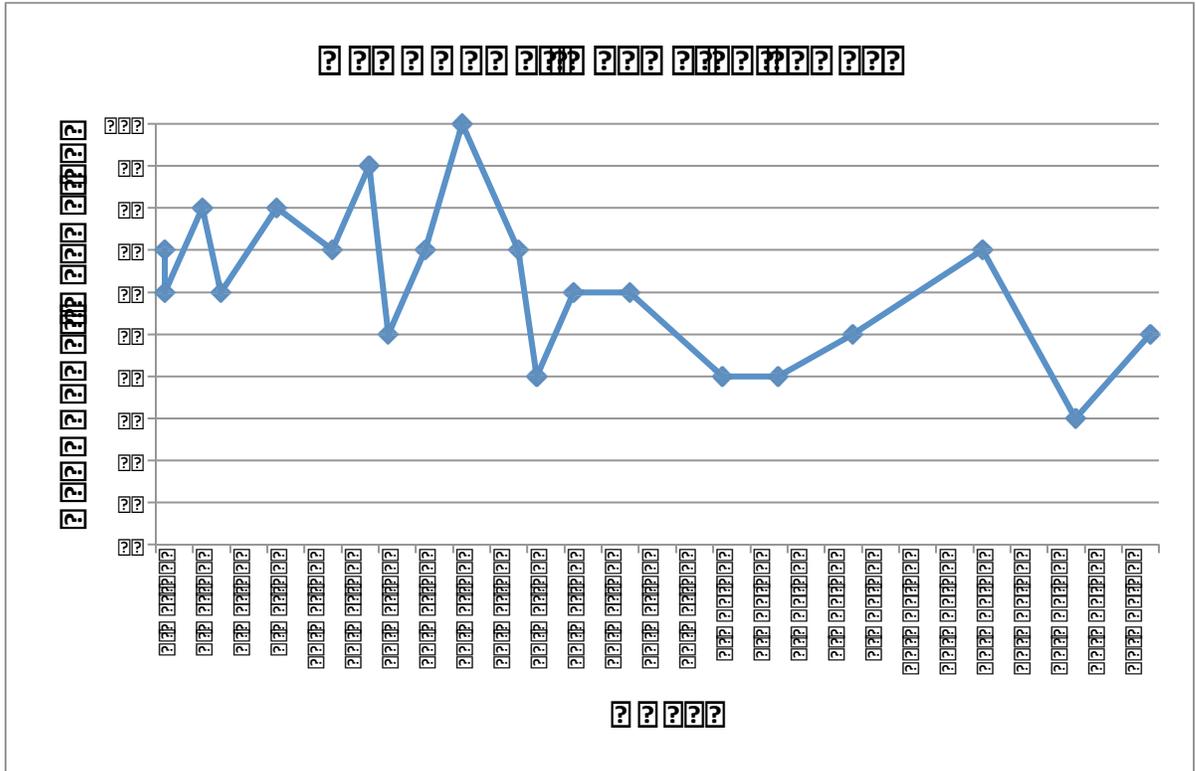
Diaphragmatic breathing – when going to bed at night, take 10 deep diaphragmatic breaths to calm the SNS firing

RESULTS

The client exhibited a reduction in headache frequency. Based on his headache journal he averaged 4 headaches a week in the two weeks prior to starting the treatment (weeks 1 and 2), which was normal for him. During the first week of treatment (week 3) he suffered 4 headaches. The number of headaches decreased to one occurrence per week during the last two weeks of treatment (weeks 6 and 7), and rose to 2 headaches per week during the week post treatment.



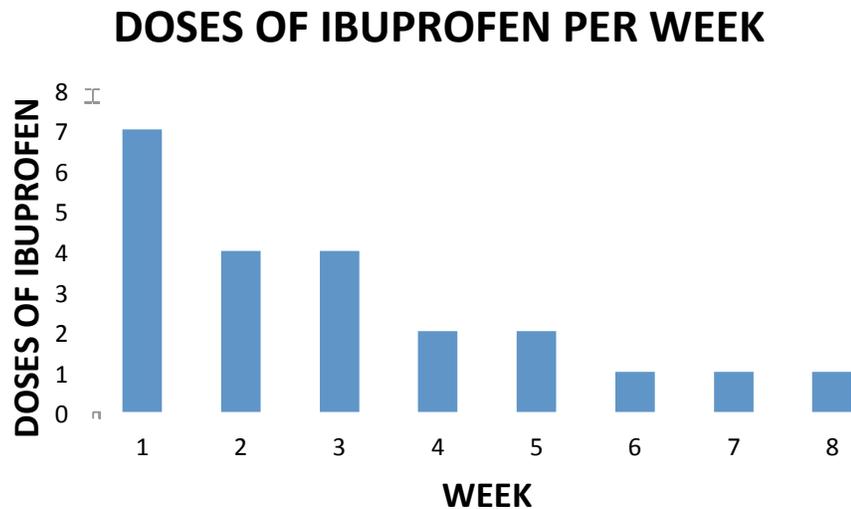
Headache intensity also decreased from above 5 on a 1 to 10 pain scale, to 5 and below towards the end of the treatment sequence.



The influence of the massage protocol on headache duration could not be reliably measured because of the client's use of medication to treat his headaches, which has an influence on headache duration.

The client's use of medication decreased along with the decrease in headache frequency and intensity, from a high of 7 doses of Ibuprofen during week one to a low of 2 doses in week eight.

□



Other results reported by the client included better sleep patterns, an increase in energy level, and a heightened awareness of posture.

A final postural assessment revealed a marked decrease in head forward posture, and a decrease in anterior rotation of shoulders and thoracic hyperkyphosis from moderate to slight.

A final assessment of cervical AROM revealed increased ROM in cervical side flexion bilaterally, as well as an increase in cervical flexion.

DISCUSSION

This case study was carried out in order to determine the effect of myofascial release and manual lymph drainage on chronic tension headaches. Since poor posture and increased stress levels are recognized as major contributors to chronic headaches, these two treatment modalities seem indicated in addressing this type of headache. Myofascial release could be a good treatment option in treating tension headaches in guests with low pain tolerance, and in cases where posture seems to be a contributing factor. Manual lymph drainage is also a gentle modality, well suited for guests who do not respond well to more aggressive techniques. Manual lymph drainage produces a sympatholytic effect, thereby reducing SNS firing, and aids in waste removal and nutrient distribution to connective tissue, as well as a reduction in muscle hypertonicity (Kasseroller, 1998).

The end results were encouraging, the client exhibiting a reduction in headache frequency and intensity, as well as a reduction in medication use. A reduction of medication use is beneficial since the overuse of medication in the self treatment of headaches is recognized to lead to the development of medication overuse headaches.

Headache duration could not be reliably measured due to the client's insistence to continue treating his headaches with ibuprofen. The weaknesses of this study could lay in the fact the measurements mainly consist of subjective information in

the form of a headache journal, and the client's individual perception of pain and well-being, as well as his compliance with the assigned homecare recommendations.

Notwithstanding the above mentioned weaknesses, the results obtained by this study support the idea that myofascial release and manual lymph drainage could be viable treatment options for chronic tension headaches, and that more research in the use of these modalities as a headache treatment alternative is warranted.

KEY WORDS: *Tension Headache, Chronic Headache, Lymph Drainage, Myofascial Release, Headache Treatment*

Completing this case study has been a valuable learning experience for me, since I became aware of the need for more research regarding the efficacy of massage therapy in order to build evidence-based standards of practice. I hope to use this experience to contribute more case studies to this body of knowledge as a Registered Massage Therapist.

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