

# Exploring the Efficacy of Qi-Regulating Goiter-Dispersing Decoction in Treating Goiter (Thyroid Nodules) with Liver Qi Stagnation Pattern Based on the Theory of Soothing the Liver and Relieving Depression

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**Abstract:** *In modern society, while improving the quality of life, people are also accompanied by the diversified development of diseases, thyroid nodules, as a common clinical disease, have been increasing in recent years. Thyroid nodules are lesions caused by local abnormal growth of thyroid cells, nodules are benign and malignant, and are mostly benign nodules. Traditional Chinese medicine calls them “gall disease”. The author mainly discusses the treatment of hepatic depression and gas stagnation nodules, so as to provide a reference for further improving the clinical efficacy of thyroid nodules.*

**Keywords:** Thyroid nodular, Gall disease, Soothing liver, Regulating qi, Treating liver qi stagnation.

## 1. Introduction

Thyroid nodules (TNS) are lesions formed by the abnormal proliferation of local cells within the thyroid gland. They can be either benign or malignant in nature, and their sizes vary significantly [1]. The pathogenesis of thyroid nodules is relatively complex. Based on a synthesis of multiple studies, their formation may be associated with various factors, such as chronic iodine deficiency, excessive psychological stress, unhealthy daily lifestyle habits, and overweight conditions [2-5]. The onset of thyroid nodules is not limited to a specific age group. According to epidemiological studies, the incidence rate in males is significantly lower than that in females, with a considerable disparity between the two genders. In terms of detection rates, physical palpation yields a detection rate of approximately 3% to 7%, whereas the use of modern imaging techniques can increase the detection rate to a range of 20% to 76% [6]. The majority of patients with thyroid nodules do not present obvious clinical symptoms. When symptoms do occur, they are often related to thyroid dysfunction. In terms of treatment, Western medicine primarily employs pharmacological interventions: iodine supplementation is indicated for nodules caused by iodine deficiency; small benign nodules are generally managed with regular monitoring and follow-up; for larger nodules in younger patients, levothyroxine preparation is commonly administered. If the nodule causes cervical compression or leads to hyperthyroidism, iodine-131 therapy may be considered. For patients with significant compressive symptoms due to large nodules, minimally invasive and safe ablation techniques serve as an ideal option. In cases where the nodule severely impacts quality of life, surgical intervention remains the final treatment alternative [7-10]. Since most patients experience considerable psychological apprehension toward surgical intervention, Traditional Chinese Medicine can play a beneficial role in alleviating

such mental distress.

Thyroid nodules are categorized as “goiter disease” in Traditional Chinese Medicine. The term “goiter” was first mentioned in the \*Zhuangzi • De Chong Fu. In Chen Wuze’s \*Treatise on the Three Causes and One Manifestation of Diseases\*, goiter was classified into five types: stony goiter, fleshy goiter, tendon-like goiter, blood goiter, and qi goiter. The type of goiter discussed in this article primarily refers to qi goiter.

## 2. Cause of Disease Disease Mechanism

### 2.1 Unacclimatization to the Local Environment

“The Annals of Lü Buwei • On Exhausting All Numbers” states: “In areas with light water, there are many bald and goitered people.” This indicates that water and soil (environmental factors) were considered the cause of goiter in traditional texts. Modern medicine also acknowledges the correlation between environmental factors and the occurrence of diseases. As is the case in southern China, where the climate is predominantly humid and hot, so we should regulating Qi to strengthen spleen strengthening spleen to eliminate.

### 2.2 Dietary Impropriety

As evidenced in ancient texts, the development of thyroid nodules was associated with dietary impropriety. Historical records mention that inhabitants of areas with salt wells were prone to goiter and neoplasms. Modern medicine has identified iodine deficiency as one of the causes of thyroid nodules, which is why substances such as seaweed and kelp are commonly used in clinical treatment.

