

Discussion on the Clinical Differentiation and Treatment of Pulmonary Nodules based on the Constitution Theory of Traditional Chinese Medicine

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Abstract: *Through a review of literature and ancient texts, this study summarizes the distribution of TCM constitutional types among patients with pulmonary nodules. The findings indicate that the common predisposing constitutions include Qi deficiency, Yang deficiency, Yin deficiency, and Qi stagnation. This article elaborates on the etiology, pathogenesis, and clinical manifestations of pulmonary nodules in individuals with different constitutional types. It proposes foundational herbal formulas tailored to each constitution and suggests modifications based on specific symptoms to achieve optimal clinical outcomes. The study aims to provide novel insights for the diagnosis and treatment of pulmonary nodules by emphasizing the importance of constitutional regulation. By addressing constitutional imbalances and improving the internal environment of the lungs, this approach may reduce the incidence of pulmonary nodules and lung cancer. The exploration of the relationship between pulmonary nodules and TCM constitution offers valuable references for early intervention and personalized treatment strategies.*

Keywords: Pulmonary nodules, Constitution, Prevent disease, Differentiation of body and treatment.

1. Introduction

Pulmonary nodules are a common lung disease in clinical practice, often involving lymph nodes in the hilum and mediastinum, and also known as intrathoracic nodules [1]. On imaging, they appear as focal, circular, high-density solid or subsolid lung shadows with a diameter of ≤ 3 cm. More than 90% of nodules have hidden clinical manifestations, 30% -50% may experience coughing, difficulty breathing, or chest pain, and 20% may experience airway hyperresponsiveness or accompanied by wheezing sounds. Therefore, patients are not detected in the early stages, and most are detected during physical examinations. Western medicine often uses surgical treatment or regular follow-up visits to treat pulmonary nodules, and most patients suffer from anxiety due to the misconception that pulmonary nodules are lung cancer [2]. Therefore, during the long follow-up process, they will seek traditional Chinese medicine treatment. However, there is no clear disease name for pulmonary nodules in ancient books, and there is no consensus in traditional Chinese medicine on the understanding of pulmonary nodules. At the same time, the clinical manifestations are not yet obvious, and there may be cases where there is no evidence to distinguish them during the treatment process. Therefore, the author believes that treatment can be based on physical constitution and differentiation of body types.

The theory of traditional Chinese medicine constitution originated from 《The Yellow Emperor's Inner Canon》 and has been continuously inherited and developed over several years. The combination of innate inheritance and acquired physical constitution is a quality characteristic formed by the imbalance of qi and blood, organs, yin and yang, meridians and other factors in the body. The susceptibility to individual diseases is often related to physical constitution and also has adjustability [3]. Wang Qi [4] classified physical constitution into nine types based on body characteristics, psychological qualities, physiological structure, tendency to develop

diseases, adaptability to the outside world, and research. Among them, except for the peaceful constitution, they are all biased constitutions. On the basis of treating diseases before they occur and improving physical fitness, traditional Chinese medicine combines the four diagnostic methods to regulate patients' physical fitness, address their clinical manifestations, pay attention to their emotional issues, improve their quality of life, prevent the occurrence of nodules, and make existing nodules shrink or even disappear, achieving the effects of preventing diseases before they occur, preventing changes in existing ones, and early treatment.

2. Etiology, Pathogenesis, and Susceptible Constitution of Pulmonary Nodules

2.1 Etiology and Pathogenesis

There is no clear disease name for pulmonary nodules in traditional Chinese medicine, and they are often considered as precancerous lesions. Therefore, pulmonary nodules can refer to the descriptions of lung cancer in ancient books [5]. According to the pathogenesis and symptoms, they mainly include pulmonary accumulation, pulmonary obstruction, wheezing syndrome, pulmonary necrosis, etc. In the book 《Su Wen · Wu Zang Sheng Cheng》 [6], it is introduced that "Qi accumulates in the chest and becomes weak due to wheezing, and the white veins become floating due to wheezing" to explain the etiology of pulmonary obstruction. Wang Jianfeng [7] and his team believe that the onset of pulmonary nodules is closely related to qi deficiency; During the treatment of pulmonary nodules, Wu Weiping [8] had severe symptoms and did not deviate from the words phlegm and blood stasis; Zhao Fengyun [9] believed that this disease is mainly caused by weakness of the internal organs, obstruction of qi, loss of circulation, internal generation of phlegm turbidity, accumulation of heat and toxin, obstruction of the lung meridian, and the main location of the disease is in the lungs,

with deficiency in the lungs, spleen, and kidneys.

