An Investigation into the Use of Traditional Chinese Medicine in the Treatment of Orofacial Disorders

F Au and J Cresswell

Summary
While on student elective from the Dental School of Bristol University, the authors had the chance to study the basic principles of traditional Chinese medicine and to observe the treatment of orofacial disease in a modern general hospital in Shanghai and in a specialist stomatological hospital at Beijing Medical University. The background to traditional herbal medicine and various forms of acupuncture encountered during their visit is discussed, as are some case histories. They report that clinical experience in China suggests that the combination of traditional Chinese and Western treatment techniques offers better results than either method alone.

Key words
Acupuncture, China, Herbal medicine, Student elective, Traditional Chinese medicine.

Introduction
This is a report of a student elective from the Dental School of Bristol University, undertaken in China and composed of two periods of study. The first period was conducted at the Ninth People’s Hospital in Shanghai, a modern general hospital affiliated with the city’s Second Medical University. The second was spent at Beijing Medical University’s School of Stomatology, which consists of a stomatological hospital, a research institute and a teaching faculty which enrolls about 75 undergraduate students each year. It is the largest school of stomatology in China and treats around 1750 out-patients every day. In Beijing, additional visits were made to Donzhimen and Xi Yuan Traditional Chinese Medicine hospitals, the Traditional Chinese Medicine department of Beida General Hospital and Tongretan Traditional Chinese Medicine drug store.

We hoped during our time in China to establish a basic understanding of the theoretical and practical aspects of traditional Chinese medicine (TCM); to observe dentistry in China, with emphasis on TCM; and to investigate the variety of orofacial conditions treated by these techniques.

The morning sessions, held between 8.00am and 12.00 noon, were spent observing out-patient clinics in the department of traditional Chinese medicine (Figure 1). With the generous help of the staff, we were able to complete questionnaires for many of the patients we saw. In addition, we performed acupuncture and the related technique of point injection on willing patients. A variety of activities was arranged for the afternoon sessions which were held between 1.30pm and 3.30pm. These included discussions, lectures, video and slide shows and the visits mentioned above.

Figure 1. An out-patient clinic held by Dr Gao in the department of traditional Chinese medicine at the Ninth People’s Hospital in Shanghai.

We had obtained initial background information from a variety of journals and texts listed in the bibliography, and had compiled a questionnaire (Figure 2), kindly amended and translated by Dr Sun, to help us structure our observation in the Chinese out-patient clinics. Without exception, the staff were generous enough to involve us fully in the diagnosis and treatment of the patients and were always willing to discuss the cases. Further insight into traditional Chinese medicine was gained by lectures and video and slide shows. Broader topics, such as current research, were discussed at departmental meetings which were organised especially for our benefit.

The school of stomatology and the stomatological departments of the general hospitals that we visited are staffed by high-level dentists called stomatologists. They differ from the health aides who provide primary dental education and care in smaller urban and rural health centres and clinics.
Stomatologists have a five or seven year university education, leading to a bachelor or master of science qualification, which contains both Western dentistry and traditional Chinese medicine. A further, comprehensive two-year postgraduate course in TCM enables stomatologists to manage head and neck disorders effectively by traditional techniques.

Introduction to traditional Chinese medicine

Information on the basis of traditional Chinese medicine was presented to us in lectures during our visit. The principles of TCM are derived from ancient Taoist beliefs, which suggest that the universe and all that is contained within it are governed by two life-forces Yin and Yang. These are diametrically opposed, but are interdependent and so establish a state of dynamic equilibrium. In the correct balance, the preservation of order in all natural phenomena is maintained.

In a healthy organism, the correct balance between Yin and Yang is maintained when a vital energy known as “Qi” flows freely through a series of channels around all parts of the body. If the flow of Qi is disrupted by the presence of “noxious air”, or “malignant Qi”, then the balance between Yin and Yang is disturbed and disease occurs. For this reason, the technique of inserting acupuncture needles into the channels is thought to release the noxious air and therefore restore the normal flow of Qi.