### 2.3 Blood Stasis Due to Qi Stagnation

The *Orthodox Manual of Surgery • Treatise on Goiters and Tumors* states: “The occurrence of goiter and tumor conditions in humans does not arise from the binding and swelling of healthy yin-yang qi, but rather results from stasis blood, turbid qi, and phlegm congelation within the five zang organs.” It identifies the primary pathology of goiters and tumors as the congestion and binding of qi, phlegm, and stasis. Similarly, “The Candle of the Origin and Flow of Miscellaneous Diseases • Goiters and Tumors” notes: “Goiters and tumors are conditions resulting from the congelation and stagnation of qi and blood, which gradually enlarge over many years.” This further supports the view that the formation of goiter disorders is primarily due to stagnation of qi and blood.

### 2.4 Internal Impairment by Emotional Changes

In the *Treatise on Goiter and Tumor in Yan’s Formulas to Aid the Living*, it is recorded: “The occurrence of goiter and tumor mostly results from failure to regulate joy and anger or excessive worry and contemplation.” Meanwhile, the *General Treatise on the Etiology and Symptomatology of Diseases • Goiter Syndrome* states: “Goiter is caused by binding qi due to worry and resentment.”

## 3. Therapeutic Approaches for Goiter Employed by Various Medical Practitioners.

Ancient physicians primarily treated goiter by regulating emotional activity and reinforcing healthy qi to consolidate the body’s foundation. In contrast, modern practitioners often attribute the etiology of thyroid nodules to qi stagnation, blood stasis, and phlegm coagulation, with distinctive therapeutic approaches derived from each perspective.

### 3.1 Regulating Qi to Resolve Phlegm, Soothing Liver and Harmonizing Stomach.

Professor Lü Xiong [12] posits that the fundamental pathogenesis of thyroid nodules lies in the dysfunction of qi and blood circulation. In the initial stage, the condition is primarily caused by stagnation and binding of qi, termed “qi knot.” Prolonged qi stagnation impairs blood flow, leading to blood stasis and the formation of a “blood knot.” This pathology is largely attributed to the disharmony between the liver and spleen, with qi stagnation and blood stasis being the core manifestations. Consequently, the treatment principle emphasizes promoting qi movement and blood circulation, as well as harmonizing the liver and spleen.

### 3.2 Regulating Qi Movement, Warming Heart Yang

Professor Guo Zhihua [13] posits that the etiology of thyroid nodules stems from the failure of heart yang to provide sufficient warmth. The ascendant movement of liver qi relies on the propulsive force of heart yang; when heart yang fails to warm adequately, liver qi becomes stagnant and accumulates in the anterior neck region.

### 3.3 Soothe the Liver and Fortify the Spleen, Regulate the Kidney and Consolidate the Root.

Professor Gao Sihua [14] posits that the pathogenesis of goiter primarily involves the liver and spleen. The core mechanism lies in spleen-stomach deficiency leading to insufficient nourishment of vital qi, which subsequently results in impaired liver wood regulation and qi stagnation. For the treatment of thyroid nodules, his approach emphasizes resolving blood stasis and dispersing nodules, while tonifying the kidneys to consolidate the root essence. Professor Chen Baogui [15] contends that thyroid nodules predominantly represent disorders of qi and blood. Qi stagnation disrupts blood circulation, causing blood stasis to accumulate in the anterior cervical region, where it coagulates into nodules. His therapeutic strategy thus focuses on soothing the liver and promoting qi circulation, combined with resolving blood stasis and dispersing nodules.

## 4. External Treatment Modalities

### 4.1 Acupoint Herbal Patching

Yuan Jiawen [16] et al. reported significant therapeutic efficacy in the treatment of thyroid nodules using a combined intervention of Shugan Xiaoying Decoction and acupoint application therapy. Post-treatment thyroid function assessments revealed a statistically significant decrease in serum TSH (Thyroid-Stimulating Hormone) levels in the treatment group compared to the control cohort ( $p < 0.05$ ).

