

Acupuncture to manage orofacial pain and tinnitus. Case report*

Acupuntura no manuseio da dor orofacial e do tinido. Relato de caso

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ABSTRACT

BACKGROUND AND OBJECTIVES: Orofacial pain is associated to soft and mineralized oral cavity and facial tissues. In dentistry, it may have or not odontogenic origin. Temporomandibular disorder (TMD) is the most common musculoskeletal orofacial pain and presents characteristic symptoms such as masticatory muscles pain, jaw movement limitation, joint noises, earache and tinnitus. Tinnitus is a term describing the perception of sound by human ears in the absence of external sounds and causes discomfort impairing quality of life. It may be a symptom indicating TMD especially when other symptoms are present, such as facial muscles pain. Due to etiologic variability, there are several therapeutic modalities, including acupuncture. This study aimed at reporting a case of a patient with orofacial pain and tinnitus treated with acupuncture and the results after treatment.

CASE REPORT: Female patient, 32 years old, came to the Acupuncture Clinic of the School of Dentistry of Piracicaba (FOP/UNICAMP) complaining of facial muscle pain and pricking at the same side, acute right ear tinnitus, already with diagnosis of left ear hearing loss and with sleep disorders and stress. Patient was treated according to her energetic unbalance with 6 sessions of traditional acupuncture, for one week, lasting 20 minutes. To evaluate orofacial pain and tinnitus intensity, the visual analog scale (VAS) was used and was called initial VAS (pre-treatment) and final VAS (post-treatment). After the second session there has been improvement in orofacial pain and tinnitus symptoms. After the sixth session tinnitus had resolved.

CONCLUSION: Acupuncture has induced muscle relaxation with benefits for masticatory and middle ear (tensor tympani) muscles, as well as levator palate muscle decreasing orofacial pain and tinnitus intensity.

Keywords: Acupuncture therapy, Meridians, Orofacial pain, Tinnitus.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Dor orofacial é toda dor associada a tecidos moles e mineralizados da cavidade oral e da face. Na odontologia, podem ser de origem odontogênica e não odontogênica. A disfunção temporomandibular (DTM) é a dor orofacial musculoesquelética mais comum, apresenta sintomas característicos como dor nos músculos mastigatórios, limitação dos movimentos mandibulares, ruídos articulares, otalgia, tinido. Tinido (zumbido) é um termo que descreve a percepção de som no ouvido humano na ausência de som externo, causa de incômodo com prejuízo na qualidade de vida. Pode ser um sintoma indicativo de uma DTM principalmente quando estão presentes outros sintomas característicos da disfunção como dor nos músculos da face. Devido à variabilidade etiológica, encontram-se várias modalidades terapêuticas, incluindo a acupuntura. O objetivo deste estudo foi relatar o caso de uma paciente com dor orofacial e tinido tratada com acupuntura e seus resultados após o tratamento.

RELATO DO CASO: Paciente do sexo feminino, 32 anos, compareceu a Clínica de Acupuntura da Faculdade de Odontologia de Piracicaba (FOP/UNICAMP), com queixa de dor muscular na face e formigamento do mesmo lado, tinido agudo no ouvido direito, já com diagnóstico de surdez do ouvido esquerdo e apresentando distúrbios do sono e estresse. Foi tratada de acordo com seu desequilíbrio energético, em seis sessões de acupuntura tradicional, uma por semana, com duração de 20 minutos. Para avaliar a intensidade da dor orofacial e do tinido, utilizou-se a escala analógica visual (EAV), denominada EAV inicial (pré-tratamento) e EAV final (pós-tratamento). Após a segunda sessão, observou-se melhora nos sintomas da dor orofacial e do tinido, que deixou de se manifestar após a sexta sessão.

CONCLUSÃO: Acupuntura propiciou o relaxamento da musculatura com benefícios para os músculos da mastigação e da musculatura da orelha média (tensor do tímpano), bem como do músculo elevador do palato, reduzindo a intensidade da dor orofacial e do tinido.

Descritores: Dor orofacial, Meridianos, Terapia por acupuntura, Zumbido.

