Acupuncture in the treatment of temporo-mandibular disorders in Sydenham’s chorea patient: a case report

A 33-year-old woman, a housewife with two daughters, initially presented at the acupuncture clinic with rapid, irregular and aimless involuntary movements of the hands and legs, trunk and facial muscles. The medical history revealed that at age of four the patient developed her first episode of rheumatic fever, without obsessive-compulsive behaviour. However, the patient showed symptoms compatible with Sydenham’s chorea such as choreiform movements, hypotonia, motor agitation, loss of coordination, gait disturbances and impediment of speech, associated with joint pain, most prominent in the temporo-mandibular joint. The patient has been treated since then with haloperidol. Therefore, during the two pregnancies she presented an exacerbation of her previous symptoms of Sydenham’s chorea, which is a very common finding, reporting mainly limitation in the opening of mouth associated with pain and clicks in the temporo-mandibular joint. It is important to emphasise that she did not stopped taking the medication during the pregnancies. Additionally, the pregnancy proceeds normally with any recurrence of the chorea and complications, and her daughters are not affected by any disease.

The conventional treatment for temporo-mandibular joint pain (occlusal splint) was not able to reduce these symptoms exacerbated during the pregnancies so five years after the second pregnancy the dental department referred her to the acupuncture treatment.

An evaluation of the patient’s disease history revealed that she had been experiencing a continuously temporo-mandibular joint pain for many years and she still presented the involuntary movements of the arms and legs, trunk, and facial muscles since she was 4-years-old. There is no data supporting a connection between chorea and temporo-mandibular joint dysfunction. Therefore, studies should be done in order to identify if the facial spasms in Sydenham’s chorea can leave to a temporo-mandibular joint dysfunction.

At the examination, the patient was calm without any signs of anxiety. The patient presented involuntary movements at the temporo-mandibular joint. On palpation of the area, moderate tension was found in the region of LU19 and TE21. Despite the fact that the patient did not show any obvious signs of apprehension, it was decided to approach both, the muscle-joint component of the temporo-mandibular disorders and the psychological factor. Acupuncture treatment was started at the first appointment. The patient was seated comfortably and upright in a dental chair. The skin surface was prepared with alcohol swabs. Local points (tender spots in temporo-mandibular joint) were needled first at the ST6, ST7, LU19, TE21 and VC20 acupuncture points. Disposable (0.6 × 25 mm) were inserted at relevant points until de qi sensation (soreness, numbness, distension or heaviness) was achieved, with rotation clockwise and anti-clockwise for 3–5 s and left in situ for 20 min without any stimulation. Various distal points were used in an attempt to improve the effectiveness of the treatment, as is a common practice in traditional Chinese acupuncture. The distal LI4, LR3 and ST36 were used on both sides.

On the following visit a week later, the patient claimed that her symptoms improved. In addition, the involuntary movements in the hands were also reduced and the patient was able to go back to her embroidery. The patient received a similar acupuncture treatment on her second visit, and on the third appointment she claimed to be still improving. In view of her continued improvement, it was decided to provide subsequent treatment in a weekly basis, to a total of 12 sessions. Follow-up appointments at 6 months and 12 months after treatment revealed that the patient was still enjoying her embroidering and had no discomfort in the temporo-mandibular joint.

DISCUSSION

Although the classical description of Sydenham’s chorea was published as long ago as 1685, the pathogenesis of the disease is still unclear. Neuropathology studies have found neuronal degeneration and vascular changes in the cerebral cortex, basal nuclei and cerebellum. Pharmacological and biochemical alteration, such as dysfunction of the pre-synaptic nigrostriatal dopaminergic system resulting in increased dopamine turnover has been suggested. The predominance of the female gender and the mean age of 11.7 years at the onset of Sydenham’s chorea are in accordance with the literature.

In this patient, who had been experiencing pain in the temporo-mandibular joint for many years without response in several treatment approaches (occlusal splint and transcutaneous electrical nerve stimulation), the symptoms improved after a single acupuncture session and did not return within one year follow up period. Evidently, a placebo effect cannot be excluded through this case report, thus further studies must be performed to validate our current findings with a larger number of patients and a control group.

Although numerous approaches have been described for this condition, acupuncture is increasingly being used as an alternative to conventional treatment. In this single case report, the relation between time and treatment solution suggests that the acupuncture contributed to its resolution. Expectation may also have played a role. This report is the first known published description of the use of acupuncture in the treatment of temporo-mandibular disorders in a patient with Sydenham’s chorea.