Although they cannot be demonstrated anatomically, twelve paired channels are said to lie on each side of the body and terminate in either the upper or lower limb. They are related to and named after one of the twelve important “Zang Fu” organs. A further two channels lie in the midline, one anteriorly and one posteriorly. Each channel is thought of as being predominantly Yin or Yang. A summary of the main acupuncture channels is given in Table 1.

Diagnosis

In traditional Chinese medicine, a diagnosis is made on the basis of information obtained from the clinical history and an examination of the patient’s pulse and tongue.

The history is directed towards detecting symptoms which implicate one or more of the Zang Fu organs in the disease process. For example, complaints of irritability demonstrate a problem with the liver, whereas tooth loss is associated with kidney dysfunction. The Zang Fu organs and their related symptoms are listed in the questionnaire (Figure 2).

A detailed study of the pulse provides essential information in the diagnosis of disease. The pulse of the radial artery is monitored at both left and right wrists, using three fingers applied with first superficial, and then deep, pressure (Figure 3). This combination enables 12 separate observations to be made, which relate to the state of Qi in each of the main channels. When disease is present, it is possible to determine which of the Zang Fu organs is affected and which method of treatment should be used.

Examination of the tongue is important because it is connected, directly or indirectly, with the main channels. In addition, the tongue can be considered a local representation of the whole body, with different regions corresponding with each of the internal organs, a phenomenon known as holography.

<table>
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<th>Table 1</th>
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<td>A SUMMARY OF THE MAIN ACUPUNCTURE CHANNELS</td>
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<tr>
<td>Yin</td>
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<tr>
<td>Upper Limb</td>
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<td>Midline</td>
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* A structure with no known equivalent in modern anatomy.

The channels are described as being three-dimensional in form and are considered to lie at varying depths beneath the skin surface along their courses. At certain intervals, known as acupuncture points, they lie immediately below the skin surface and can be manipulated by the insertion of needles. Theoretically, 365 such points are thought to exist, but fewer than 100 are used on a regular basis.
The colour of the tongue body and the type of coating give additional information: for example, a dry grey coating is associated with Yin deficiency, as seen in febrile illnesses, whereas a wet black coating represents a deficiency of Yang (Figure 4).

**Treatment**

In TCM, clinical abnormalities are thought to be a manifestation of a fundamental imbalance of Yin and Yang. Therefore, treatments are directed at appropriately promoting or inhibiting the flow of Qi in order to restore the equilibrium. The principal therapeutic techniques in the treatment of orofacial disorders involve the prescription of herbal medicines and the application of acupuncture, and its related techniques.

Traditional Chinese herbs are used to treat a wide variety of disorders. Those observed were:
periodontal disease, pericoronitis, traumatic ulcer, recurrent aphthae, Bechets syndrome, pemphigus vulgaris, lichen planus, DLE, Candidiasis, Sjögrens syndrome, Peutz-Jeghers syndrome, facial paralysis and burning mouth syndrome.

A typical herbal prescription consists of 12 to 15 herbs. The TCM pharmacist makes up the mixture from raw materials (Figure 5). The patient is instructed to boil about 15 grams of the mixture in 300 millilitres of water until the volume is reduced by half and the concoction is drunk as instructed.

![Figure 5. Traditional Chinese medicine pharmacy at Beida General Hospital.](image)

Normal flow of Qi in disrupted channels can be restored by mechanical, electrical or thermal stimulation of acupuncture points.

Mechanical stimulation of acupuncture points by the insertion of acupuncture needles is used routinely in TCM clinics to treat a wide variety of disorders. The orofacial disorders that were observed to be treated in this way were: pulpitis, recurrent aphthae, lichen planus, Sjögrens syndrome, facial paralysis, TMJ dysfunction, trigeminal neuralgia and burning mouth syndrome.

The channels to be treated are identified during the diagnosis of the disease, as outlined above. Then the practitioner selects various local and distal acupuncture points. Due to the pattern of the channels, it is not uncommon for at least some of the acupuncture points to be located at some considerable distance from the affected area of the body. Points which are used frequently in the treatment of orofacial disorders include Hegu, at the base of the thumb on the dorsum of the hand, and San yin jiao, which lies near the ankle protuberance on the medial aspect of the lower leg.

