

CASE REPORT

Improvement of Trigeminal Neuralgia after Massage Therapy and Dry Needling

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ABSTRACT

Trigeminal neuralgia is a debilitating disease that can lead to depression and even suicide. Trigeminal neuralgia is usually treated using carbamazepine; however, many patients are refractory to such medical treatment. Thus, other treatment modalities are required, such as physical treatment and dry needling. The objective of this case report is to describe the management of trigeminal neuralgia in a 35 years old Malay housewife, who had left side atypical trigeminal neuralgia involving V2 region in the last four years, which was refractory to medical treatment. The application of Malay massage, combined with dry needling executed along the distribution of trigeminal nerve showed an improvement of pain on the Visual Analog Scale (VAS) from 7–8/10 to 0–1/10 after 11 sessions. Therefore, Malay massage combined with dry needling can be used as a non-pharmaceutical approach to managing trigeminal neuralgia.

Keywords: Trigeminal neuralgia, Massage, Dry needling

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INTRODUCTION

Trigeminal neuralgia is the pain experienced along either one or more of the trigeminal nerve branches. It is a debilitating disease that impairs one's daily routine, which can lead to depression. The pain is sudden and often unilateral. It commonly involved the maxilla and mandibular divisions where patients commonly describe as a recurrent, brief, and stabbing pain (1). It can last from a few seconds to several minutes. The pain can occur from a few to hundreds of attacks a day (1).

The incidence of trigeminal neuralgia per year in the US population is 4.3 per 100,000 persons, with women having higher incidence compared to men (2). The age of onset ranges from 24 to 89 years, with a mean age of 54.9 years. In the multi-ethnic populations in Singapore and Malaysia, trigeminal neuralgia is common among the Chinese (68.2%), followed by Malays (13.6%), and Indians (11.4%) (2).

The aetiology and pathophysiology of trigeminal neuralgia are still uncertain (2). Its treatment also provides a challenge as patients can opt for many treatment modalities. The pharmacological treatment

for trigeminal neuralgia includes muscle relaxants, anticonvulsant, and neuroleptic drugs (2). However, the gold standard of trigeminal neuralgia treatment is using carbamazepine (1). For patients who are not responsive to medical treatment, other techniques that show favourable outcomes such as microvascular decompression, Gasserian ganglion percutaneous techniques, and gamma knife surgery can be tried (1). Both massage and needling (in the form of acupuncture) are commonly used as an alternative treatment to reduce pain in patients who suffered trigeminal neuralgia. However, these treatments are not currently offered in the government health services but are commonly sought by the patients elsewhere.

Both modalities treat myofascial trigger points (MTP), a hyperirritability spot within the skeletal muscle (3). Although the trigger point that originated from trigeminal neuralgia came from the mucocutaneous incentive in the region of the affected trigeminal nerve was different from MTP, which originated from the skeletal muscles (hyperirritability spot within the skeletal muscle), it is possible that these modalities can be used for the treatment of trigeminal neuralgia, by disrupting the trigger points (mucocutaneous incentive) underlying the region affecting trigeminal nerve.

The massage technique used in this study was based on the Malay massage, executed by a Malay massage practitioner at the Integrative Medicine Clinic where

deep tissue massaging with the help of massage oil (in this case, virgin coconut oil) was used to treat the area of pain. The practitioner massaged the muscle along the distribution of the trigeminal nerve and muscles nearby such as the temporalis and frontalis. It was done repeatedly until the practitioner was satisfied that the massage affected the muscles.

Dry needling is a western type of acupuncture that uses acupuncture needles on the trigger point area, which may alter or diminish the active trigger point and reduce the pain (3). We used the dry needling technique, and the needling was done at five location points along the trigeminal nerve distribution at maxillary region and at the temporalis muscle. The technique was aimed to disrupt the trigger points that lie within the nerve distribution and relax the muscles around the nerve.

This case report was aimed to study the roles of massage therapy and dry needling (which are not the main options in treating trigeminal neuralgia) in the treatment of trigeminal neuralgia.

CASE REPORT

We had seen Mrs. NS in early November 2018 at the Integrative Medicine Clinic, Advance Medical and Dental Institute, Universiti Sains Malaysia, Bertam, Kepala Batas, Pulau Pinang. She is a 35 years old Malay housewife, who lives in Sungai Petani, Kedah. She had no previous medical illness before. She had been referred by the Oral Surgery Unit, Hospital Sungai Petani, Kedah for further treatment of the left side atypical trigeminal neuralgia involving V2 region.

Her complaint was a pain at the left V2 region of trigeminal neuralgia since 2015. The pain was shooting and sharp, lasting for more than 2 minutes or less. Sometimes the pain radiated to the upper part of the head. The pain attack was about three to four times per day. Molar tooth extraction had been done twice at the pain site, but the pain did not subside. Her Visual Analog Scale (VAS) for pain was 7–8 at the point of referral.

