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A Brief Analysis of Qi Haiyan's Experience in the Diagnosis and Treatment of Thyroid Nodules Based on the Theory of "Pectoral Qi as the Foundation"

Yaqin Xie[1], Haiyan Qi[2,*]

[1]Shaanxi University of Chinese Medicine, Xianyang 712046, Shaanxi, China
[2]Shaanxi Provincial Hospital of Chinese Medicine, Xi'an 710003, Shaanxi, China
**Correspondence Author*

Abstract: ***Thyroid nodules are a prevalent endocrine disease encountered in clinical practice. Traditional Chinese medicine (TCM) exhibits unique advantages in holistic conditioning, nodule shrinkage, and relief of clinical symptoms. Rooted in Professor Mi Liehan's academic proposition that "pectoral qi constitutes the foundation of the human body", Professor Qi Haiyan proposes that dysregulation of pectoral qi and dysfunction of the qi pivot serve as the core pathological mechanisms of thyroid nodules. Her therapeutic strategy centers on the holistic principle of tonifying and regulating pectoral qi to restore the free movement of the qi pivot, supplemented by resolving phlegm and dissipating blood stasis, yielding remarkable clinical efficacy. This paper aims to summarize her clinical experience for reference in clinical management.***

Keywords: Thyroid nodules, Pectoral qi as the foundation, Mi's Decoction for Reducing Goiter**.**

1. Introduction

Thyroid nodule (TN) refers to the localized abnormal proliferation of thyroid cells, which forms one or more masses with abnormal tissue structures within the thyroid gland [1]. In recent years, TN has become a common and prevalent disease in the field of endocrinology. Most patients are asymptomatic or only present mild discomfort, so the disease is often overlooked and mostly detected during routine physical examinations. The overall prevalence of TN in the general population ranges from 20% to 76% [2], among which approximately 5% are malignant nodules, and papillary thyroid carcinoma accounts for more than 90% of all malignant lesions [4]. The onset of TN is closely associated with environmental factors, genetic susceptibility, endocrine disorders, inflammatory reactions, autoimmune abnormalities and lifestyle [5]. Physicians of successive generations hold that the pathogenesis of TN is mainly related to the liver and spleen, and generally attribute the disease to qi stagnation, phlegm coagulation and blood stasis. Inheriting Professor Mi Liehan's academic thought of "pectoral qi as the foundation", Professor Qi innovatively applies this theory to the syndrome differentiation and treatment of TN. She emphasizes that dysregulation of pectoral qi and dysfunction of qi pivot constitute the core pathogenesis of thyroid nodules. Obstructed circulation of pectoral qi can trigger or aggravate qi stagnation, phlegm coagulation and blood stasis, and further facilitate nodule formation. In treatment, she strictly abides by the TCM core concepts of holism and treatment based on syndrome differentiation. From a holistic perspective, she tonifies and regulates pectoral qi to restore the balance of yin and yang and harmonize visceral functions, so as to achieve therapeutic effects on TN.

2. Integrated Theoretical Interpretation of TCM and Western Medicine

From the perspective of traditional Chinese medicine (TCM), thyroid nodules fall under the category of Ying Liu (goiter tumors). The character "Ying" was first recorded in Zhuangzi·De Chong Fu dating back to the Warring States Period. Subsequent physicians of successive generations conducted in-depth research and systematic elaboration on Ying Bing (goiter disease). Treatise on the Etiology and Symptoms of All Diseases·Manifestations of Goiter states: "Goiter arises from binding of constrained qi induced by anxiety and anger, which accumulates below the neck to form masses" [6]. This record clearly confirms that the etiology of goiter is closely linked to internal emotional injury, improper diet, and adverse geographic and water environments.

Constitutional predisposition also exerts a vital impact on the onset of TN [7]. Tang Yiqian et al. [8] proposed that individuals with inherent yang deficiency, qi deficiency, or phlegm-damp constitutions possess higher susceptibility to goiter.

Western medicine defines TN as focal hyperplastic lesions of thyroid tissue. The American Thyroid Association characterizes TN as discrete intrathyroidal lesions distinguishable from surrounding parenchyma [9]. Cervical ultrasonography serves as the primary initial screening and diagnostic modality in clinical practice.

