



Treatment of Tic Disorder by Suppressing Hyperactive Liver, Strengthening the Spleen, and Eliminating Phlegm: A Case Report

Zhihong Ren¹, Yu Yan², Meilin Huang^{2*}

¹Traditional Chinese Medicine Department, Chengdu Southwest Rehabilitation Hospital, Chengdu 610000, Sichuan, China

²President's Office, Chengdu Southwest Rehabilitation Hospital, Chengdu 610000, Sichuan, China

*Author to whom correspondence should be addressed.

Copyright: © 2026 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: *Medical History Summary:* The patient, a male named Shi, aged 18, presented with “recurrent throat clearing for over 10 years, aggravated with arm twitching and blinking for the past 2 years.” He had previously taken oral medications such as aripiprazole and tiapride, but the effects were unsatisfactory, and symptoms recurred after discontinuation. Seeking traditional Chinese medicine treatment, he visited our clinic on August 15, 2025. Current symptoms included recurrent throat clearing, blinking, tilting of the neck, occasional “oh-oh” sounds in the throat, occasional involuntary trembling of both upper limbs, which was more pronounced during emotional excitement. He was generally melancholic, had poor concentration, and his academic performance was below average. He had a poor appetite, restless sleep, was easily awakened, had normal bowel and bladder movements, and occasional constipation. Physical examination revealed normal vital signs and general condition. He was slightly overweight, with a pale complexion and dark circles around the eyes. No abnormalities were found in the heart, lungs, or abdomen. His tongue was slightly red, enlarged, with longitudinal cracks in the middle, and thick and greasy coating in the middle and posterior sections. His pulse was wiry and slippery. *Traditional Chinese Medicine Diagnosis:* Tic disorder; spleen deficiency with liver hyperactivity and phlegm accumulation syndrome. *Western Medicine Diagnosis:* Tic disorder (Tourette's syndrome). *Intervention Measures:* The patient was prescribed modified Tianma Gouteng Decoction for oral administration, combined with emotional regulation and foot bath therapy. *Outcome:* The patient's tic symptoms improved significantly, with the Yale Global Tic Severity Scale (YGTSS) score decreasing from 48 to 12.

Keywords: Tic disorder; Tianma Gouteng Decoction; calming the liver and strengthening the spleen; case report

Online publication: May 25, 2026

1. Introduction

Tic disorder is a common neurodevelopmental disorder that typically manifests during childhood and adolescence. Its core pathological mechanisms are associated with imbalances in central neurotransmitters (such as abnormalities in dopamine and norepinephrine metabolism) and alterations in synaptic plasticity^[1]. Additionally, it is influenced

by multiple factors, including genetic predisposition, psychological stress, and environmental stimuli (no references cited). In traditional Chinese medicine (TCM), this condition falls under the categories of “chronic convulsions,” “choreoathetosis,” and “liver wind.” The primary pathological site is the liver, with close associations to the spleen and heart. Western medical treatment primarily relies on anti-tic medications for symptomatic relief, which can control symptoms in the short term but often lead to recurrence upon discontinuation and are poorly tolerated by some children. In contrast, TCM adopts a holistic approach based on zang-fu organ differentiation, addressing both the root cause and symptoms. It offers unique advantages in improving symptoms, reducing recurrence, and regulating emotions and constitution. Clinical observations have demonstrated that treating tic disorder from the perspective of liver and spleen dysfunction, using a method that calms the liver, strengthens the spleen, resolves phlegm, and subdues wind, yields definitive therapeutic effects. Here, we report a case of a patient with a 10-year disease course who experienced significant symptom improvement following treatment with traditional Chinese herbal medicine.

2. Clinical Information

2.1. Basic Information

The patient, an 18-year-old male, presented to our clinic on August 15, 2025, with a chief complaint of “recurrent throat clearing for over 10 years, aggravated with arm twitching and blinking for the past 2 years.”

