



GENERAL ACUPUNCTURE

## Case Study of Benign Hand Tremors

Josephine Fan; Bin Xu, PhD, OMD (China), LAc; Yemeng Chen, PhD, LAc; Audrey Krapf, RN, MBA, LRS-1, PhT; Rosemary McCarthy, RN, BS

Patients without degenerative diseases causing tremors are often given the diagnosis of essential tremors, for which treatment options are limited to lifestyle changes and medications. However, these may or may not work, and may have undesirable side effects. Beta blockers, anti-epileptics, and electrical deep brain stimulations are the only routes of therapy that conventional medicine offers.<sup>1</sup>

Essential tremors are shown to affect approximately 1 percent of the general population, although that number increases to 5 percent in patients 65 years and older, which means it affects approximately 10 million people in the U.S. alone.<sup>2</sup>

In the clinical setting, acupuncture has seen marked therapeutic effects, reducing or eliminating the effects of hand tremors and maintaining an improved quality of life. Due to the fact that acupuncture uses fine, sterile needles to stimulate nerves and the release of hormones, it's possible that this is what provides the therapeutic effects seen in patients with tremors, allowing patients to reduce or eliminate the need for harsher therapies.

This particular case study details the treatment and results of a patient, referred to as TR, who came to the New York College of Traditional Chinese Medicine teaching clinic at Farmingdale State College with severe hand tremors (suspected essential tremors, but never formally diagnosed) which was affecting his ability to function in his everyday life.

Case History



TR, a 65 year old male, complains of a history of hand tremors, starting from 8 years old and increasing in severity as he got older. There is implied genetic origin due to the patient's three male siblings having the same symptoms. The patient's mother also suffered from hand tremors, although neither of his two female siblings exhibit symptoms. Patient does not have a history of anxiety or stress, and reports himself as generally healthy otherwise, although he has been having diarrhea of unknown reasons for about one-and-a-half years.

The patient has been coming for acupuncture treatments to maintain his quality of life, twice a week on average, since 2012, notwithstanding school vacations when no interns are present.

Patient reports that the acupuncture treatments have helped his hand tremors, which worsen between lengths of time when no acupuncture treatments are provided. Tremors also increase after physical activity. Tremors are most noticeable when the muscles of the hands and arms are engaged. Patient does not drink coffee or alcohol, under the assumption that it will further exacerbate his symptoms.

TR came to our teaching clinic at the Farmingdale State College in September 2012 to begin his acupuncture treatment for his hand tremors.

#### Diagnosis Made By Western Medicine

The patient and his brothers were diagnosed with familial benign tremors. Blood tests for hormone levels have shown no remarkable indications. Echo-cardiograms ordered by his cardiologist shows ventricular wall movement. Arterial dopplers show plaque buildup in carotid branches. A suspicious spot on his thyroid warranted a biopsy in March 2016.

#### Medication History

Patient reports no medications taken. Patient takes a multivitamin and fish oil as daily supplements. Furthermore, two of the patient's brothers take beta blockers for the hand tremors, but it is only effective in managing the symptoms for one.

#### Assessment by TCM

The diagnostic methods used by TCM require not only the main complaint as given by the patient, but also an overall condition and details about the patient's constitution in order to reach a

diagnostic conclusion. It includes inquiry of present and past medical history and the current symptoms, observation, palpation, and pulse and tongue inspection.

The patient reports no other issues other than the hand tremors and diarrhea. Physically, the patient is well built and proportionate, not overweight nor underweight. No malnourishment present, but skin and hair are somewhat dry. His tongue is pink with a thin white coating and puffy in appearance. His pulse is wiry and slippery on both the left and right sides. The patient is conscious and mentally aware of time, place, and orientation. Symptoms worsen after physical exertion, and upon usage of the affected limbs.

According to TCM diagnostic theory, the symptom of hand tremors is due to liver wind from the rising of liver yang, and rising liver yang is often due to a liver blood deficiency. Due to the fact that his hand tremors are congenital in nature, there is a kidney deficiency as the root cause. The kidney is also responsible for the marrow, and the brain is the sea of marrow.

The kidney is represented by the water element, which according to Five Element Theory, nourishes the wood liver. Should there be a dysfunction in the kidney, then the liver will likewise be affected.

### Treatment Principle

According to his diagnosis and overall condition, we established a treatment principle based on subduing his liver wind by suppressing the rising liver yang, and nourishing the liver blood and the kidney so they hold down the wind. The goal of the treatment is to reduce his hand tremor symptoms so that he can maintain a good standard of living.

The patient sees the teaching clinic at the Farmingdale College Health and Wellness Center twice a week, since September 2012, and will be continuing this treatment for the foreseeable future.

### Point Selection

The selection of the acupuncture points used were based on the principles of:

- Point specificity
- Empirical points
- Channel / meridian effect

The points used and selected were modified slightly during each successive treatment based on the patient's constitution at the time of the follow up consultations. The point formulas below were alternated each treatment.