The pathogenetic mechanisms of TN are heterogeneous. Epidemiological studies have demonstrated a U-shaped correlation between iodine nutritional status and TN prevalence [10]. Under iodine-deficient conditions, the thyroid activates compensatory regulatory pathways to accelerate thyroid cell proliferation for enhanced iodine uptake and utilization, ultimately triggering nodule formation. Wang Hanyu et al. [11] verified that iodine deficiency elevates the prevalence of both diffuse goiter and TN. Their research revealed that a urinary iodine concentration ≥300 μg/L acts as a protective factor against TN, yet fails to reduce the risk of diffuse goiter; the prevalence of goiter gradually declines with the elevation of urinary iodine levels.

Genetic variation represents another critical risk factor for TN.

Relevant studies have illustrated that specific gene variants disrupt the homeostatic regulation of cellular proliferation, leading to excessive thyroid cell hyperplasia and subsequent nodule development. Guo Manli et al. [12] demonstrated that carriers of the thyroid peroxidase (TPO) gene c.2268dupT mutation face significantly higher risk of TN. Yang Liu et al. [13] reported that the TPO c.2268insT insertion mutation impairs normal TPO enzymatic activity and induces iodine organification defects, which suppress thyroid hormone synthesis. The pituitary negative feedback mechanism then elevates thyroid-stimulating hormone (TSH) concentrations, and chronic stimulation by sustained high TSH levels increases the incidence of TN.

Autoimmunity constitutes an additional pathogenic contributor. Cumulative evidence confirms that inflammatory cascades are tightly associated with the initiation and progression of thyroid disorders [14]. For instance, in Hashimoto's thyroiditis, the immune system aberrantly targets thyroid tissue. Repeated inflammatory injury and cyclic tissue repair render the thyroid prone to nodular transformation [15]. In addition, long-term or high-dose radioactive exposure is an independent major pathogenic factor for thyroid nodules.

3. Guiding Value of the "Pectoral Qi as the Foundation" Theory in Thyroid Nodule Prevention and Treatment

The theory of pectoral qi originates from Huangdi Neijing (Huangdi's Internal Classic), which defines pectoral qi as vital thoracic qi generated by inhaled clear atmospheric qi and food essence transformed by the spleen and stomach. Pectoral qi ascends along the respiratory tract to regulate ventilation, circulates within the heart meridians to promote qi-blood perfusion, and interacts with innate primordial qi to sustain all physiological activities of the human body. Modern research analogizes energy metabolism to the functional role of pectoral qi, identifying it as an indispensable core component of bodily homeostasis [16]. In Yixue Zhongzhong Canxi Lu, Zhang Xichun equates pectoral qi with "Great Qi", asserting that insufficiency and sinking of great qi underpin a broad spectrum of diseases, and created Great Qi Uplifting Decoction to counteract qi sinking. Professor Mi Liehan proposed the core academic view that "pectoral qi is the foundation of postnatal qi". He posited pectoral qi as the primary governor of vital activities and the core framework coordinating all qi movements within the body, whose sufficiency underpins normal visceral function. He categorized pectoral qi disorders into four subtypes: pectoral qi stagnation, counterflow of pectoral qi, pectoral qi insufficiency, and sinking of pectoral qi, and established five therapeutic approaches for pectoral qi: tonifying qi, unblocking constrained qi, restraining adverse qi movement, resolving turbidity, and lifting sinking qi.

Qi Haiyan holds that persistent fatigue, chronic illness, and lung-spleen hypofunction hinder pectoral qi generation and consolidation, diminishing its warming and propelling efficacy. Stagnant qi, blood, and body fluid circulation create an internal microenvironment conducive to phlegm and blood stasis accumulation. Emotional damage disrupts liver dispersion, disturbing thoracic pectoral qi movement and inducing pectoral qi stagnation. In TN pathogenesis, visceral dysfunction and reciprocal transformation of pathological factors produce intractable, recurrent nodules.

