



# Clinical Case Report Competition

Utopia Academy

Spring 2009

First Place Winner

## Cynthia Walker

The effects of massage therapy on  
temporomandibular joint pain

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## **Abstract:**

*Purpose:* To test the efficacy of massage therapy in coordination with stretching and strengthening exercise and hydrotherapy applications with a person experiencing temporomandibular joint dysfunction.

*Methods:* A full history/assessment was taken prior to any treatment. All three treatments started with a full body steam, followed by temporomandibular joint focused fascial and specific muscle work. Stretching and strengthening exercises were given as home care.

*Results:* Range of motion of the C-spine was improved, head forward posture had improved, and the C-curve upon mandibular depression decreased. The popping of the temporomandibular joint decreased with treatment, but would return a few days later.

*Conclusion:* This case study shows that massage therapy with hydrotherapy and proper homecare instructions helps to improve symptoms, and with continued treatment can help to manage the pain associated with temporomandibular joint dysfunction.

## **Introduction:**

The temporomandibular joints are synovial joints that allow for movement of the mandible. They contain an articular disc which divides the joint into two portions, the inferior and superior compartments. This allows for both the rotation and the translation that is involved in mandible depression. The joint is made up by the condyle of the mandible, the articular disc, and the temporal bone. The disc (shown in figure 1) is biconcave shaped, hypovascular, and not pain sensitive. It attaches to the lateral pterygoid muscle and the connective tissue which is innervated, vascularised and has a

synovial membrane. In order for proper mandibular depression, the masseter, temporalis and medial pterygoid must relax. If these muscles are hypertoned, uneven movement can occur.

The superior head of the lateral pterygoid attaches to the temporomandibular joint capsule and the articular disc (shown in figure 2). If this muscle is hypertoned or restricted, it will pull the disc anterior. This causes the condylar process of the mandible to push against the wrong portion of the disc upon depression of the mandible. The disc is already pulled anterior, so when depression occurs, the anterior portion of the posterior disc gets stuck, causing the audible clicking sound when the condylar process runs over the disc.

The cervical spine also plays an important role in maintaining joint alignment. With head forward posture, the sternocleidomastoid muscles become hypertoned, maintaining the head forward posture. This leads to other muscles in the area to shorten or lengthen, depending on their location and action. When the muscles are hypertoned, fascial restrictions occur. A fascial restriction of the neck can cause fascial restrictions in the face as well, affecting the muscles of mastication. These restrictions can cause restricted range of motion, and pain when involving the muscles that attach to and move the articular disc.

Temporomandibular joint dysfunction causes pain, restricted range of motion, clicking or popping of the joint, headaches, ringing in the ears (tinnitus), and neck pain. Dysfunction can be caused by many things, including overuse of the muscles of mastication (from chewing gum or grinding teeth), trauma, constant compression (leaning on the hand), prolonged depression of the mandible (prolonged dental work), or imbalances in the muscles. Many people receive surgery for temporomandibular joint dysfunction when many of the symptoms can be decreased with massage therapy as well as stretching and strengthening exercises and hydrotherapy applications.

Other names for this condition include temporomandibular disorder, temporomandibular joint pain dysfunction syndrome and temporomandibular joint syndrome. It is not just a joint disorder, as the muscles of mastication are also involved. Often, temporomandibular joint dysfunction is overdiagnosed.

Many people are diagnosed because of joint noise, rather than joint noise with pain, tenderness, and limited range of motion.

### **Purpose of this case study:**

The purpose of this case study is to see the effects that massage therapy in addition to stretching and strengthening exercises and hydrotherapy applications can have in decrease signs and symptoms of tempromandibular joint dysfunction.

### **Methods:**

The guest was seen once a week for 3 weeks. Each treatment was started with a 20 minute steam then immediately followed by a 60 minute massage treatment. General Swedish techniques were used on the back, neck, face and scalp, with most of the focus on the face and intraoral work. Many fascial techniques were also used.

## **Treatments:**

### **Assessment:**

#### **Subjective:**

Guest presented with both headaches and tempromandibular joint pain. The headaches were self diagnosed migraines that presented deep behind the right eye and throbbing. The headaches were relieved by pressure, darkness and sleep, and photophobia was present during.