- DU20 (Baihui), upper yellow (Master Tung), lower yellow (Master Tung), ST36 (Zusanli), LR3 (Taichong), SP6 (Sanyinjiao), LI4 (Hegu), SP10 (Xuehai)
- DU20 (Baihui), LI4 (Hegu), LR3 (Taichong), Yintang, LU9, PC6 (Neiguan), HT7, SP9, SP10, KI3, ST36
- Tremor zone (Scalp acupuncture), DU20, CV17, CV12, KI3, SP6, ST36

### Needle Technique & Treatment schedule

All points were needled with the even method. The point DU20 was inserted first, and removed last. The treatment schedule was twice a week for an unspecified amount of time based on the management of the patient's symptoms. Each treatment session lasted 25 minutes, with 15 to 20 minutes for initial consultation, and another 10 minutes for aftercare recommendations.

Results indicate that the patient's hand tremors reduced drastically after each treatment. Patient reports he does not know how long the results will last, and may only notice when it has returned to such a severity that he cannot eat a meal. However, he is satisfied with the maintenance of his symptoms during the period of reduction of his hand tremor symptoms.

Patient reports that aside from his one male sibling who has his symptoms subdued by beta-blockers, his symptoms are less in severity than the remaining two brothers, which he attributes to his acupuncture treatments.

## Discussion

Upper-limb tremors that are not degenerative in nature, sometimes referred to as essential tremors, are considered action tremors; unlike Parkinson's, they worsen when the muscles of the limb are in use, rather than worsening during resting.<sup>3</sup>

The causes of these tremors remain unclear, but as with our case study, the issue seems to have a genetic linkage. It has been shown that these [tremors](#) do, in fact, run within families.<sup>4-5</sup>

Other possible factors responsible for essential tremors may be linked to higher levels of the neurotoxin harmaline.<sup>6</sup> Due to the fact that this neurotoxin is often found in meat, higher levels of meat consumption has been linked to greater incidences of essential tremors.<sup>7</sup>

The use of acupuncture for essential tremors has started to garner the attention of researchers. Some studies have shown that acupuncture, in combination of medications, were more effective at controlling the symptoms of the tremors than just the medications alone.<sup>8</sup> Other case studies in clinical settings have seen a reduction of tremors with the use of acupuncture.<sup>9</sup>

Research suggests that the stimulation of nerves can interrupt the mechanism of the tremors due to the fact that when manipulated, the acupuncture needles activate the somatic sensory receptors that are sensitive to physical distortion, along with a multitude of changes observed in the [thalamus](#),<sup>10</sup> which is thought to play a role in tremors.<sup>11</sup>

According to TCM, the cause of tremors are due to internal wind from the inability of the liver to hold down the internal wind, most often due to a depletion of liver essence. *Neijing* says, "All kinds of wind and dizziness are associated with the liver; all kinds of sudden stiffness are associated with wind."

The use of Du 20 (Bai Hui), which has the indications of subduing internal wind and rising yang, with the improvement as seen in our patient, confirms that our initial TCM diagnosis of internal wind and rising yang is correct. Then, to treat issues with the liver, focusing on the upper yellow according to the Master Tung Points, which are responsible for the liver meridian, and lower yellow helps in the kidney function to nourish the liver. The tremor zone based on scalp acupuncture is indicated for patients who experience body tremors.

## References

1. Abboud H, Ahmed A, Fernandez HH. "Essential tremor: choosing the right management plan for your patient." *Cleveland Clinic Journal of Medicine*, December 2011; 78(12):821-8.
2. Stephens, S. "Essential Facts about Essential Tremor." *Neurology Now*, 2011; 7(1), 21-23.
3. "LINGO1 variant responsible for essential tremors and Parkinson's disease." *news-medical.net*. Retrieved October 27, 2014.

4. Deng H, Le W, Jankovic J. "Genetics of essential tremor." *Brain: A Journey of Neurology*, 2011; 130(6): 1456-1464.
5. Sullivan KL, Hauser RA, Zesiewicz TA. "Essential tremor: Epidemiology, Diagnosis, and Treatment." *The Neurologist*, 2004; 10:250-8.
6. Louis, Elan D.; Jiang, Wendy; Gerbin, Marina; Viner, Amanda S.; Factor-Litvak, Pam; Zheng, Wei. "Blood Harmaline (1-methyl-9h-pyrido[3,4-b]indole) Concentrations in Essential Tremor: Repeat Observation in Cases and Controls in New York." *Journal of Toxicology and Environmental Health*, 2012; Part A 75 (12):673-683.
7. Louis ED, Keating GA, Bogen Kenneth T, et al. "Dietary Epidemiology of Essential Tremor: Meat Consumption and Meat Cooking Practices." *Neuroepidemiology*, 2008; 30(3):161-166.
8. Li X, Sui K. "Clinical Observation on Acupuncture Combined with Medication for Treatment of Essential Tremor." *Zhongguo Zheng Jiu*, 2010; 2nd ser. 107-109.
9. De la Torre CS. "Benign Essential Tremor Resolved with Acupuncture." *Medical Acupuncture: A Journal For Physicians By Physicians*, Fall/Winter 1989; (1), 1st ser.
10. Chen S, Wang S, Rong P, et al. "Acupuncture for Refractory Epilepsy: Role of Thalamus." *Evidence-Based Complementary and Alternative Medicine*, 2014.
11. Cho C, Samkoff LM. "A Lesion of the Anterior Thalamus Producing Dystonic Tremor of the Hand." *Arch Neurol Archives of Neurology*, 2000; 57(9).

JANUARY 2017