INTRODUCTION

Orofacial pain is any pain associated to soft tissues (muscles, nerves, skin, glands, blood vessels) and mineralized tissues

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(bones and teeth) of oral cavity and face. It may be referred to head and/or neck or it may be associated to other pathologies (cervical pain, primary headaches and rheumatic diseases)¹.

In dentistry, most frequent causes of orofacial pain are odontogenic, related to dental tissues and their supporting structures (more severe), and non odontogenic, associated to muscles, joints and nerves (neuropathic pains)².

Musculoskeletal orofacial pain has become known in Brazil among laypeople, patients and health professionals as Temporomandibular Joint Disorder (TMD)³. TMD is a term defining different clinical problems involving muscles of the head, face, mouth, neck and other related structures⁴.

Common TMD signs and symptoms are: masticatory muscles pain, temporomandibular joint pain, headache, joint movements limitation, sensation of hear loss, ear pain and tinnitus⁵. Tinnitus (or buzz) is a term to describe sound perception by human ear in the absence of external sound⁶, and may be associated to depressive psychological emotional problems^{6,7}. Tinnitus may also be caused by anatomic abnormalities, but sometimes no etiological structural defect can be found⁸.

The prevalence of tinnitus in people with normal hearing is 26.6%, which increases to 35.1% in people with hearing impairment⁶. Its incidence is not related to age or gender⁹. Tinnitus may be classified in: para-auditory (perceptible) with vascular or muscular origin, and subjective tinnitus of neurosensory origin¹⁰.

Tinnitus may be an ENT symptom indicating TMD, especially when there are also other signs and symptoms characterizing the disorder, such as masticatory muscles pain¹¹.

From people with tinnitus, approximately 20% have significant discomfort that impairs their quality of life¹². Its treatment is a major challenge and there are several therapeutic modalities to eliminate or, in most cases, attenuate tinnitus, such as Tinnitus Retraining Therapy, auditory prostheses, electrical stimulation with cochlear implants, biofeedback and psychotherapy¹³.

Due to symptoms subjectivity and etiological variability, treatment should be tailored to obtain the best results. So, acupuncture may be an additional therapeutic resource to treat tinnitus, because it is a tailored therapeutic practice with holistic view¹³.

Acupuncture is one of the pillars of the Traditional Chinese Medicine (TCM), developed as from the observation of nature phenomena, a system presenting human body as a whole and as part of nature¹⁴, based on the stimulation with needles of specific points defined in the human anatomy¹³.

Acupuncture for the treatment of tinnitus is similar to its use to relieve pain, because both conditions produce unpleasant emotional and sensory experiences¹⁵. In light of the above, this study aimed at evaluating the therapeutic effect of acupuncture to manage orofacial pain and tinnitus.

CASE REPORT

Female patient, 32 years old, 60 kg and 1.69 m height, who looked for the Acupuncture Clinic of the School of Dentistry,

Piracicaba (FOP/UNICAMP), complaining of facial muscle pain and pricking to the same side, acute right ear tinnitus, already with diagnosis of left ear deafness and with sleep disorders and stress.

At face palpation on the side of the referred pain, patient informed that pain would improve when the site was compressed (indicative of deficiency according to TCM); facial and cervical muscles were tensioned.

By observing the tongue (Figure 1), procedure to help diagnosis since tongue in TCM is a microsystem with representation of organs and viscerae¹⁶, it was observed the presence of teeth marks on the sides, tremor, thin and white coat, edema and red tip.

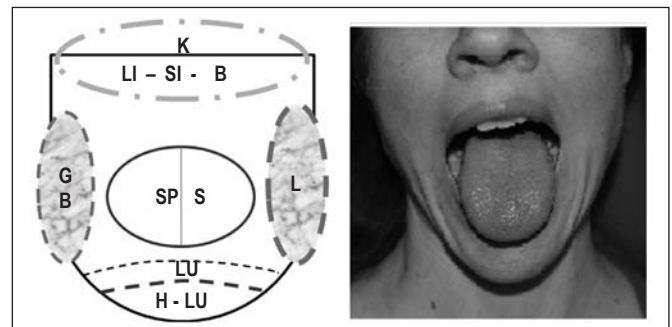


Figure 1 – Scheme of affected tongue zones – Liver (L), Gall Bladder (GB) and Heart (H).