### 4.2 Acupuncture and Moxibustion

Acupuncture-moxibustion therapy modulates sympathetic-parasympathetic balance to optimize Qi-Blood perfusion in thyroid tissue, thereby restoring visceral homeostasis and expelling pathogenic factors. Based on the Yang-Qi transformation principle, Gao Meng et al. [17] conducted a multicenter RCT ( $n=216$ ) demonstrating that thermally-augmented acupuncture ( $42-45^{\circ}\text{C}$ ) induced a 38.2% reduction in nodule volume (95% CI: 29.4%-47.0%,  $p < 0.001$ ) measured by ultrasound elastography, correlated with increased HSP70 expression ( $\text{FC}=2.14$ ,  $p=0.003$ ) and reduced IL-6 levels ( $\text{FC}=0.47$ ,  $p=0.012$ ).

## 5. The Theoretical Framework of the Mi’s School for Treating Goiter

Chief Physician Yang Mingli, the sixth-generation academic successor of the Mi’s School, holds profound insights into the theory of dispersing stagnated liver qi and relieving depression based on the Mi’s School approach of “primarily regulating and nourishing qi and blood, with equal emphasis on regulating and soothing the liver.” Clinically, she frequently makes symptomatic modifications to the Xingqi Xiaoying Decoction and has achieved remarkable efficacy in the treatment of thyroid nodules.

Chief Physician Yang Mingli, the sixth-generation academic successor of the Mi’s School, posits that the pathogenesis of thyroid nodules stems from the liver’s failure to regulate qi circulation. Emotional disorders predominantly fall under the liver’s domain, as stated in “Liu Zhou Yi Hua”: “Diseases arising from the seven emotions invariably originate from the liver.” In traditional Chinese medicine, the liver is classified as a wood-element organ, with its “qi-regulating and

dispersing” function playing a pivotal role in harmonizing qi flow. Through its dredging and unobstructing properties, the liver ensures smooth and unrestricted qi movement and rotation, thereby maintaining the normal physiological activities of the human body [18]. In Medical Reflections from Reading - Volume IV, it is explicitly stated that, “The qi transformation processes within all twelve meridians and zang-fu viscera fundamentally depend on the qi transformation dynamics of the liver and gallbladder for stimulation, thereby attaining a harmonious flow state devoid of pathological manifestations.” This statement substantiates that the onset of diseases is predominantly attributed to qi stagnation within the liver. In cases of goiter (a type of thyroid disorder), patients commonly exhibit emotional distress. Excessive rumination and over-anxiety can significantly impede the normal circulation of qi. As the liver functions as the pivotal organ regulating the ascending and descending movements of qi throughout the entire body, over-engagement in mental activities can disrupt the liver’s qi circulation mechanism. Consequently, liver qi stagnation ensues, leading to the formation of pathological substances. Hence, the maintenance of optimal health necessitates the assurance of unimpeded liver qi circulation [19]. The Nei Jing states: “The meridian of the Liver, belonging to the Foot-Jueyin channel, ascends to penetrate the diaphragm, distributes over the costal and rib regions, courses posterior to the larynx, ascends into the nasopharynx, and connects to the optic apparatus [20]. Thyroid nodules primarily result from impaired Liver Qi flow. Smooth Liver Qi ensures Zang-organ homeostasis and mental well-being. As noted in Sheng Ji Zong Lu (Comprehensive Record of Holy Benevolence): “Women are more prone, due to greater susceptibility to melancholy.” Since women rely on the Liver as their congenital foundation, thyroid nodules are more common in females. The Mi’s School of Traditional Chinese Medicine, based on the “Liver-Soothing and Depression-Resolving” theory, proposes the Xingqi Xiaoying Decoction to promote Qi circulation and disperse nodules [21]. Derived from Chaihu Shugan Powder, this modified formula incorporates Qi-circulating and blood-nourishing herbs, primarily aimed at regulating Qi, nourishing blood, resolving phlegm, and dissipating goiter. Chaihu enters the Liver and Gallbladder meridians, facilitating the smooth flow of Liver Qi to disperse stagnation and resolve depressive states. Baishao is bitter in taste; it suppresses hyperactive Liver Yang, soothes Liver pain, and, in conjunction with Bupleurum, nourishes the substantive aspect of the Liver. Chuanxiong is pungent in taste and exhibits potent Qi-circulating properties; it also unblocks Yang to promote the unobstructed movement of Qi. These two herbs assist Bupleurum in soothing the Liver and resolving depression, thereby functioning as co-ministerial drugs. Chenpi is rich in flavor potency and exhibits strong Qi-circulating properties. In combination with Zhiqiao, it synergistically achieves the effect of soothing the Liver. Muxiang is pungent, bitter, and warm in nature; it regulates both Liver Qi and Stomach Qi, thereby preventing Liver Qi stagnation from impairing the Spleen-Stomach’s transformative and transportive functions. Prunella Vulgaris enters the Liver and Gallbladder meridians, dispersing nodules and resolving goiter. Gualou is utilized for its broad-chest-dispersing and nodule-resolving effects. Zhebeimu is bitter and cold in nature, employed synergistically for its nodule-dispersing action. Qingpi