The common causes of pulmonary nodules are mainly internal and external factors. The external factors are mainly related to the perception of external pathogens, haze, smoke, etc. The internal factors are mainly the deficiency of lung qi, weakness of positive qi, and weak gasification of the three organs of the lungs, spleen, and kidneys. As a result, the lungs lose their ability to regulate water channels, the spleen lacks the ability to transport and dissolve water and dampness, and the fluid metabolism is not smooth, leading to the accumulation of dampness in the body. Over time, it forms blood stasis and turns into nodules. The basic pathogenesis of pulmonary nodules is qi stagnation, dampness obstruction, phlegm stasis, and coagulation.

2.2 Susceptible Constitution

Lu Wangjuan [10] and her team observed 180 clinical patients with pulmonary nodules and found that the predominant constitution for pulmonary nodules was Yang deficiency, Qi stagnation, and Qi deficiency, accounting for 46.1% of the total. Malignant pulmonary nodules were also mainly Yang deficiency, Qi stagnation, and Qi deficiency, accounting for a total of 67.7% of the total constitution. Wu Chen [11] and his team observed 424 patients diagnosed with pulmonary nodules in clinical practice and found that the main symptoms were qi deficiency, yang deficiency, and damp heat, accounting for 37.97%, 11.08%, and 9.91%, respectively. Xu Jiayi [12] and his team found that among 150 patients with pulmonary nodules, Qi deficiency was the most common, while the rest were mostly due to a combination of Qi deficiency and Yang deficiency. The number of patients with Qi deficiency and Yang deficiency was the highest, followed by Qi deficiency and Yin deficiency. Qi deficiency and Qi depression were the most common types of malignant pulmonary nodules. Xu Haizhu [13] and his team found that among 381 clinical patients with pulmonary nodules, Qi deficiency was the most common, followed by Yin deficiency, damp heat, and Qi deficiency combined with Yin deficiency was the most obvious in the combined constitution. Wang Xueyue [14] and her team observed 246 patients with pulmonary nodules and found that Qi deficiency had the highest proportion, followed by Yang deficiency, Yin deficiency, and Phlegm dampness. The proportion of Yang deficiency, Qi deficiency, and Yin deficiency in malignant pulmonary nodules is slightly higher. Based on the above literature summary, the high-risk population for pulmonary nodules mainly has constitution of Qi deficiency, Yang deficiency, Yin deficiency, and Qi depression. Therefore, timely adjustment of biased constitution can prevent further deterioration of pulmonary nodules. The four common constitutions are summarized as follows.

3. Treating Through Physical Constitution Theory

3.1 Qi Deficiency Constitution

Qi deficiency constitution is a constitution characterized by weak breath and decreased function of the body and organs, mainly due to congenital deficiencies and acquired spleen and stomach deficiency [15]. The lungs are delicate organs that

come into contact with the external environment through the mouth and nose. Among the five organs, they are most susceptible to external pathogens. Qi deficiency is characterized by a deficiency in the body, lungs, and spleen, causing the lungs to lose their ability to spread and descend, resulting in poor Qi circulation; Spleen deficiency leads to dysfunction in the transportation and distribution of body fluids, resulting in the endogenous production of phlegm and fluids; Qi deficiency leads to a decrease in resistance, prolonged illness, accumulation of pathogenic toxins in the body, and the formation of blood stasis and nodules over time.

