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Original Research

Effectiveness of Chinese acupuncture on pain relief following surgical removal of impacted third molars: A self-controlled clinical trial

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ABSTRACT

Introduction: The extraction of the third molar commonly produces severe pain, swelling, and functional disability. The most common treatment for postoperative pain is nonsteroidal anti-inflammatory drugs. Unfortunately, these medications are associated with systematic side effects.

Acupuncture as a physical therapy may provide effective pain relief without these side effects.
Aims: This research is a self-controlled clinical trial designed to evaluate the effectiveness of Chinese acupuncture treatment in pain relief following the surgical extraction of impacted third molars.

Materials and methods: Acupuncture treatment was applied to 50 patients for 20 min immediately following surgical extraction of all impacted third molars on the left side of all patients.

Pain assessment was performed using a standardized questionnaire that contained information about the name and age of the patient, numbering and classification of the impacted tooth, timing and duration of the surgical operation, and a table with the visual analogue scale (VAS) for measuring pain intensity.

The pain intensity was measured several times. The measurement was started by the author himself who did the first two measurements. The patient was then asked to continue evaluating the pain intensity for the following periods: after 6 and 12 h and on the second, third, fourth, fifth, sixth, and seventh days.
Results: Pain intensity values were less for the acupuncture group for all studied periods.

Conclusion: Acupuncture treatment following surgical extraction of impacted third molars could reduce postoperative pain values.

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1. Introduction

Dental pain is the most common orofacial pain [1] that makes patients seek dental treatment, and when this pain becomes severe, it causes disturbances in sleeping, eating, and other daily activities and demands emergency intervention [2].

Dental pain is experienced by many patients who suffer from any pathology in the orodental cavity, which makes pain control a priority of the dental practitioner [3].

Because of the prevalence of dental pain, especially after surgical and nonsurgical dental treatments, many methods are used to decrease patient's suffering.

A common dental procedure that produces severe pain is the surgical extraction of impacted third molars. In addition to pain, surgical extraction can cause swelling, functional disability, and other morbidity associated with some period of recovery [4]. The most common treatment for these postoperative consequences is the use of medications such as non-steroidal anti-inflammatory drugs, paracetamol or a combination of both for mild to severe pain. Opioid analgesics can also be used to treat more severe pain.

Unfortunately, in some cases, these medications are not fully effective in eliminating pain or even reducing it. In addition, these medications might be associated with undesirable local or systemic side effects, especially on the cardiovascular system [5,6].

Other non-medical methods to control pain, so-called physical methods, include transcutaneous electrical nerve stimulation (TENS) and needling using Chinese acupuncture.

Much research has been conducted to verify the effectiveness of using Chinese acupuncture for relieving pain compared to other traditional pain-relieving medications (Patel et al. [7]; Van et al. [8]; White and Ernst [9]; Melchart et al. [10]). Some studies confirmed its efficacy, while others did not.

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We designed a self-controlled clinical study to evaluate the effectiveness of Chinese acupuncture in relieving pain following surgical extraction of impacted third molars, because the use of analgesics and other medications as painkillers causes insufficient analgesic action and systemic side effects.

The purpose of our study is to determine whether Chinese acupuncture is an effective method for relieving pain following surgical extraction of impacted third molars.

2. Materials and methods

2.1. Patient selection

All subjects were recruited from the patient pool of the Department of Oral and Maxillofacial Surgery, Faculty of Dentistry, Damascus University, Damascus, Syria.

- Patient inclusion criteria included:
 1. Ages 18–40 years; both genders
 2. Healthy
 3. Have two symmetrically impacted third molars on both sides
- Patient exclusion criteria:
 1. Pregnant women
 2. Inflammatory or infected skin disease at the needling points
 3. History of any clinical indication of bleeding diathesis or bruising
 4. History of metal allergy
 5. Allergy to NSAIDs

The sample was composed of 100 treatments for 50 male and female patients who were placed into two main groups:

1. Experimental group (acupuncture group)
2. Control group (non-acupuncture group)
 1. Experimental group (acupuncture group) composed of 50 third molar extraction cases followed by application of Chinese acupuncture at specific points, in addition to prescribing diclofenac potassium to be taken when absolutely necessary.
 2. Control group (non-acupuncture group) composed of 50 third molar extraction cases done using the same surgical procedures as in the first group, except using acupuncture treatment. Diclofenac potassium was also prescribed to be taken when absolutely necessary.