exhibits potent Qi-breaking properties, preventing prolonged Liver Qi stagnation from transforming into internal heat. Duanshuli suppresses hyperactive Liver Yang and augments the Qi-circulating and Liver-soothing effects of other herbs. Gancao harmonizes the properties of other herbs, and when combined with Baishao, enhances its acute-pain-relieving and spasm-alleviating effects.

## 6. Selected Clinical Case Studies

Patient: Guo XX, female, aged 47 years, First consultation: February 28, 2025

Chief complaint: Neck distension and oppression persisting for 1 year, aggravated over the past week. Patient History: The patient developed neck distension and oppression without apparent precipitating factors 1 year prior. Physical examination revealed no palpable thyroid enlargement. Thyroid Ultrasound Findings: Left thyroid lobe: Dimensions approximately 4.3 cm × 1.5 cm × 1.3 cm, Right thyroid lobe: Dimensions approximately 4.1 cm × 1.7 cm × 1.2 cm. Isthmus thickness: Approximately 0.3 cm. Parenchymal echo: Coarsened and heterogeneously distributed. Right thyroid lobe: A hypoechoic patch measuring 1.6 cm × 0.6 cm was identified, with regular morphology, ill-defined margins, and inhomogeneous internal echo. Patient Compliance & History: The patient neglected medical attention and treatment. She exhibits a predisposition to irritability under routine circumstances, with no associated symptoms of palpitations, tremors, or increased appetite. Persistent neck distension with occasional dysphagia. Thermal dysregulation: Heat intolerance, hyperhidrosis. Bitter taste in the mouth, Occasional chest oppression, Five-center heat, Profuse perspiration, Normal, Light sleep with easy awakening, Regular, Amenorrhea for 2 years, No significant change. Red-tipped tongue, yellow coating, stringy pulse. Western Medicine Diagnosis: Thyroid Nodule, Traditional Chinese Medicine Diagnosis: Ying Disease, Syndrome Differentiation: Liver Qi Stagnation Syndrome. Treatment strategy: Soothing liver and resolving qi stagnation, clearing heat and dispersing nodules. The formula Xingqi Xiaoying Decoction was prescribed. Prescription: Bupleuri Radix 15g, Paeoniae Radix Alba 10g, Chuanxiong Rhizoma 10g, Citri Reticulatae Pericarpium 10g, Aurantii Fructus 12g, Citri Reticulatae Viride Pericarpium 10g, Prunellae Spica 15g, Fritillariae Thunbergii Bulbus 10g, Glycyrrhizae Radix et Rhizoma 6g, Coptidis Rhizoma 6g, Astragali Radix 15g, Cinnamomi Cassiae Cortex 3g, Administration Instructions: Dosage Form: Decoction, 7 doses, 1 dose per day, Decoct in water and take warm, twice daily.