Patient's energetic imbalance was identified through eight principles, being Yin, Cold, Empty, Internal. To select acupuncture treatment points, the affected meridian and painful face areas were taken into consideration¹⁷ and the following points were chosen:

Triple burner meridian (TB)

TB17 (Yifeng), TB18 (Qimai), TB19 (Luxi), TB20 (Jiaosun), TB21 (Ermen), TB22 (Heliao), TB23 (Sishukong).

TB meridian, among other functions, acts on the circulation of the energetic flow (Qi mobilization). It is related to the mental aspect for being related to the pericardial meridian (CS), acting as an articulator in the psychic level, in the emotional balance between personal relations and those aimed at oneself¹⁸.

Small intestine meridian (SI)

SI17 (Tianrong), ID18 (Quanliao)

In psychological terms, SI meridian influences mental lucidity and helps decision making, in the sense of knowing the best choice¹⁸.

Heart meridian (H)

H7 (Shenmen) – is the most important heart meridian point and its primary action is to calm the mind, being indicated to treat insomnia, anxiety poor memory and others¹⁸.

Stomach meridian (ST)

ST36 (Zusanli) – point which balances body energy and strengthens defenses against external pathogenic factors¹⁸.

Patient was submitted to six sessions of traditional acupuncture (Figure 2), once a week, lasting 20 minutes with Huan Qiu (Suzhou Huanqiu Acupuncture Medical Appliance Co. Ltd.) disposable and sterilized needles, individually packed, sizes 0.25 x 25 mm (for facial insertion) and 0.25 x 30 mm (for head, wrist and leg insertion). Skin was cleaned with cotton soaked in 70° alcohol. Needles were unilaterally inserted, to the right (side affected by facial pain and tinnitus), until Deqi was obtained, and were not manipulated¹⁹.

There has been improvement after the second session, facial and cervical muscles were relaxed and patient reported decreased tinnitus, which gradually improved after each acupuncture session, disappearing in the last session (Figure 3).

The same scale (VAS) was used to evaluate orofacial pain, where 0 (zero) means no pain and 10 (ten) maximum pain, called initial VAS (before treatment) and final VAS (after treatment).

Similarly, to evaluate tinnitus intensity, VAS was adapted for tinnitus, where zero means no tinnitus and 10 maximum tinnitus, called initial VAS (before treatment) and final VAS (after treatment).

Percentages obtained represented the difference between initial and final VAS.

Since this is a trial with human beings, it was carried out according to ethical criteria and to the standards required by the Declaration of Helsinki from 1975. This study was approved by the Research Ethics Committee, School of Dentistry, Piracicaba/UNICAMP (099/2008) and was only started after the signature of the Free and Informed Consent Term (FICT).

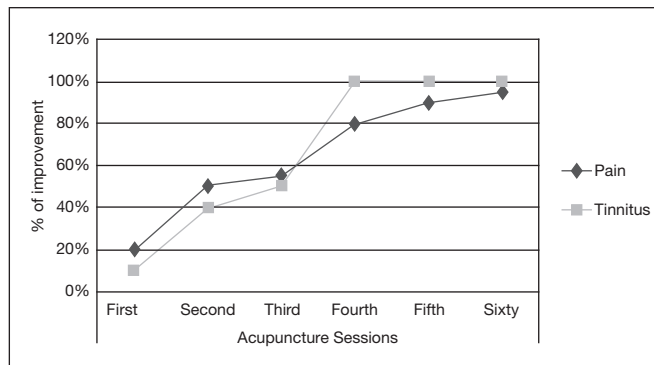


Figure 3 – Improved orofacial pain and tinnitus intensity during acupuncture treatment.

