

Acupuncture in the Management of Orofacial Pain and Related Disorders: A Review

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Abstract

Oro-facial pain and temporomandibular dysfunction are deemed upon as multifaceted problems and can pose major therapeutic problem in dealing with them. Evidence from clinical studies suggests that acupuncture may be useful in the treatment of orofacial pain, temporomandibular dysfunction and related disorders otherwise resistant to conventional treatment modalities. Acupuncture is an ancient healing technique that has regained its lost popularity in the last two decades. The present paper attempts to review this forbidden procedure and its role in improving the quality of dental care provided to the patients especially in the management of orofacial pain, temporomandibular dysfunction, dental anxiety, gag reflex, xerostomia and trigeminal neuralgia.

Key words: Orofacial pain, temporomandibular dysfunction, acupuncture.

Introduction

Acupuncture is an ancient healing procedure dating back to more than 3000 years in Chinese history.^{1,2} Literary meaning of acupuncture is “needle piercing”. Theorists of acupuncture therapy believe that every disease or symptom is caused by an imbalance of two opposing life forces, which flow through the meridians on which acupuncture points are located. By inserting needles into these points the imbalance created by two life forces can be corrected, much like a key unlocking a door.¹

Various studies on acupuncture have demonstrated that acupuncture analgesia is initiated by the stimulation of small afferent sensory nerve fibers that innervate the muscles. These then send impulses to the spinal cord and ultimately affect the midbrain and pituitary. As these centers are activated there is release of neurotransmitters such as endorphins, enkephalins and monoamines that block the pain message.³⁻⁵

This holistic method is now widely used as a supplementary/complimentary to the regular treatment modalities for numerous pain related conditions in head and neck region including atypical facial pain, trigeminal neuralgia, migraine headache, xerostomia, MPDS, Bell's palsy, TMJ pain and dysfunction, sinusitis, management of Gag reflex, enhance the effect of local anesthesia and so on.⁶⁻¹¹

DISCUSSION

Pain is defined as “an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage”.¹² The pain persisting beyond a reasonable time period is designated as chronic pain. The reason of chronic pain often remains undiscovered and may result in ineffective management. Among the most common chronic pain conditions is orofacial pain and temporomandibular dysfunction. Chronic orofacial pain affects approximately 10% of adults and up to 50% of the elderly.¹³

The management of orofacial pain and dysfunction can yet times be frustrating. Analgesics, antianxiety and antidepressants form the mainstay for management of orofacial pain and related disorders.¹⁴ However; the drugs used are associated with untoward side-effects, such as nausea, vomiting, gastritis, peptic ulcerations, pruritis, sedation, dizziness, and decreased gut motility. Therefore use of adjuvant treatment methods such as behavioral, cognitive, exercise, relaxation, acupuncture and physical modalities that provide sparing effects and decrease the incidence of analgesic-related side-effects can be useful.^{14,15} Acupuncture, an integral part of traditional Chinese medicine, is a well-known and widely employed procedure for pain and other conditions.^{1,16,17}

Acupuncture has stood the test of times for more than 2000 years and has proven its efficacy in management and modulation of many diseases affecting human kind.¹ Utility of acupuncture in the management of pain and related disorders is now well established. There have been increasing numbers of clinical trials evaluating the efficacy of acupuncture technique as an adjuvant method for orofacial pain, temporomandibular dysfunction, depression, xerostomia, gag reflex, intra and post operative pain, headache, migraine, bell's palsy and trigeminal neuralgia.^{2,6-11,16-18}

The core of this traditional healing procedure is based on the fact that health and illness hinges on the concept of 'vital energy'. The flow and distribution of this vital energy within its path is known as 'meridians'. The meridians are associated with major nerve and arterial pathways, joints, and facial planes. Traditionally acupuncture is accomplished by inserting slender needles into appropriate points and stimulating certain areas along these meridians.^{1,17} These areas are called as 'acupoints'. Acupuncture needles are much finer than hypodermic syringe needles and are solid rather than hollow.