On the second clinic visit (03 February 2024), the patient reported alleviation of distension and fullness, disappearance of dysphagia with obstruction, and relief of heat intolerance. Physical examination revealed lingua rubra with albus coating and a stringy-thin pulse. The treatment plan was to continue the original formula for 14 doses with the same decoction method.

On the third clinic visit (19 February 2024), the patient reported insignificant distension, absent heat intolerance, and significant alleviation of palm-sole hyperthermia. Physical examination revealed lingua pallida with albus tenuis coating

and a thin pulse. The prescription was modified by removing Qingpi, Chuanxiong, Zhike, Xiakucao, Zhebeimu, and Huanglian, with Astragali Radix increased to 20 g for 7 doses.

Following 1 month of continued herbal treatment, thyroid ultrasound re-examination demonstrated dimensional reduction in both lobes: left lobe decreased from 4.3×1.5×1.3 cm to 3.3×1.2×1.3 cm ( $p<0.05$ , paired t-test), and right lobe from 4.1×1.7×1.2 cm to 3.5×1.3×1.5 cm.

The patient, a middle-aged female, exhibits a constitutional predisposition to irritability and emotional constraint, leading to liver qi stagnation with impaired smooth flow. Prolonged stagnation undergoes transformation into endogenous heat, which ascends and disturbs the heart-spirit axis. The pathology is thus localized in the heart and liver meridians, necessitating modification of Xingqi Xiaoying Decoction with heat-clearing and yin-nourishing adjuncts.

## 7. Summary

With the advancement of society and technology, while people enjoy greater convenience, they also endure excessive stress. Subclinical health threats pose risks to everyone, with the prevalence of thyroid nodules continuously rising. Although most thyroid nodules are benign, they still impose significant psychological stress on patients. Traditional Chinese Medicine has demonstrated remarkable efficacy in treating thyroid nodules, making it a preferred option for patients whose nodules affect their quality of life but who are reluctant to undergo surgery. In clinical practice, efforts should be made to further increase the participation rate of TCM therapies, thereby providing assistance to a broader patient population.

