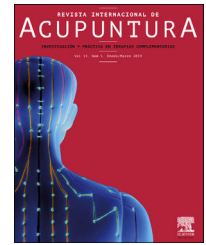




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## Case report

# Acupuncture in the treatment of temporomandibular disorders, facial pain, and postural neuromuscular disorders. Presentation of a clinical case

Giuseppa Bilello\*, Giuseppe Currò

Department of Surgical, Oncological and Oral Sciences (DiChirOnS), University of Palermo, Sicily, Italy

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### ABSTRACT

**Background and objectives:** Temporomandibular disorders have a multifactorial etiology and involve the masticatory muscles, temporomandibular joint and associated structures. Therefore, different treatments are proposed and used. The aim of this paper is the use of acupuncture to treat temporomandibular disorders and associated symptoms.

This article presents a clinical case study of a 39-year-old patient who presented temporomandibular disorders and headache of muscular origin.

**Results:** After 10 acupuncture sessions, the results were highly satisfactory, with complete relief of headache pain and absence of joint disorders. These results suggest the efficacy of acupuncture in the symptomatic relief of temporomandibular disorders.

**Conclusions:** It is concluded that acupuncture is an alternative method to conventional stomatognathic treatment for individuals with craniomandibular disorders of muscular origin.

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## Acupuntura para el tratamiento de trastornos temporomandibulares, dolor facial y trastornos neuromusculares posturales. Presentación de un caso clínico

### RESUMEN

**Antecedentes y objetivos:** El trastorno temporomandibular tiene una etiología multifactorial, comprometiendo a los músculos masticatorios, la articulación temporomandibular y las estructuras asociadas. Por este motivo se proponen y utilizan diferentes tratamientos. Nuestro objetivo es utilizar la acupuntura para tratar los trastornos temporomandibulares y los síntomas asociados. Este artículo presenta el caso clínico de un paciente de 39 años que presentó trastornos temporomandibulares y cefalea de origen muscular.

#### Palabras clave:

Acupuntura temporomandibular

Músculo masticatorio

Dolor

Cefaleas y trastornos

neuromusculares posturales

\* Corresponding author.

E-mail address: [giuseppa.bilello@unipa.it](mailto:giuseppa.bilello@unipa.it) (G. Bilello).

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**Resultados:** Tras 10 sesiones de acupuntura, los resultados fueron bastante satisfactorios, con alivio completo de la cefalea y ausencia de trastornos articulares. Estos resultados sugieren la eficacia de la acupuntura en el alivio sintomático de los trastornos temporomandibulares. **Conclusiones:** Se concluyó que la acupuntura es un método alternativo al tratamiento estomatognático convencional para individuos con trastornos craneomandibulares de origen muscular.

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## Introduction

Acupuncture is a method of medical investigation and it has been known in the Far East for centuries. But received little attention in Western cultures until the 1970s (Taber's Cyclopedic Medical Dictionary, 16th Edition, 1989). This is a technique for treating certain painful conditions and for producing regional anesthesia by passing long thin needles through the skin to specific points.<sup>1,2</sup> The free ends of the needles are twirled or in some cases used to conduct a weak electric current. Acupuncture is the application of filiform needles (without any tube to deliver liquid). These needles are sterile, generally blister packed and designed to be disposed of. The points that they are inserted in are very specific and have been largely agreed upon for thousands of years. Each of these points has been organized into meridian lines which correspond with a functional organ of the body. There are about 365 points along 14 meridians. Side effects of acupuncture include: bleeding, ache, or pain at the site after treatment. Infection is possible although extremely rare.<sup>3</sup> There are no 'other' symptoms related to an injectable substance because there is nothing injected and therefore no artificially provided biochemical change. Once the needle pierces the proper point on the muscle belly a twitch can be observed. This twitch is a good indicator that the muscle has held too much tension and is giving a release of physical, chemical and energetic tension. Other good signs are the 'red flash', redness around the needle indicating a proper inflammation response. The duration and circumference of the red flash spot is an indicator of general function of the whole body and area being treated. Another sign it is working is the feeling of heat around the needle. Acupuncture treatment was a safe and efficient methodology for relieving the pain of patients suffering from temporomandibular disorder with no detectable osseous joint component.<sup>6</sup> Temporomandibular disorders (TMD) act as a non-homogeneous group of conditions characterized by pain and/or dysfunction of the temporomandibular joint and masticatory muscles. The etiology of TMD is multifactorial and depends on both peripheral and central factors. Local factors have been proposed; among these, occlusal or facial trauma, prolonged mouth opening, "intubations". also habits such as bruxism or tightening. The systemic factors are above all psychological. The symptoms associated with TMD may lead an individual to change their normal daily activities such as, taking time off from work and impeding their ability to partake in social interactions. This can have a negative impact on their quality of life.<sup>4,7,8</sup>

## Material and methods clinical features

A 39-year-old white woman presented at the our observation with a temporomandibular disorders facial pain of muscle origin. The pain appeared continuous and was constant for the last 12 months. The patient reported an intensity of 8 on a pain scale VAS of 0-10. A careful clinical and instrumental examination is performed. The diagnosis is of TMD, reduction in mouth opening and altered posture. The patient, after completed the medical records provided and signed written informed consent, proceed with the acupuncture treatment. It was conducted according to the Declaration of the World Medical Association of Helsinki.