The pain in the tempromandibular joint was most present after complete jaw depression after the "clicking" of the right articular disk with a sharp pain, and then would dissipate and stay at a dull pain. On a pain scale of 1-10, she indicated it being a 3 or 4. The original onset of pain was unsure. The "click" was heard at the end range of motion, indicating involvement of the anterior portion of the posterior disk. Guest did not normally chew gum, but noticed she was clenching her teeth more often, most noticeably at work. Protrusion and full depression of the mandible would illicit pain. The guest

noticed that she would occasionally rest her head on her hand, compressing the tempromandibular joint. Her wisdom teeth had been removed in the beginning of 2007, with more work done on the lower right tooth. The guest had braces put on in august 2007, which were broken at the time of the first treatment and being fixed prior to the second treatment.

Aggravating factors are mandibular depression. Elevation, heat and massage help to relieve the pain in the tempromandibular joint.

**Objective:**

Upon mandibular depression, a C-curve was present with the apex to the right side. With postural assessment, shoulder levels were uneven with the left side elevated, head forward posture, and her head tilted to the right side. Hypertonicity was present in the sternocleidomastoid, upper trapezius, erector spinae and suboccipitals, all bilaterally. Trigger points were present in the sternocleidomastoid, suboccipitals, and upper, middle and lower trapezius, all bilaterally. Range of motion of the cervical spine showed decreased rotation and decreased side flexion, on the right side more than the left.

**Special tests:**

Three-knuckle test: positive, only 2 knuckles able to be inserted upon mandibular depression

**Treatment goals:**

1. Decrease occurrence of clicking in the tempromandibular joint.
2. Reduce pain, hypertonicity and trigger points.
3. Reduce fascial adhesions.
4. Restore range of motion.

## **First treatment, February 16<sup>th</sup>, 2009**

### **Treatment Details:**

The first treatment started with a full body 20 minute steam to help relax the muscles and allow for easier access to the muscles and easier fascial release. After the steam, a 60 minute treatment was performed. Because of the broken braces, intraoral work was not able to be performed. Fascial release of the upper trapezius, sternocleidomastoid, temporalis (by hair pulling), masseter, and hyoid muscles was done bilaterally. Kneading and muscle separation was then done to scalenes, temporalis, and the digastrics were done. At the end of the treatment, stretches were given for the pterygoids (slight mandibular depression using fingers to slightly pull mandible forward until stretch is felt, hold 30 seconds, 2 times daily), as well as hydrotherapy applications for headaches (cool cloth on the posterior neck, during headaches, 10 minutes on, 10 minutes off, 3 times).

### **Results of first treatment:**

Clicking of the right tempromandibular joint was absent for 3 days post treatment, as well as headaches.

## **Second Treatment, February 25<sup>th</sup>, 2009**

### **New History:**

Guest has had the flu for the week prior to treatment, and has been spending more time lying in bed. Guest went to the orthodontist on February 24<sup>th</sup> to repair broken braces.

### **Treatment Details:**

Treatment started with a 20 minute steam to decrease tone of the muscles and allow for easier access. A 60 minute treatment was then performed. Fascial release to the masseter, sternocleidomastoid, temporalis, and suprahyoid muscles was done bilaterally. Kneading and muscle separation was then done to scalenes, temporalis, and digastrics. Intraoral work to the masseter, medial pterygoids and lateral pterygoids was done with bowing, stripping and compressions. Distraction with

protraction was done for joint mobilizations of the tempromandibular joint. Hair pulling and cranial base decompression were done to finish the treatment. Homecare given was to continue stretches given in prior treatment and warm/hot compresses on masseter muscles. Stretching was also given to the upper trapezius and pectoralis major muscles.

**Results of second treatment:**

Clicking of the right tempromandibular joint was absent for a few days, could not remember specifically how long.

**Third/Final treatment, March 4<sup>th</sup>, 2009**

Treatment started with a 20 minute steam again. Treatment was similar to prior treatments with focus on intraoral work. Fascial release to the masseter, sternocleidomastoid, temporalis, and suprahyoid muscles was done bilaterally. Kneading and muscle separation was then done to scalenes, temporalis, and digastrics. Intraoral work to the masseter, medial pterygoids and lateral pterygoids was done with bowing, stripping and compressions. Distraction with protraction was done for joint mobilizations of the tempromandibular joint. Hair pulling and cranial base decompression were done to finish the treatment.

**Results:**

**Objective:**

Upon mandibular depression, a C-curve was only slightly present with apex to the right. With postural assessment, shoulder levels were, head forward posture was slightly less prominent, and her head no longer tilted to the right side. Hypertonicity was decreased in the sternocleidomastoid, upper trapezius, erector spinae and suboccipitals, all bilaterally. Trigger points were still present in the sternocleidomastoid, rhomboids and lower trapezius.