2.2. Present Medical History

The child developed recurrent vocal tics without a clear precipitating factor 10 years ago, without accompanying symptoms such as fever or cough. In 2019, he sought medical attention at another hospital, where electroencephalogram (EEG) and cranial CT scans revealed no significant abnormalities. He scored 48 on the Yale Global Tic Severity Scale (YGTSS) and was diagnosed with “tic disorder.” He was subsequently prescribed oral aripiprazole (10 mg once daily) and tiapride (10 mg once daily), which he took intermittently and irregularly for 3-4 years. Although his symptoms temporarily improved, they repeatedly recurred, worsening with fatigue, emotional fluctuations, and infections. Seeking systematic traditional Chinese medicine (TCM) treatment, he was referred to our clinic.

2.3. Current Symptoms

The child exhibits frequent throat-clearing actions, with over 20 episodes per day, accompanied by involuntary arm twitching, primarily involving upper limb flexion and extension, as well as trembling. Persistent blinking and eyebrow squeezing are also present, with symptoms exacerbated after physical activity. He experiences restless sleep, difficulty falling asleep, light sleep with easy awakening, and frequent nightmares. His temperament is irritable and prone to anger, with emotional lability and agitation upon minor stimulation. His appetite is fair, with a preference for spicy and cold foods, and normal food intake. Bowel movements are regular, with occasional constipation. He has a robust physique, a sallow complexion with a lack of luster, and an overall fair mental state. His tongue is slightly red, enlarged, with longitudinal cracks in the middle, and a thick, greasy coating in the middle and posterior sections. His pulse is wiry and slippery.

2.4. Auxiliary Examinations

In 2019, EEG and cranial CT scans at another hospital revealed no significant abnormalities. At the initial

consultation, his YGTSS score was 48, indicating severe disease.

2.5. Diagnosis

Western Medicine Diagnosis: Tic Disorder (Tourette Syndrome) Diagnostic Basis: The patient is an 18-year-old with a disease duration exceeding one year. He exhibits multiple motor and vocal tics, including eye blinking, neck twisting, and limb twitching, which worsen with emotional distress. There is no significant past medical history, and laboratory tests are unremarkable, with a YGTSS score of 48. Therefore, the diagnosis of tic disorder is made^[2].

Traditional Chinese Medicine Diagnosis and Syndrome Type: Slow Convulsion (Spleen Deficiency with Liver Hyperactivity and Phlegm Syndrome)

Syndrome Differentiation Analysis: The child's recurrent eye blinking, neck twisting, occasional vulgar language, and involuntary bilateral upper limb trembling fall within the scope of TCM's tic disorder. His prolonged disease course without timely treatment has impaired the spleen, which is the foundation of postnatal qi and blood. Prolonged illness easily damages the spleen, leading to impaired water metabolism and internal accumulation of phlegm-dampness. Additionally, his irritable and impatient nature, along with a tendency towards depression, can cause liver qi stagnation, which in turn invades the spleen, resulting in spleen deficiency and liver hyperactivity. This triggers liver wind, which combines with phlegm to manifest as various tic symptoms. His pale-red tongue with a thin, thick, greasy coating and wiry, slippery pulse are indicative of spleen deficiency with liver hyperactivity and phlegm. In summary, the TCM diagnosis is tic disorder with a syndrome of spleen deficiency, liver hyperactivity, and phlegm. The disease primarily involves the liver and spleen, with wind and phlegm as the main pathological factors, and a mixed nature of deficiency and excess^[3].

2.6. Treatment Principles

Soothe the liver, strengthen the spleen, resolve phlegm, and subdue wind.