As far as the acupuncture technique is concerned, specific bimetallic needle of 0.25 diameter and 26 mm of length with sharpening on the tip, copper wire handle, spiral wound, made of Hwato brand AISI 304 steel.

Individually packaged in a single detachable blister, needle protected by a guide tube, made of Hwato brand AISI 304 steel. Hwato needles are manufactured by Suzhou Medical Appliance Factory, in China.

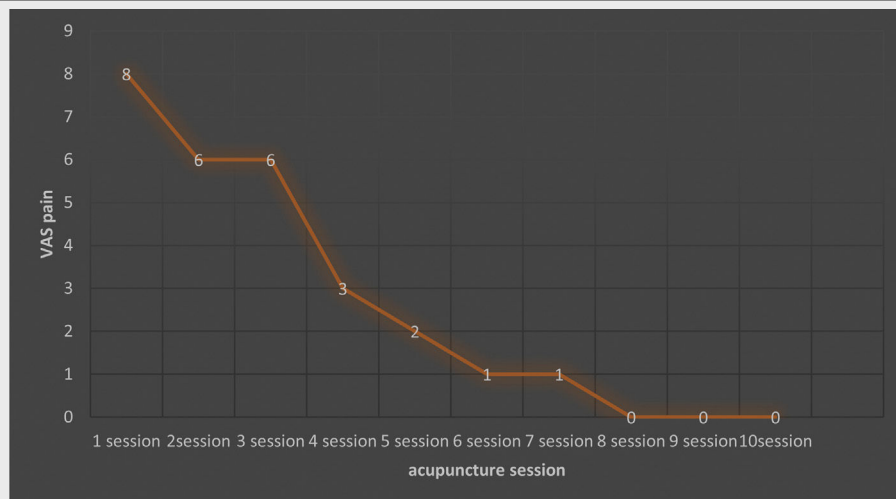
After identifying the point, you must disinfect the area and put the needle. We were employed bilateral points, both local and distal points. The mode of manipulation of the needle consists of whether twirled counterclockwise and clockwise. This stimulation is performed until the "localized reaction or Deqi" is obtained, visible due to the presence of hyperemia in the skin surrounding the needle. The needles were kept in place for about 30 min, stimulating them every 5-10 min. The therapeutic protocol included one session a week for about 3-4 months.

## Results

After the first acupuncture treatment the patient reports a noticeable improvement in joint noises and the ability to open her mouth. In subsequent sessions she continued to have improvements, up to the complete improvement also from the neuromuscular point of view.

## Discussion

The treatment protocol included local acupuncture points in the TMJ region and masticatory muscles, regional points in the head and neck, and distal points on the upper and lower limbs. Frequently the local and regional points were identical to the trigger points used for pain relief.<sup>4-6</sup> The distal points affect

**Table 1 – VAS scale related to acupuncture treatment sessions.**

the sympathetic nerve system and various pain gates, thereby enhancing the impact of local acupuncture. The distal points were chosen according to TCM or the Five Elements Theory.

The following names and abbreviations, of the points chosen for this patient, are that used in Medical Acupuncture, adopted by the American Academy of Medical Acupuncture (AAMA) and endorsed by the World Health Organization (WHO).

local points 6 ST; 2 GB; 17 SI; 18 SI

distal points 43 GB; 3 LR; 36 ST; 4 LI

After the first acupuncture session with 3 local points (6 ST; 2 GB and 17 SI) and two distal points (36 ST; 4 LI), the patient reports an improvement in pain in the joint area with reduction of joint noise. On palpation, the masticatory muscles (right and left masseter and temporal muscles) are less contracted. After 4 sessions we added more acupuncture points and the improvements followed. It was thus decided to add points that could restore a correct neuromuscular balance and consequent postural structure (Table 1).

In the seventh session, therefore, point 3 LR and 43 GB were used for postural reprogramming. These last sessions led to a reorganization of the neuromuscular system. After the 10 sessions of acupuncture, as per protocol, we noticed a healing of articular disorders, total absence of facial pain and a general improvement of the patient's condition. These results are, in part, to be attributed to the muscular relaxation that determines a better general and postural balance of the patient.<sup>8-12</sup>

## Conclusions

Acupuncture is to be considered a treatment with relative operational simplicity and with a favorable cost/benefit ratio. Furthermore acupuncture has a non-invasive and extremely valid approach. This technique can be used both preventive and therapeutic, even in association with other treatments. It can be the eco-sustainable alternative over more to the traditional methods. We can define "green therapy", for its low cost and low impact ambiental. All this encourages the use of the illustrated technique for temporomandibular joint disorders,

headache of muscular origin and postural neuromuscular disorders.

## Ethical considerations

This work was conducted according to the Declaration of the World Medical Association of Helsinki.

The consent has been obtained from patient. The authors declare that they followed their institutions' protocols to access to the patients data and that was done with the unique purpose of the scientific investigation and scientific disclosure.

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## Conflicts of interest

No conflicts of interest were reported for this study.

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