DISCUSSION

According to the literature²⁰, some TMD signs and symptoms are common among the population, such as in this case, being that the psychological factor has contributed by generating stress, which increases muscle activity, causes fatigue and spasm⁵. TCM encompasses the holistic concept, where the human body is seen as a whole and all its parts are connected to one another and to the external medium²¹. Using acupuncture, we try to reach physical and emotional balance, providing health recovery.

Using Triple Burner (TB) meridian points, one considers its external and internal pathway, traveling through the auricular region of the inner and outer ear, and joining through its internal pathway the circulation-sex meridian (CS), with the stomach meridian (SM) and the gall bladder meridian (GB)²².

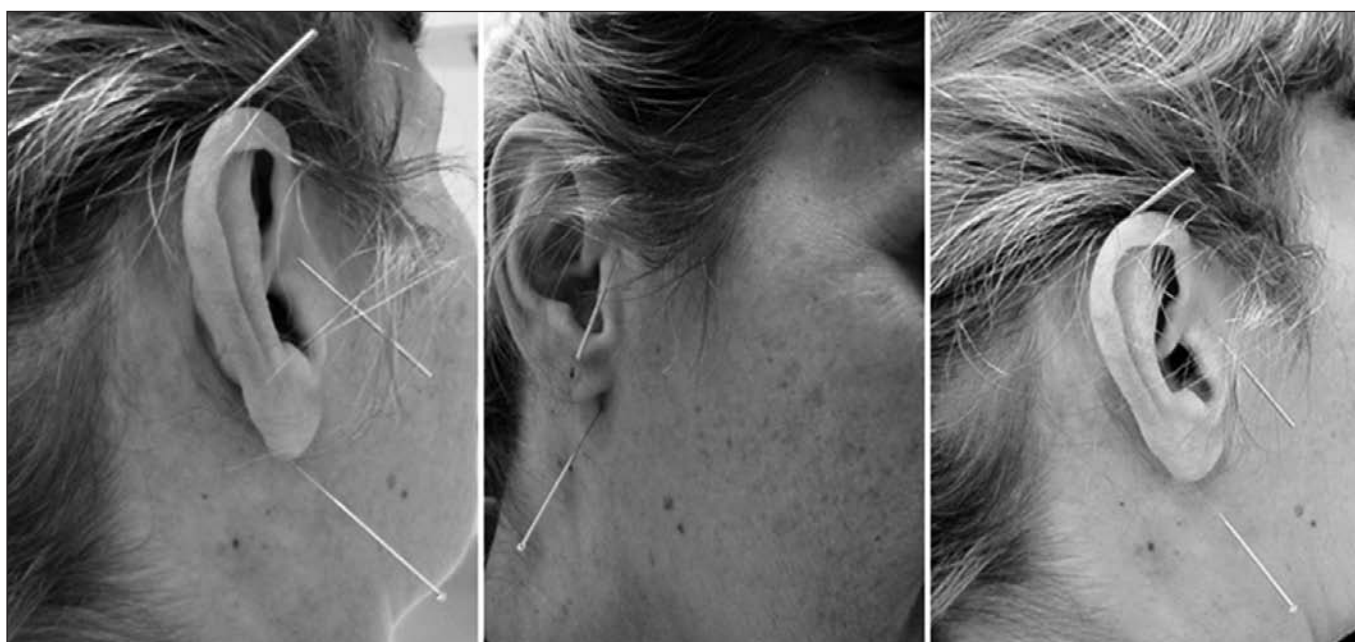


Figure 2 – Points applied around the ear.

The stomach meridian crosses the face in its internal pathway (being indicated to treat facial and tooth pains) and the GB meridian in its external pathway crosses the region of the ear and face²².

It is also considered that the external TB meridian pathway, when climbing through the posterior shoulder, crosses points of the small intestine meridian (SI)²², being this important because in the pathway of these two meridians there are jaw elevator muscles and facial muscles, which are anatomic sectors affected in this clinical case (Figure 4).