2.7. Prescription and Medication

Initial Prescription (August 15, 2025): Modified Tianma Gouteng Decoction: Tianma (*Gastrodia elata*) 10 g, Gouteng (*Uncaria rhynchophylla*) 12 g (added later), Shijueming (*Haliotidis Concha*) 20 g (decocted first), Chaozhizi (*Gardeniae Fructus*) 8 g, Huangqin (*Scutellariae Radix*) 10 g, Fabanxia (*Pinelliae Rhizoma Preparatum*) 8 g, Chenpi (*Citri Reticulatae Pericarpium*) 6 g, Fuling (*Poria*) 15 g, Chaobaizhu (*Atractylodis Macrocephalae Rhizoma Preparatum*) 12 g, Dangshen (*Codonopsis Radix*) 12 g, Yuanzhi (*Polygalae Radix*) 8 g, Suanzaoren (*Ziziphi Spinosae Semen*) 15 g (fried), Duangulu (*Ostrea Concha*) 20 g (decocted first), Duanguli (*Concha Ostreae*) 20 g (decocted first), Chantui (*Cicadae Periostracum*) 6 g, Zhigancao (*Glycyrrhizae Radix Preparata*) 6 g. Administration: One dose per day, decocted in water and taken warmly in two divided doses (200 ml each), morning and evening, for 14 consecutive doses. The decocted herbal residue is reused to prepare a foot bath for 20 minutes to calm the mind, aid sleep, and stabilize emotions.

Second Prescription (After 14 doses): The frequency of throat clearing significantly decreased to 2-3 episodes per day. Neck twitching, arm twitching, and eye blinking symptoms markedly improved, with the frequency reduced from over 20 episodes per day to 5-6 episodes each time, an 80% decrease. Sleep improved, with a shorter time to fall asleep, alleviated light sleep and easy awakening, and increased nighttime sleep duration to over 7 hours. His temperament became more placid, with a significant reduction in emotional irritability. His complexion improved with a more lustrous appearance, and his mental state was better. His tongue turned pale red, with reduced tongue enlargement, thinned greasy coating, and wiry, slippery pulse. His YGTSS score decreased to 12. The prescription

was adjusted by removing Huangqin and Chaozhizi and adding Chaoshanyao (*Dioscoreae Rhizoma*) 15 g and Lianzi (*Nelumbinis Semen*) 10 g to strengthen the spleen and consolidate essence. He continued to take 30 doses, with the same administration method as before.

Follow-up: Two months later, the child's throat-clearing and tic symptoms had basically disappeared. His emotions were stable, and his sleep duration increased to 8 hours, with difficulty waking up. He actively participated in school and family activities. However, this condition can often be triggered or worsened by emotional stimuli or colds. Therefore, the child was advised to have regular follow-up visits, strengthen mental care, and improve his physical constitution.

3. Emotional Adjustment and Nursing

3.1. Relieving Liver Depression and Reducing Stress

Instruct parents to avoid excessive criticism and scolding of their children, manage academic pressure, limit exposure to electronic devices, engage in more parent-child communication and outdoor interactions, align with the liver's dispersing function, and prevent liver qi stagnation from transforming into fire^[4].

3.2. Strengthening the Spleen and Regulating Emotions to Improve Constitution

Advise patients to maintain a balanced diet, avoid cold, greasy, and sweet foods to reduce the burden on the spleen and stomach; encourage the cultivation of hobbies to alleviate anxiety and interrupt the pathological cycle of "liver wood overacting on spleen earth."

3.3. Calming the Mind and Stabilizing Emotions to Improve Sleep

Maintain a regular sleep schedule, avoid strenuous exercise and emotional stimulation before bedtime, and aid sleep through listening to soft music or soaking feet in warm water to calm the mind and restore mental function.

4. Discussion

The core pathogenesis of the pediatric patient in this case is liver wind with phlegm and spleen deficiency leading to impaired transportation, presenting a mixed deficiency and excess syndrome. Among them, internal liver wind movement is the core of tic symptoms: the liver governs tendons and wind, and wind is characterized by movement. Aberrant liver wind movement manifests as involuntary movements such as limb tics, blinking, and throat clearing, which are the key manifestations of excess in this disease. Spleen deficiency leading to impaired transportation and internal phlegm-dampness production is the root cause of the disease: impaired spleen transportation leads to the accumulation of dampness, transforming into phlegm, which obstructs the airways, causing throat discomfort and frequent throat clearing; moreover, spleen deficiency results in insufficient production of qi and blood, leading to malnourishment of tendons and veins, facilitating the mutual combination of wind and phlegm, and prolonging the illness. Emotional distress not only disturbs the heart and liver, fueling fire and generating wind but also affects spleen transportation, exacerbating phlegm-dampness. It serves as both a triggering factor for the disease and an important hub for its recurrence. This formula uses *Gastrodia elata*, *Uncaria rhynchophylla*, and *Haliotis diversicolor* to achieve the effects of calming the liver and suppressing yang, extinguishing wind and stopping spasms, directly counteracting liver wind, and serving as the primary drugs for improving limb tics, eye blinking, and throat clearing. *Cicada slough* enhances the function of extinguishing wind and stopping spasms, strengthening the treatment of