3.1 Tonifying Pectoral Qi as the Root Therapeutic Principle

Pectoral qi is tightly correlated with systemic energy metabolism and immune competence. Metabolic substrates including carbohydrates and water derive from dietary intake, while oxygen is acquired via respiration—corresponding directly to the formative origins of pectoral qi in TCM theory. Sufficient pectoral qi facilitates oxygen utilization and food essence transformation, boosting adenosine triphosphate (ATP) synthesis to supply systemic energy demands. Conversely, pectoral qi deficiency suppresses ATP production and impairs energy metabolism, manifesting as lassitude and mental fatigue. The TCM axiom "vigorous healthy qi repels pathogenic invasion" underscores that pectoral qi deficiency represents the core pathogenesis of TN in debilitated patients, particularly post-surgical individuals and those with chronic disease-induced physical depletion. Treatment adheres to the therapeutic rule "tonify deficiency", prioritizing "qi tonification" and "ascending clear qi". Therapeutics focus on reinforcing lung and spleen qi to replenish the source of pectoral qi. Medicinals such as Astragalus, Codonopsis, and Atractylodes macrocephala invigorate visceral qi; robust qi circulation accelerates blood and body fluid distribution, spontaneously dissolving phlegm and stasis. This strategy embodies the "tonifying qi" and "ascending clear qi" components of Mi's five pectoral qi therapeutic methods.

3.2 Regulating Qi Movement as the Essential Auxiliary Strategy

Residing in the thorax and diffusing throughout the entire body, pectoral qi governs systemic qi dynamics. The ascending, descending, exiting, and entering movements of qi, blood, and body fluids constitute the functional substrate of zang-fu visceral activity. Stagnation, counterflow, or sinking of pectoral qi inevitably disrupts qi-blood balance. Therefore, qi regulation and unblocking remain indispensable regardless of whether TN presents with deficiency or excess patterns. Medicinals including Radix Bupleuri, Fructus Aurantii, Rhizoma Cyperi, Radix Curcumae, and Rhizoma Chuanxiong restore pectoral qi's central regulatory function over qi dynamics, dispersing stagnant liver qi and preempting phlegm-stasis aggregation. This corresponds to the "unblocking constrained qi" and "resolving turbidity" therapeutic modules of Mi's five-method framework.

3.3 Concurrent Resolution of Phlegm and Activation of Blood Circulation

Impaired pectoral qi circulation disrupts the physiological balance "liver ascends left, lung descends right", triggering generalized qi stagnation. Constrained qi impairs body fluid distribution and blood perfusion, precipitating pathological accumulation of phlegm and stasis that fail to dissipate spontaneously. In Treatise on Blood Syndromes, Tang Rongchuan recorded that phlegm transforms into stasis over time, and chronic blood stasis reciprocally generates phlegm

and fluid retention; the two pathological products interact reciprocally and act as mutual causal factors. Accordingly, treatment built on tonifying and regulating pectoral qi incorporates targeted adjunct therapy based on the relative severity of phlegm accumulation and blood stasis. Medicinals such as Prunella vulgaris and Concha Ostreae resolve phlegm and soften hard masses; Rhizoma Curcumae Longae and Rhizoma Zedoariae invigorate blood circulation and eliminate stasis, jointly achieving nodule regression and elimination.

3.4 Prioritizing Holistic Systemic Regulation

The concept of "pectoral qi as the foundation" advocates a holistic therapeutic perspective. By optimizing systemic qi-blood circulation and regulating the ascending, descending, exiting and entering movements of visceral qi, it establishes a favorable internal physiological environment for nodule resolution. Pectoral qi and the five zang viscera interact and nourish one another. Harmonized visceral functions generate abundant pectoral qi; in turn, sufficient pectoral qi sustains the physiological activities of the five zang organs. Primordial qi, the innate vital qi transformed from kidney essence, ascends to the thorax to nourish pectoral qi, while pectoral qi descends to the dantian to reinforce primordial qi. The physiological ascending property of the liver is closely linked to the normal function of pectoral qi. Intact transport and transformation of the spleen and stomach guarantees an unceasing source of pectoral qi production. The inherent descending tendency of lung qi guides pectoral qi downward to tonify primordial qi, and pectoral qi reciprocally assists the lung in governing respiration and propels the heart to circulate blood throughout the body [17]. In the prevention and treatment of thyroid nodules guided by the theory of "pectoral qi as the foundation", clinicians address local binding of phlegm and blood stasis on the one hand, and replenish the source of pectoral qi as well as restore the pivotal regulatory function of pectoral qi on the other, thereby realizing simultaneous treatment of the root cause and superficial manifestations. This fully embodies two core TCM philosophies: "treating disease by targeting its root" and the holistic view of human life activities.