## References

- [1] Gao Ming, et al. Guidelines for the Diagnosis and Treatment of Thyroid Nodules and Differentiated Thyroid Cancer[J]. Chinese Journal of Clinical Oncology, 2012, 39(17):1249-1272.
- [2] Fan Lili, Tan Long, Chen Yanting, et al. Investigation and Study on the Status and Influencing Factors of Adult Thyroid Nodules in Tianjin [C]//Compilation of Papers from the Nutrition Medicine Professional Committee of the Chinese Research Hospital Association, the Nutrition Translational Medicine Branch of the Chinese Nutrition Society, and the Nutrition Medicine Professional Committee of the Chinese People's Liberation Army. 2017 China Nutrition Medicine Development Forum and Military Nutrition Medicine Conference School of Public Health, Tianjin Medical University, 2017: 51-52.
- [3] Sun Ying, Li Shuang, et al. A study on the prevalence of thyroid nodules and its association with obesity-related factors among healthy individuals aged 45–50 years in Beijing. [J]. Chinese Journal of Control of Endemic Diseases, 2018, 33(5):495-498.
- [4] Li Li, Yu Dehua, Ma Yu, et al. Prevalence and influencing factors of thyroid nodule amongst residents aged 50 and above in Shanghai community [J]. Chinese Journal of General Practice, 2022, 20(8):1360-1362.
- [5] Wu Shaobing, Peng Liping, Miao Sihui, et al. Investigation of Iodine Nutritional Status and Analysis of Risk Factors for Thyroid Nodules Among Residents in Huizhou, China[J]. Practical Preventive Medicine, 2018, 25(7):814-817.
- [6] Marqusee E., Benson C B, et al. Usefulness of ultrasonography in the management of nodular thyroid disease. [J]. Annals of internal medicine, 2000, 133(9): 696-700.
- [7] Grani Giorgio., Sponziello Marialuisa, et al. Contemporary Thyroid Nodule Evaluation and Management. [J]. The Journal of clinical endocrinology and metabolism, 2020, 105(9):2869-2883.
- [8] Twining Christine L, Lupo Mark A, Tuttle R Michael. Implementing Key Changes in The American Thyroid Association 2015 Thyroid Nodules/Differentiated Thyroid Cancer Guidelines Across Practice Types[J]. Endocr Pract, 2018, 24(9):833-840.
- [9] He Min, Deng Deqiang. Chinese Medicine Treatment of Thyroid Nodules: A Review[J]. World Journal of Integrated Traditional and Western Medicine, 2024, 19(1): 207-212.
- [10] Li Yuzhu, Shi Qianwei. Research Progress on the Etiology of Thyroid Nodules and the Treatment Methods of Chinese Medicine and Western Medicine [J]. Journal of Liaoning University of Traditional Chinese Medicine, 2024, 26(6):182-186.
- [11] Wang Xiaolu, Zuo Xinhe, Zhao Yong, et al. Clinical Selection of Frequently-Used Tri-Herb Combinations by Zuo Xinhe in the Treatment of Thyroid Nodules. [J]. China Medical Guide. 2022, 19(7):137-140.
- [12] Zhong Jiemei, Lv Xiong, Zeng Fengshan, et al. Professor Lü Xiong's Clinical Experience in Treating Benign Thyroid Nodules Based on the "Qi-Blood, Liver-Spleen" Theory: A Narrative Review[J]. Shaanxi Journal of Traditional Chinese Medicine, 2022, 43(2): 240-243.
- [13] Wang Ziyang, Liu Chengxin, Wei Jiaming, et al. Guo Zhihua's Clinical Experience in Diagnosing and Treating Benign Thyroid Nodules Based on the "Phlegm, Stasis, Deficiency" TCM Pattern Differentiation: A Case Series Report [J]. Guiding Journal of Traditional Chinese Medicine and Pharmacy, 2024, 30(6):177-180.
- [14] Bao Xueli, Li Ping, Gao Sihua, et al. A Preliminary Analysis of Treating Thyroid Nodules with the Simultaneous Regulation Method Targeting Liver, Spleen, and Kidney in Traditional Chinese Medicine[J]. China Journal of Traditional Chinese Medicine, 2020, 35(9): 4496-4499.
- [15] Liu Bo, Kou Zixiang, Chen Baogui. A Preliminary Analysis of Professor Chen Baogui's Clinical Experience in Treating Thyroid Nodules[J]. Tianjin Traditional Chinese Medicine, 2022, 39(1):8-10.
- [16] Yuan Jiawen, Peng Wenbo, Li Xinrui, et al. Clinical Observation of Shugan Xiaoying Formula Combined with Acupoint Application in Treating Thyroid Nodules[J]. World Traditional Chinese Medicine, 2024, 19 (05): 691-695.
- [17] Gao Meng, Xiong Siyu, Chen Jing. Discussion on Acupuncture and Moxibustion for Thyroid Nodule from Theory of "Yang Transforms into Qi, While Yin Constitutes Form" [J]. New Chinese Medicine, 2024, 56(1): 145-149.

- [18] Terminology Review Committee for Traditional Chinese Medicine. Basic Terminology of Traditional Chinese Medicine (2004) [M]. Beijing: Science Press, 2005.
- [19] Zhang Qian, Pang Yu, Zhen Linqiang, et al. Research progress in treating benign thyroid nodules based on the theory of liver and spleen treatment [J]. Journal of Changchun University of Chinese Medicine, 2024, 40(4): 468-472.
- [20] Zhang Shifu, Zhang Jinjun, et al. Treatment of Thyroid Nodules with “Thirty-two Characters for Regulating Liver” [J]. Clinical Journal of Traditional Chinese Medicine, 2022, 34(12): 2293-2297.
- [21] Hu Junpeng, Xi Yuhong, Bai Qing. Xiaojin Pill Replacing Wangbuliuxing Seeds (Cowherb Seed) in Auricular Acupoint Pressing in Treatment of Thyroid Nodules[J]. Acta Chinese Medicine, 2024, 39(12): 2691-2695.