There are several factors in this case that favour causality rather than coincidence. First, spontaneous improvement or resolution in less than 1 year from presentation is rare. The second reason to attribute the improvement to acupuncture is a plausible physiological mechanism. The gate control theories and modern pain physiology try to provide a scientific ground for the actions of acupuncture. Acupuncture acts as a pain reliever by stimulating the acupuncture points, which affect the A-β nerve fibres. With the constant twirling of the needle, a steady stream of non-pain impulses is transmitted to the substantia gelatinosa causing the gate to close. Once the gate is closed, subsequent pain impulses coming from the slow conducting C fibres cannot pass through. Thus, no pain is felt. The impulses from the A-β fibres can be relayed to the thalamus, which closes the final gate. Once the gate in the thalamus is closed, analgesia is produced on the entire body. The release of endorphins in the body by acupuncture describes yet another theory. Endorphins are natural painkillers found in the central nervous system. List and Helkimo (1988) demonstrated that acupuncture points often seem to match with those parts of the masticatory muscles exhibiting tenderness on palpation. The same authors showed that (ST7) corresponds with the location of tender points (latent trigger point) in the masseter muscle of the painful temporo-mandibular disorders. It was concluded that the acupuncture point should be in the area of presenting discomfort or to a nearby peripheral nerve, anatomically related to the disorder. This approach may also be helpful to elucidate possible unknown aetiological and physiological mechanisms involved. In addition, it has been suggested that as few needles as possible should be used, in order to discern which needle location is most effective in the management of this condition, rather than a multitude of needles of unknown effect.

REFERENCES

CONCLUSION
In conclusion, a case of the temporomandibular disorder in a Sydenham’s chorea patient responding to acupuncture is presented. The acupuncture may be worth trying as part of a comprehensive treatment approach for these patients since this condition is otherwise difficult to treat.

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Neuroanatomical basis of acupuncture treatment for some common illnesses
Dr Cheng is to be commended for his article on the neuroanatomical basis of acupuncture.1 However, Cheng has based his conclusions on the analysis of acupuncture formulae for common illnesses, as prescribed by five acupuncture academies. This approach, using consensus acupoints, is unfortunately vague, since they are surface markings intended as guides for acupuncturists, whereas target receptors are often deeply situated and can vary from person to person. Furthermore, the diagnoses are also vague: for example, “low back pain” is a common unspecific complaint that can be derived from many different causes; likewise, sciatica.

In commenting on the Gunn model for pain of radiculopathic origin, he referred to muscle shortening, but neglected the other segmental manifestations of peripheral neuropathy. “Neuropathy” (ie, altered function in the peripheral nerve, with or without altered structure) includes dysfunction not only in the motor, but also in the sensory and autonomic (vasomotor, pilomotor, sudomotor) nervous systems. He has also not mentioned the electromyographic evidence of neuropathy in tender muscles, including increased insertion activity, polyphasic action potentials and prolongation of the motor-unit action potentials. Frequently, a partial interference pattern is obtained despite maximum voluntary effort.7 Needle stimulation is generally effective in causing both physical evidence of neuropathy as well as abnormal potentials to resolve.

Trophedema (see figure 1),5 a significant sign of radiculopathy and smoldering parainflammation,1 has not been mentioned.

Cheng commented on the “local effect” produced by needling. Physiologically, except when there is total denervation, there can be no local effect as any stimulation immediately creates a spinal reflex: this is the difference between Galvanic and Faradic stimulations.

The many practitioners who use the radiculopathy model depend on consistent physical signs of radiculopathy to identify the offending segment(s), thereby quickly locating neuropathic muscles needing stimulation.

The Gunn rationale for intramuscular stimulation has been reviewed and endorsed by many physiologists. Dr James Henry, Scientific Director, Chair in Central Pain, Professor of Psychiatry and Behavioral Neurosciences and Anesthesia, McMaster University:

[Intramuscular stimulation] is based on Cannon’s hypotheses regarding homeostasis and the dysfunction that arises in a physiological system when this homeostasis is interrupted, such as by denervation or withdrawal of normal neuronal function (spondylosis is a common cause)—when a unit is destroyed in a series of efferent neurons, an increased irritability to chemical agents develops in the isolated structure or structures, the effect being maximal in the part directly denervated. It has been shown that all structures, including their associated spinal reflexes, can develop supersensitivity. In contemporary terms, this would account for the central sensitization that is being so well-characterized as accounting for neuropathic pain, as well as some of the peripheral signs that accompany neuropathic pain.5

A reviewer of a report on acute respiratory distress syndrome commented:

I think this report is extremely fresh and thought provoking. It certainly provides an entirely new paradigm for viewing [acute respiratory distress syndrome]. The use of physiologic principles adds strength to the rationale behind the treatment. The end result is remarkable. An “eastern” view of his report could be adding “chi” to deficient meridians. Dr Gunn’s use of modern “western” physiologic principles to explain ancient wisdom is part of the vital link that Integrative Physicians strive for. The use of physiologic principles to explain complex phenomenon in a fresh new way should be a cornerstone for Integrative Medicine. This is necessary if Integrative Medicine is to become a respected aspect of Medicine in general. In the end, the results speak for themselves, and fortunately this time the results are good.6

Acupuncture can be considered as a most useful modality for treating spondylosis and the ensuing radiculopathy. In doing so, it can alleviate a wide variety of secondary effects.

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