4. Composition and Therapeutic Characteristics of Mi's Decoction for Reducing Goiter

The composition and characteristics of Mi's Decoction for Reducing Goiter: Mi's Decoction for Reducing Goiter consists of Radix bupleuri, White peony, Chuanxiong, Tangerine, Green Tangerine Peel, sparganium rhizome, Rhizoma Curcumae, Bitter orange, Prunella vulgaris, Rhizoma Cyperi, Curcuma, raw oyster shell and Thunberg Fritillary Bulb, it is a classic formula that clears heat, resolves phlegm, softens hardness and dissipates masses, indicated for scrofula, phlegm nodules and goiter. Radix bupleuri in this prescription acts to soothe liver depression, which follows the therapeutic rule of unblocking stagnated wood. Bitter orange functions to rectify qi and eliminate stagnation. Both are monarch medicines of the formula. Rhizoma Cyperi is known as the qi medicinal that acts on blood; its primary effect is to promote qi movement, with an auxiliary action of activating blood circulation. Chuanxiong is the blood medicinal that moves qi; it activates blood circulation while promoting qi movement simultaneously. Sanleng and Rhizoma Curcumae excel at treating masses and lumps. Green Tangerine Peel soothes the liver and breaks stagnant qi, being good at regulating qi of the liver and gallbladder; Tangerine excels at regulating lung and spleen qi; Radix Curcumae regulates both qi and blood. raw oyster shell softens hardness and dissipates masses; Thunberg Fritillary Bulb dissipates masses and relieves abscesses; Summer Deadnettle dissipates masses and reduces swelling. White peony nourishes blood and softens the liver, preventing excessive qi-regulating and stagnation-breaking medicinals from consuming yin and blood. All herbs in the formula work in combination to treat both root and branch, and regulate qi and blood simultaneously.

5. Clinical Case Analysis

5.1 Patient Profile

Female, 60 years old, first consultation date: October 19, 2024 Chief complaint: Incidentally detected thyroid nodules for 3 years. Associated symptoms: Intermittent cervical fullness, bitter taste in mouth, lingual swelling, irritability; normal appetite and sleep, loose stool, regular micturition. Tongue manifestation: Pale red tongue with thin white coating; Pulse: Stringy and slippery.

5.2 Auxiliary Examinations (October 19, 2024)

Thyroid ultrasonography: Bilateral thyroid lobe nodules, maximum lesion size 9.6 mm × 4.9 mm, TI-RADS grade 3; diffuse parenchymal echo alteration of bilateral thyroid lobes, coarse uneven scattered hypoechoic areas forming grid-like texture; CDFI revealed sparse fine branching blood flow signals. Thyroid function and autoantibodies: TSH 9.30 uIU/mL, TPOAb 260.00 IU/mL, TGAb 644.00 IU/mL.

5.3 Diagnoses

Western medicine: 1. Thyroid nodules; 2. Hashimoto's thyroiditis; 3. Hypothyroidism TCM diagnosis: Ying Bing (goiter disease), liver depression and spleen deficiency syndrome

5.4 Therapeutic Principle

Soothe the liver, invigorate the spleen, regulate qi and activate blood circulation, resolve phlegm and dissipate masses.

5.5 Prescription

Modified Mi's Decoction for Reducing Goiter, Oral administration of levothyroxine sodium tablets 50ug once a day, Formula composition: Radix bupleuri, Chuanxiong, Bitter orange, Rhizoma Cyperi, Green Tangerine Peel, Thunberg Fritillary Bulb, calcined oyster shell, Prunella vulgaris, Stir-fried Atractylodes Macrocephala, Tangerine, Poria, vinegar-processed sparganium rhizome, vinegar-treated rhizoma curcumae, Curcuma, Silk tree flower, honey-fried licorice root.