**Subjective:**

On a pain scale of 1-10, pain has decreased to a 2. The previously audible clicking upon mandibular depression has decreased, for longer periods after each treatment. Protraction of the jaw is less painful, and more movement is possible. Range of motion has improved both at the cervical spine and with the mandible. Headaches had become less frequent.

## **Conclusion:**

Following the 3 treatments given, results were positive. Pain and audible clicking of the joint had decreased, and headaches were less frequent. Upon palpation, there was less hypertonicity, and movement of the tempromandibular joints was more even. The audible clicking of the joint had returned a few days after treatment, making it obvious that more treatments were necessary. The guest was more observant of her daily habits such as compression of the joint and clenching of the teeth, and was working on decreasing the number of times they were occurring. Postural deviations were improved and lines of tension reduced.



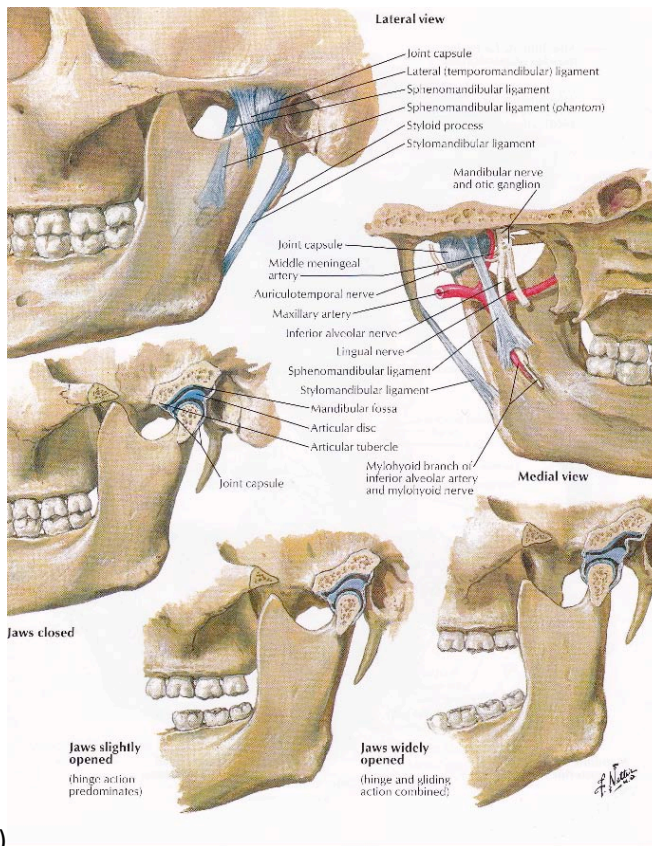


Figure 1: (Netter, Plate 16)

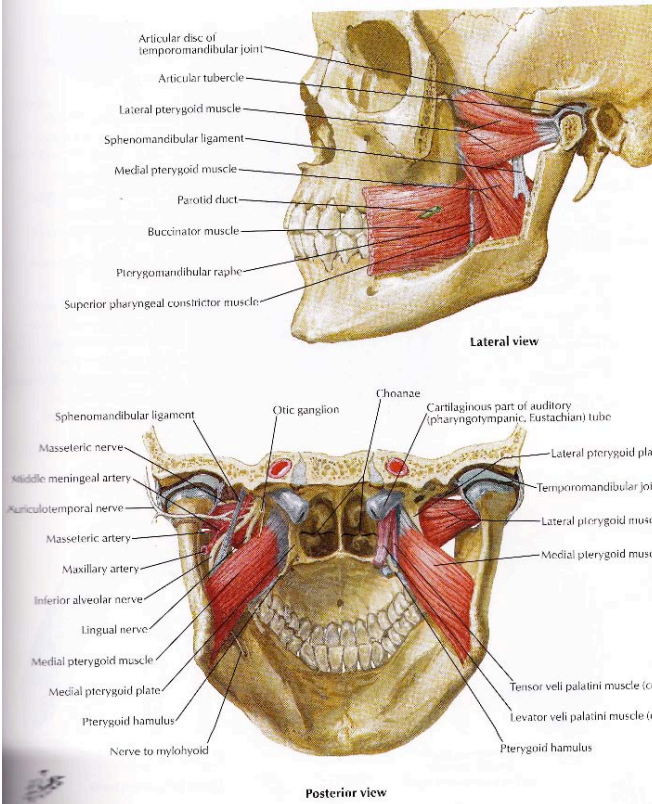


Figure 2: (Netter, Plate 55)

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