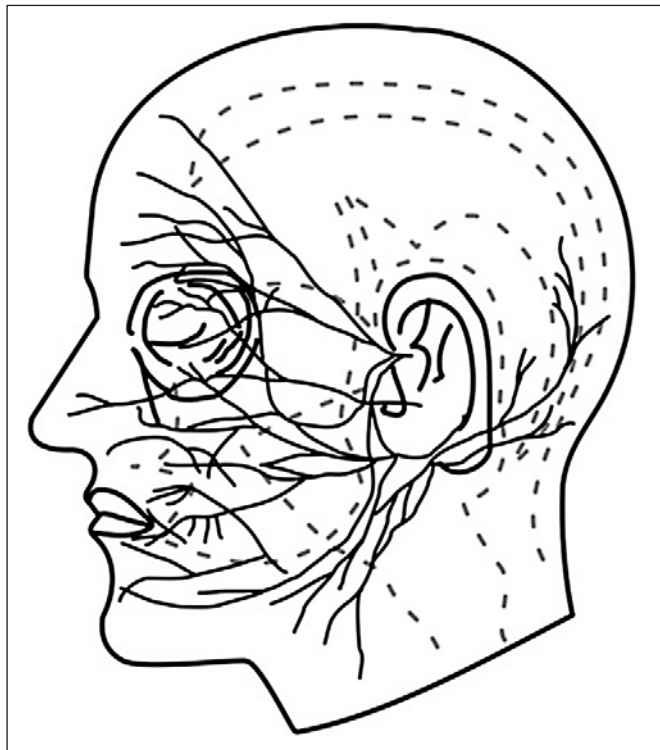


Figure 4 – Anatomy of trigeminal and facial nerves location (black line) and their intersection with TB, SI and H meridians (dotted line).

The SI17 point (Tianrong), due to its location right below the jaw angle, in the anterior margin of the sternocleidomastoid muscle, has helped promoting neck muscles relaxation and, for having energetic function and for harmonizing Qi circulation, it is indicated to treat deafness and tinnitus²². SI18 (Quanliao), with clinical application for painful facial disorders, is located inferior to the zygomatic arch, below the lateral angle of the eye, and point H36 (Zusanli) as a general energy regulating point²², to balance the center and, as a consequence, the whole body.

According to results, there has been improvement shown by VAS; after the sixth acupuncture session, patient had improved 95% and total tinnitus manifestation has improved 100%, which may be physiologically and anatomically justified because in the cranial-cervical complex, all structures are related. In case of the auditory system, it is located in the petrous portion of the temporal bone (crossed by GB meridian), which is related to the tensor and levator muscle of

velum and of the auditory tube (related to SI and TB meridian). When these structures are in permanent contraction due to emotional stress, they induce constant vasoconstriction of such muscles (lack of blood irrigation, which for the TCM is Xue deficiency), interfering with the entrance of air, thus unbalancing internal atmospheric pressure, which would cause tinnitus.

Emotionally, the indication of the presence of the emotional factor may be observed by the intense red color of the tip of the tongue, area corresponding to the heart meridian according to the tongue microsystem¹⁶. Through the H7 point – Shenmen, which is the Door of the Spirit, it was possible to balance Yang Qi and Xin Qi of the heart as well as when the point of its coupled meridian SI 17 is used, because all senses depend on the heart, since the mind receives sensory perceptions.

The emotional is an important part of human beings, however very often it leaves its subjective aspect causing manifestations in the physical body, reflected in pathological signs and symptoms, indicative of the need for treatment. Acupuncture works in this level, since needle insertion, which produces a series of chemical reactions, stimulating peripheral nitric oxide and other substances release¹¹, as well as by local vasodilation, improving circulation of different fluids (Xue). There are analgesic, muscle relaxant, sedative, anxiolytic, anti-inflammatory, immunity inducer and other effects which occur through neural, neuro-humoral and neurochemical mechanisms¹⁷.

CONCLUSION

In this clinical case, acupuncture has provided muscle relaxation with benefits for masticatory muscles and middle ear muscles (tensor tympani), as well as for palate levator muscles, decreasing orofacial pain and tinnitus intensity.

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