5.6 Follow-up Adjustments

On October 26, 2024, the patient attended the second

consultation. She reported relieved irritability but still suffered from bitter taste in the mouth, swollen tongue and sticky unformed stools 1–2 times per day. The dosage of Rhizoma Chuanxiong was reduced; Radix Curcumae, Pericarpium Citri Reticulatae and Poria Cocos were removed from the formula, while Radix Rehmanniae, bran-stir-fried Rhizoma Dioscoreae and stir-fried Fructus Gardeniae were supplemented to strengthen the efficacy of invigorating the spleen, eliminating dampness, clearing heat, purging fire and nourishing yin. The third to sixth consultations followed this adjusted formula with flexible modifications based on real-time symptoms. After three months of treatment, the patient came for the seventh consultation on January 18, 2025, with nearly complete resolution of all subjective symptoms. January 11, 2025 Re-examination, Thyroid ultrasonography showed diffuse thyroid lesions with coarse and uneven internal echoes and scattered hypoechoic areas; CDFI displayed a small amount of fine branching blood flow signals, and all nodules in bilateral thyroid lobes had disappeared. Thyroid function and autoantibody indicators: TSH 6.22 uIU/mL, TPOAb 240.00 IU/mL, TGAb 572.00 IU/mL.

5.7 Case Pathogenesis

The patient's persistent mood disturbance, irritability and easy anger are typical manifestations of liver depression and qi stagnation. Insufficient liver dispersion leads to bile regurgitation, resulting in a bitter taste in the mouth. When stagnant liver qi invades the spleen, it impairs the transportation and transformation of spleen qi, giving rise to spleen deficiency symptoms such as loose stool. Endogenously generated phlegm-turbidity accumulates and coagulates in the anterior neck, eventually forming thyroid nodules.

In the modified formula, Radix Bupleuri disperses liver constraint and Fructus Aurantii moves stagnant qi to relieve abdominal distension; the two herbs function as the monarch medicinals of the prescription. Pericarpium Citri Reticulatae Viride soothes the liver and breaks stagnant qi; combined with Radix Bupleuri, it regulates qi movement and enhances the overall liver-soothing effect. Rhizoma Chuanxiong, Rhizoma Cyperi Preparata and Radix Curcumae work together to move qi, activate blood circulation and relieve constraint, further reinforcing the liver-dispersing action of Radix Bupleuri. Vinegar-processed Rhizoma Sparganii and vinegar-processed Rhizoma Curcumae Zedoariae unblock qi stagnation and dissipate blood stasis. Bulbus Fritillariae Thunbergii, Concha Ostreae Calcined and Spica Prunellae resolve masses and disperse stagnation. Bran-stir-fried Rhizoma Atractylodis Macrocephalae, Pericarpium Citri Reticulatae and Poria Cocos regulate qi, invigorate the spleen, resolve phlegm and eliminate dampness, cutting off the source of phlegm generation. Flos Albiziae relieves emotional constraint and calms the spirit, while honey-fried Radix Glycyrrhizae harmonizes all medicinal ingredients in the prescription. The full formula synergistically exerts the effects of soothing the liver, invigorating the spleen, regulating qi, activating blood circulation, resolving phlegm and dissipating nodules.

6. Conclusion

Contemporary fundamental research validates that pectoral qi correlates closely with cardiopulmonary function, systemic energy metabolism, immune homeostasis and neurohumoral regulation, occupying a central position among postnatal qi subtypes. The thyroid gland locates bilaterally anterior to the laryngeal prominence; pectoral qi accumulates in the thorax, traverses the throat, penetrates heart meridians and governs ventilation, rendering the throat the primary portal for pectoral qi circulation. Pectoral qi insufficiency or stagnation induces anterior cervical qi constraint, obstructing systemic blood and body fluid circulation. Chronic pathological accumulation ultimately generates phlegm, blood stasis and thyroid nodules. Guided by the "pectoral qi as the foundation" theory, Professor Qi Haiyan establishes a core therapeutic framework for thyroid nodules centered on tonifying and regulating pectoral qi to activate the qi pivot. Pectoral qi dysfunction constitutes the root disease cause; impaired qi pivot function represents the core pathological mechanism; visible nodular lesions arise from accumulated stagnant qi, phlegm and blood stasis. Targeted therapy tonifies and unblocks pectoral qi to restore pivot movement, harmonize qi-blood circulation and eliminate nodules. This theoretical and clinical system fully embodies TCM's root-targeted treatment philosophy, elevating the understanding of thyroid nodules from isolated cervical focal lesions to systemic disorders of qi circulation. It provides an operable, effective clinical therapeutic paradigm worthy of further research and clinical promotion.

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