Acupuncture points used in dentistry. (Table 1)

Ex 1	Frontal sinusitis, Trigeminal neuralgia, headaches
Ex 2	TMJ dysfunction, Trigeminal neuralgia
Ex 3	Sinusitis, headaches, trigeminal neuralgia (V1)
ST 2	Maxillary sinusitis, trigeminal neuralgia (V2)
ST 3	To enhance LA effect
ST 4	Maxillary sinusitis
ST 5	Trigeminal neuralgia (V3), xerostomia, Facial pain
ST 6	Xerostomia, Facial pain, Trigeminal neuralgia (V3)
ST 7	Temporal headache, TMJ dysfunction
ST 19	Gag reflex, Trigeminal neuralgia, Facial pain
CV 24	Xerostomia, Gag reflex
GB 14	Frontal sinusitis, Headache

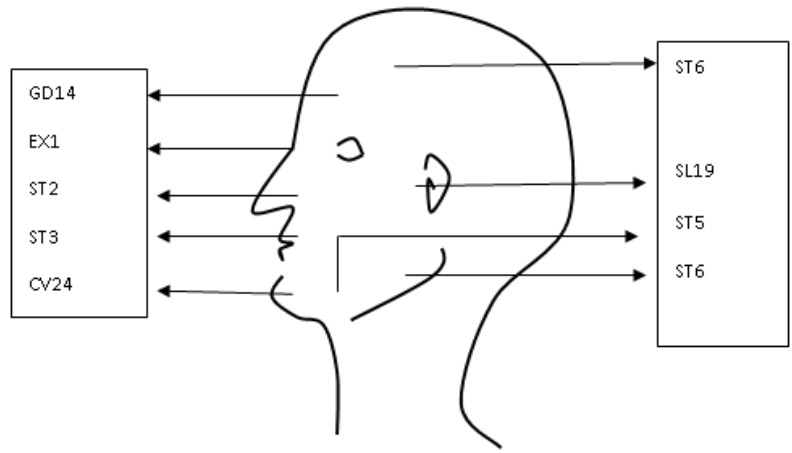


Fig.1: Showing various acupoints on the facial region.

The mechanism of acupuncture analgesia achieved still remains unclear, however various proposed mechanisms include activation of the endogenous pain inhibitory system, release of endogenous opioids including β -endorphins, enkephalins, and dynorphins, and non-opioid substances such as serotonin, norepinephrine, and GABA.^{3-5,17} Acupuncture for orofacial pain and facial paralysis works through stimulation of cranial nerve primarily the trigeminal and facial nerves, respectively. In treating xerostomia, needles stimulate parasympathetic function.¹⁸ In treating craniomandibular pain acupuncture targets sensitive spots primarily in the muscles of mastication.

Temporomandibular-masticatory complex constitutes temporomandibular joint, masticatory system including muscles and dentition. The disorders associated with this complex constitute the second most common cause of pain in the oro-facial region only next to odontogenic.¹⁴ Large populations of patients developing signs of TMDs seek care at some point of time during the course of disease. At the same time diagnosis and management of TMD disorders can pose a challenge to even an experienced clinician. The focus of management of these disorders is on gradual shift from conventional aggressive therapies to a more conservative mode with emphasis on counseling, behavioral modification, correction of occlusal imbalances and physical therapies.¹⁴ Evidence suggests that acupuncture is very effective in the management of pain related to temporomandibular dysfunction and disorders.^{6-8,19,20} Acupuncture can also alleviate pain of facial and dental origin.^{1,8} Researchers report that acupuncture may be a realistic alternative to other, conventional stomatognathic treatment methods for some patients with long lasting chronic facial pain and dysfunction.⁸

Anxiety related to dental treatment is a common phenomenon that has a significant impact on the provision of rendering appropriate dental care to the patients. Anxiety related to dental problems and subsequent treatment still remain a challenge for many practitioners and pose real time problem in managing anxious patients. Acupuncture performed prior to dental procedure can have a beneficial effect on the level of anxiety in patients with dental anxiety and may offer a simple and an inexpensive modality of management of anxiety and stress related to dental treatment.¹⁰ Y Sun et al conducted a meta-analysis and found that acupuncture and related techniques were effective in the management of postoperative pain which was demonstrated by a significant reduction of postoperative pain scores and opioid consumption by the patients.²

Gag reflex is a normal physiologic protective mechanism to prevent entry of foreign material into the pharynx or trachea. Few patients can have an exaggerated gag reflex mechanism which can cause problem while delivering dental treatment to the patients and can be an obstacle for acceptance of dental treatment by the patient as well.¹¹ Acupuncture has proved to be effective method in controlling severe gag reflex during delivery of dental treatment including impression taking or placing intra oral radiographs.^{9,11}

CONCLUSION

Given the complexity of orofacial pain and related disorders, it is imperative to seek a multidisciplinary approach in dealing with the problems. Acupuncture can serve as a safe alternative to conventional treatment modalities. The efficacy of acupuncture in the management of temporomandibular dysfunction syndrome and oro-facial pain has been well documented and supported by various studies. Yes, acupuncture works in certain clinical situations otherwise resistant to conventional methods. Done accurately by an expert it is a wonderful alternative treatment for many pain related conditions of head and neck. In the light of current research it can be concluded that acupuncture can act as an adjuvant or supplement the conventional therapy in the management of orofacial pain and related disorders.

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