In order to locate acupuncture points, the body's surface is divided into a number of small units. Each unit is called one “cun” and is equivalent in distance to the maximum diameter across the proximal interphalangeal joint of the patient's index finger. Any given acupuncture point is said to lie at a certain number of cun from an identifiable anatomical landmark. For example, the lower leg measures 16 cun and the point San yin jiao is said to be four cun superior to the medial ankle protuberance. This system enables acupuncture points to be located, irrespective of the size of the patient.

The needles in use at the clinics are made of stainless steel and range from 7 to 125mm in length and 0.20 to 0.35mm in diameter. They are reused following sterilisation. A needle of appropriate length is selected according to the location of the acupuncture point. The skin overlying the point is held under tension with the free hand. The handle is held between the thumb and forefinger and the shaft is steadied with the middle finger. It is inserted through the skin to the required depth as quickly as possible, whilst rotating it by rolling the handle back and forth between the thumb and forefinger.

It is rare for the patient to experience pain during this procedure, though a certain sensation called “deqi” must be experienced before any therapeutic benefit is achieved. Deqi is similar to a deep soreness, numbness, aching, burning or tingling sensation, which is experienced at the acupuncture point and frequently up and down the associated channel. If deqi is not achieved, the needle is rotated with a simultaneous up and down movement, until that sensation is felt by the patient.

When the needle penetrates the skin, an area of erythema at the needle insertion site is produced, together with localised oedema (wheal) and the spread of erythema into the surrounding skin (flare). Bleeding is uncommon and when it does occur it is readily controlled by simple pressure. A haematoma resulting from bleeding under the skin was seen on only one occasion. A typical course of acupuncture consists of ten visits made at two to three day intervals. At each treatment session, the acupuncture needles are left in situ for 20 to 30 minutes.

The technique of “point injection” is closely related to acupuncture. However, instead of acupuncture needles, hypodermic needles are used to inject vitamins or various herbal preparations into the acupuncture point (Figure 6).
needles, but the method we observed involved the placement of small dried seeds from the plant Vaccaria vegetalis over the acupuncture points. These are held in place with small pieces of adhesive tape for approximately seven to ten days and the patient is instructed to compress each area three or four times per day. This method was observed in the treatment of DLE and burning mouth syndrome.

Figure 7. A wall chart demonstrating how various structures of the body are represented by different regions of the ear.

In the treatment of facial paralysis, we observed a variant of acupuncture in which electrical impulses are used to stimulate the acupuncture needles (Figure 8). This form of treatment, known as "electroacupuncture", appeared to be very similar to simple acupuncture, except that a pulsed, direct current was used to stimulate the muscles into which the needles were embedded, producing a visible twitch. The amplitude and frequency can be adjusted until the patient feels a tingling sensation.

Figure 8. A 61 year old male patient receiving electroacupuncture on the face for the treatment of facial paralysis affecting the left side.

Thermal stimulation of acupuncture points is known as moxibustion. In the technique we observed, a tinder of dried Artemisia leaves known as "moxa" was applied to the handles of acupuncture needles inserted into the body and ignited. The heat from the moxa is conducted down the needles to the surrounding tissues. It is thought that this form of treatment is suitable for chronic conditions.

A total of 67 patients were observed during our visit. Figure 9 illustrates the relative proportion of orofacial disorders treated by traditional Chinese medicine.

Figure 9. Orofacial disorders treated by traditional Chinese medicine. "Others" includes: caries, pericoronitis, traumatic ulcer, Behcets syndrome, pemphigus and Peutz-Jeghers syndrome.

Figure 10 illustrates the proportion of traditional Chinese treatment methods used in the treatment of orofacial disorders. In many cases, more than one method of treatment is used. For example, a patient with facial paralysis was prescribed some herbal medicine and treated with acupuncture.

Figure 10. Traditional Chinese treatment methods used in orofacial disorders.

Case histories
The following two clinical cases demonstrate some of the essential features of traditional Chinese medicine mentioned above.

Oral Lichen Planus
A 60 year old female with a five year history of erosive lichen planus was diagnosed as being Yin deficient. Therefore, the principles of treatment were aimed at restoring Yin. Twelve herbs were prescribed, the quantities of which varied between 10 and 30 grams.