2.2. Clinical procedure

After explaining the nature of the study to the patients and having them sign a written consent form, the surgeon obtained a medical history and did a physical examination.

2.3. Dental surgery

Each patient underwent the surgical procedure in two stages.

First stage: After administration of local anaesthesia (lidocaine 2% with 1:80:000 epinephrine), a surgical extraction of the third molar of the right-hand side was performed by the author (surgeon). Diclofenac potassium was prescribed to be taken when absolutely necessary.

Second stage: Ten days after the first stage, a similar surgical procedure was done to remove the left-hand-side impacted third molar.

Following surgery, the patients received the acupuncture treatment. The acupuncture points used in this study were Huge (Li4, Fig. 3), Jiache (St6, Fig. 2), and Xianguan (St7, Fig. 1).

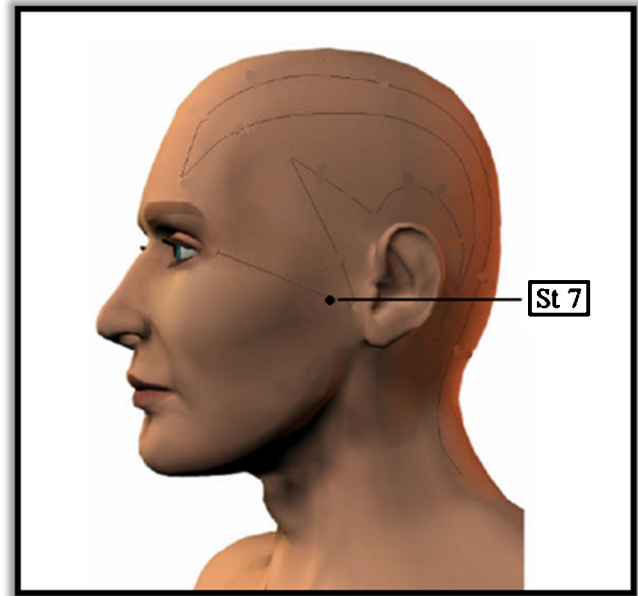


Fig. 1. Acupuncture Point St7, Xianguan (below the jaw).

The acupuncture treatment was administered by an experienced registered acupuncturist. The skin was cleaned with alcohol swabs ipsilateral to the tooth extraction site. Then disposable acupuncture needles were inserted by tapping them through a plastic needle tube to a depth of 0.5–1.5 mm.

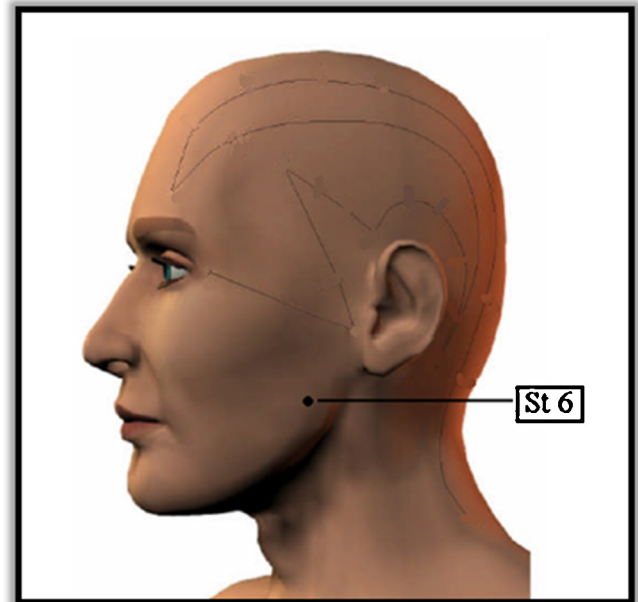


Fig. 2. Acupuncture Point St6, Jiache (jaw bone).

Each needle was left in place for 20 min; during this period the needles were activated for 20 s every 5 min, and then were removed at the end of the treatment.

During the activation process, most patients felt a sensation ranging from actual pain at the point of the needle insertion to a dull tingling pain that is referred in Chinese acupuncture medicine as ‘Teh Chi’, a phenomenon which means that the bioenergy has been activated.

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