She had to rely on medication (400 mg of carbamazepine tablet twice daily) to control the pain, in which she said it only help her a bit. This problem had disturbed her daily activities. The attack can be triggered by cold and sweet food.

At the Oral Surgery Unit, Hospital Sungai Petani, Kedah, she was treated with the nerve block, local infiltration of 2% Mepivacaine Scandonest at the left superior posterior alveolar nerve. She had no previous history of trauma, surgery, recent herpes zoster infection, or ear infection.

The patient was comfortable and not in pain upon examination. Her blood pressure was 118/74 mmHg and

pulse rate at 76/min. Examination on the face showed no apparent muscle weakness or facial drooping. There were no twitches or excessive eyelids blinking and no watery eyes. Strokes over the superficial aspect of the face do not trigger any pain. She had tenderness at the maxilla region, just beneath the maxillary bone when deep palpation was done. She also had been informed that her case would be reported for future references, and she consented it.

Treatment

Once the patient had been assessed, she was prescribed with the massage. She had been massaged by a Malay massage practitioner in three sessions (once a week apart) before dry needling was added on the fourth massage session. The reason for the addition of dry needling was to enhance the effect of the massage further as we believed that it would disrupt the trigger point further. In the fourth and eleventh massage sessions, dry needling was done prior to massage.

The massage was applied using deep pressure along the distribution of the trigeminal nerve, and it was started at the region around the ear then moved to the maxilla, mandibular, and the forehead. The process was repeated a few times, which took around 30 minutes. The massage was aimed to stimulate the nerve by repeatedly stroking along the distribution of the V2 trigeminal nerve.

Dry needling was executed at five location points, namely the temporalis muscle, the junction of the temporo-mandibular joint, and along the lower end of the maxillary bone, including masseter muscle (Fig. 1). The needling was done at 1 cm depth, and the needle was left for 5 minutes before it was removed.



Figure 1: Needling sites at the left temporal region, the junction of the temporo-mandibular joint, masseter muscle and along the lower end of the maxillary bone, following the V2 trigeminal nerve distribution.

Results

When we last saw the patient on the 10th of February, 2019, after the 11th session treatment, she has not relied anymore on any medications. The pain had improved after the 3rd massage and further improvement of the pain after the introduction of dry needling to massage therapy. Her VAS at this time was 0–1 and she had a pain attack occasionally, of which occur in less than 2 minutes. She said that the addition of dry needling helped to alleviate her painful attack further. Now, she was able to eat sweet food and enjoyed the food that she had been avoiding for so long.

DISCUSSION

Massage therapy in the management of trigeminal neuralgia is not commonly being prescribed in medical practices. It is commonly used by the physical therapist such as physiotherapist or chiropractor with varying results. There is no clinical data on the effectiveness of massage therapy on the treatment of trigeminal neuralgia, and the treatment was sought when medical treatment does not affect the condition.

Massage is a potent trigger that aroused the pain gate mechanism by producing temporary analgesia by activating it (5). By pressure touching, the cutaneous mechanoreceptor can be stimulated, and information can be transmitted within large nerve fibres to the spinal cord. This stimulation and impulses can block the pain stimuli that enter the same segment of the spinal cord along the small and slowly conducting nerve fibres (5).

The massage technique that we used in the treatment of this patient was deep massaging, which was aimed to stimulate the trigeminal nerve along its distribution. Massaging the area of the trigeminal nerve in this patient helped to reduce pain intensity and frequency of the attack after the third massage. We believed that the massage eased the hyperirritability spot within the area of trigeminal nerve; thus, reducing the pain.

Adding dry needling to a massage therapy in the treatment of trigeminal neuralgia may enhance the effect of the healing process. This was proven when the dry needling treatment introduced to the patient had significantly reduced the pain to only 0–1/10. The mechanism of which these two techniques improved Mrs. NS's condition may be through multiple physiological changes such as activation of pain gate mechanism, improved blood circulation around the nerve sites, and enhanced mobilisation of an inflammatory mediators

from the target sites.

The enhanced effect of dry needling seen in Mrs. NS showed that the trigger points might contribute to the cause of pain in trigeminal neuralgia. Previous studies reported the component of a trigger point in the aetiology of trigeminal neuralgia (2). They stated that trigeminal neuralgia pain onset originated from a slight mucocutaneous stimulus in the area of the affected trigeminal nerve (which is known as a trigger point) (2). Furthermore, needling has also shown to release opiate peptides such as beta-endorphins, enkephalins, and dynorphin, which block the transmission of pain information (4), where it synergistically enhanced the effect of massage.

CONCLUSION

Massage therapy, combined with dry needling and executed along the distribution of a trigeminal nerve, can be an effective treatment plan for non-pharmaceutical approach on managing trigeminal neuralgia. However, there is a need for further research on how these two modalities exert its synergistic effect with appropriately designed treatment strategies.

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