symptoms. *Codonopsis pilosula*, *Atractylodes macrocephala* (stir-fried), and *Poria cocos* strengthen the spleen and replenish qi, restoring spleen transportation and cutting off the source of phlegm-dampness production. *Pinellia ternata* (processed), Tangerine peel, and *Poria cocos* dry dampness and resolve phlegm, regulate qi and harmonize the middle, resolving phlegm-dampness in the throat, alleviating throat clearing symptoms, and ensuring smooth qi movement, addressing the root cause of spleen deficiency. *Polygala tenuifolia* and *Ziziphi spinosae* semen nourish the heart and calm the spirit, while calcined Dragon's bone and Oyster shell heavily sedate the spirit, suppress yang and extinguish wind. *Gardenia jasminoides* (stir-fried) and *Scutellaria baicalensis* clear heat from the heart and liver, addressing sleep disturbances and emotional distress. The entire formula does not limit itself to simply stopping tics but precisely grasps the complex pathogenesis involving liver wind, phlegm, fire, spleen deficiency, and emotional imbalance, establishing the treatment principles of calming the liver and strengthening the spleen, extinguishing wind and resolving phlegm, achieving multi-target intervention. It also integrates emotional adjustment throughout the process, clarifying the relationship between emotions and visceral pathogenesis, addressing both symptom improvement and emotional regulation to enhance compliance and long-term efficacy, reducing disease recurrence.

This study is a single-case analysis with a limited sample size, lacking control studies and large-sample data support, thus limiting the universality and generalizability of the conclusions. Additionally, it lacks objective quantitative indicators and long-term follow-up data, making the assessment of treatment stability and recurrence rate insufficiently systematic and difficult to form a standardized diagnostic and treatment pathway. Furthermore, it focuses solely on traditional Chinese medicine formulas and emotional adjustment, without elaborating on the collaborative plan with Western standardized treatments, and does not delve deeply into the specific mechanisms of integrated traditional Chinese and Western medicine interventions^[5].

Informed Consent: The patient has signed an informed consent form, agreeing to the anonymous use of their clinical data for academic publication.

Funding

This work was supported by the Annual Scientific Research Planning Project of the Sichuan Psychological Society (SCSXLXH2023038); the Project of the Sichuan Applied Psychology Research Center (CSXL-24219); the Project of the Chengdu Municipal Health Commission (2025541); and the Joint Innovation Fund of the Chengdu Municipal Health Commission and Chengdu Medical College (WXLHCXJJ25-13).

Disclosure statement

The author declares no conflict of interest.

References

- [1] Neurology Group, Pediatric Branch, Chinese Medical Association, 2023, Guidelines for the Diagnosis and Treatment of Tic Disorders in Children (2023 Edition). *Chinese Journal of Pediatrics*, 61(5): 361-368.
- [2] Zhang BL, Wang YY, 2021, Internal Medicine of Traditional Chinese Medicine. China Press of Traditional Chinese Medicine: 456-459.
- [3] Wang Q, 2020, Constitutionology of Traditional Chinese Medicine. People's Medical Publishing House: 189-192.
- [4] Chinese Association of Chinese Medicine, 2022, Pediatrics of Traditional Chinese Medicine. China Press of Traditional

Chinese Medicine: 320-323.

- [5] Li H, Zhang M, 2022, Clinical Study on the Treatment of Tic Disorders in Children with the Method of Calming the Liver, Strengthening the Spleen, and Resolving Phlegm. *Chinese Journal of Information on Traditional Chinese Medicine*, 29(8): 78-81.

Publisher's note

ART AND TECHNOLOGY PRESS INC. remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.