The patient's condition was reported to have improved gradually over a two month course of treatment. She was seen on five occasions during this time and at each visit the prescription was adjusted according to the latest diagnosis. No new lesions were seen during a six month follow-up period.

Trigeminal Neuralgia
A 50 year old female with a nine year history of trigeminal neuralgia was diagnosed as suffering from a disruption in the circulation of Qi caused by invasion of noxious air. The pain, which was described as intense and piercing, was in the maxillary and mandibular regions on the right side.
and had become progressively intolerable. Using a visual analogue scale, a subjective assessment of pain revealed a score of 19 out of a possible 20. Negligible relief from symptoms was reported with a daily 800 milligram dose of carbamazepine.

The principles of treatment were aimed at dispelling noxious air and promoting the circulation of Qi. Eight acupuncture points, primarily belonging to the stomach channel, were chosen. Six points were stimulated by conventional acupuncture and two by high frequency electroacupuncture. The intensity of the pain was reported to have decreased steadily over 16 visits. Using the original scale, a pain score of four was achieved by the end of treatment.

Discussion

A wide variety of orofacial disorders are treated by traditional techniques in China. TCM has equal status with that of Western medicine and patients can choose to be treated by either method. Patients frequently opt for TCM because they prefer the holistic nature of the treatment, because they believe the medications they receive have no side-effects and, often, because friends and relatives have been treated successfully by TCM. Another important factor is that a day's prescription of medicinal herbs may cost in the region of three yuan (approximately 25 pence) whereas Western drugs are often prohibitively expensive. In fact, the expense of Western medicines has prompted pharmacological investigations centred around attempts to identify the active biochemical compounds of different herbs. For example, a research laboratory in Xi Yuan hospital was investigating thrombolytic properties of naturally occurring compounds extracted from various plants.

The theory behind traditional Chinese medicine is often difficult to comprehend in terms of accepted Western medical principles. The reason is because its origins are based on ancient philosophical beliefs developed at a time when ideas concerning the structure and function of the body, together with those concerning the nature of disease, were not well understood. However, a number of proposals have been put forward as to possible mechanisms of action of traditional Chinese methods of treatment. For example, a typical prescription of herbal medicine consists of several plant or animal derivatives which contain a vast number of organic compounds. It is possible that many of these, either singly or in any number of combinations, function as pharmacologically active components. It is not inconceivable, therefore, to appreciate that certain prescriptions may be effective in treating specific diseases.

Acupuncture may be considered to work on a simple basis of "counter-irritation", in which a painful stimulus will lessen the perception of another pain. This is supported by the "Gate Theory" of pain put forward by Melzack and Wall. We were told that pain impulses travelling along the small diameter A-β nerve fibres are inhibited by impulses that pass along the large diameter A-γ nerve fibres and that acupuncture stimulates the large nerve fibres to produce such inhibition.

In addition, it has been shown that endorphin levels in the CSF are raised following acupuncture and that the resultant analgesic effects could be blocked by naloxone, a morphine antagonist. Other naturally occurring substances found to be increased after acupuncture include enkephalins, serotonin and ACTH. Experiments on two rats with a cross-circulation link have found that acupuncture applied to one rat was effective in relieving painful stimuli on the other. The implication is that a combined neuro-humoral mechanism is responsible for the effects of acupuncture.

The School of Stomatology in Beijing has a Department of Integrated Traditional Chinese and Western Medicine. This highlights a growing tendency to combine traditional Chinese and Western techniques in clinical practice to enable patients to benefit from both types of treatment. It is the experience of the clinicians in the department that better results are obtained when treatment methods are combined than when either method is used in isolation.

Our elective period provided a fascinating insight into traditional Chinese medicine. We had not expected to understand the subject fully, for this would have required a detailed investigation of its theory and a great deal more time. Rather, we had hoped to learn some of the basic principles behind traditional Chinese medicine and how they relate to the treatment of orofacial disorders. Now, at the conclusion of our visit to China, we feel that our aims have been successfully achieved.

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Bibliography


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