Qi deficiency is mainly manifested as weakness of qi and decreased function of organs, characterized by decreased disease resistance, physical weakness, pale complexion, shortness of breath, limb weakness, weak sputum production, dizziness, low voice, sweating when moving, pale tongue coating, and weak pulse. Due to insufficient positive qi, it is easy to be susceptible to external pathogens, child diseases, and mother diseases, which often involve the spleen. Therefore, Teacher Han believes that qi deficiency is mainly caused by lung and spleen qi deficiency. Treatment should focus on nourishing qi and spleen, strengthening the body and dispersing nodules. It is recommended to use Bu Zhong Yi Qi Tang or Liu Jun Zi Tang with modifications. On the basis of this formula, Huangqi should be reused to strengthen the body and nourish qi. If the nodule density is high, seaweed, Forsythia suspensa, and other anti-inflammatory and dispersing nodules should be added; Warm tonics are often used to relieve dryness and heat, and can be supplemented with nourishing herbs such as Rehmannia glutinosa and Panax ginseng [16]; Qi deficiency leads to excessive phlegm and dampness. If there is white and greasy tongue coating, dizziness and nausea, commonly used ingredients such as Coix seed and Poria cocos are used to invigorate the spleen and eliminate dampness; Long term damage to yang can be treated with Epimedium and Morinda officinalis to warm the kidneys and replenish yang [17].

3.2 Yang Deficiency Constitution

Yang deficiency constitution is a constitution characterized by insufficient yang energy, loss of warmth, and fear of cold as the main feature. It is mainly influenced by lifestyle, environment, and personal constitution. Related studies have found that if the relevant population lacks exercise [18-19] in daily life, coupled with a preference for cold foods, it is easy to transform into a Yang deficiency constitution. It is precisely because this group of people lacks exercise that their yang energy is difficult to dissipate, and they prefer to eat cold things that their yang energy is blocked, their dissemination is not smooth, their Yang deficiency fluid metabolism stagnates, and they accumulate into phlegm; Poor blood circulation can lead to blood stasis over time; Over time, the disease progresses with the accumulation of phlegm and blood stasis, combined with Yang deficiency and weak qi circulation, resulting in poor qi flow and the formation of nodules.

The main manifestations of Yang deficiency constitution are fear of cold limbs, lack of warmth in hands and feet, clear phlegm, fatigue and weakness, pale and chubby tongue, slippery fur, loose stools, and slow and weak pulse. Yang deficiency leads to a decrease in the function of internal

organs, loss of qi circulation, improper warming, and the inability of body fluids to function normally, resulting in the accumulation of phlegm. Therefore, Yang deficiency is often characterized by the coagulation of phlegm. In clinical practice, My teacher often uses Gualou Xiebai Banxia Decoction to promote the circulation of heat, promote yang circulation, and disperse phlegm and nodules, with the aid of soft and firm substances. In clinical practice, Sun Zengtao [20] created a formula for warming yang and nourishing qi, which uses Epimedium to tonify the kidneys and promote yang, Coix seed to strengthen the spleen and lungs, and Cistanche deserticola to warm the kidneys and supplement yang, enhancing the effect of warming qi and yang. Yang deficiency leads to poor blood circulation, and can be treated with centipedes, scorpions, and other blood activating agents to eliminate symptoms.

3.3 Yin Deficiency Constitution

Yin deficiency constitution is a constitution characterized by insufficient Yin fluids such as body fluids, essence, and blood, as well as Yin deficiency and internal heat. It is mainly related to congenital factors, dietary habits, excessive indulgence, and irritable emotions. Yin deficiency generates internal heat, refining fluids into phlegm; Loss of body fluid and poor blood circulation, resulting in blood stasis; If the qi is not smooth, tangible objects will stagnate, thus forming nodules.

Yin deficiency is mainly manifested as irritable and quick tempered personality, dry mouth and throat, dry cough with no phlegm or sticky phlegm that is difficult to cough up, hot hands, feet and heart, night sweats, facial flushing, constipation, red urine, red tongue and little saliva, and fine pulse. My teacher believes that the constitution of Yin deficiency is characterized by Yin deficiency and internal dryness, with the main symptoms being dryness, heat, and damage to Yin. Treatment should focus on nourishing Yin and moistening dryness, with the main formula being Qingzao Jiufei Tang, which can be adjusted according to the specific symptoms. During the diagnosis and treatment of pulmonary nodules, Hu Xuejun [21] found that Yin deficiency was mainly caused by lung and stomach Yin deficiency, and often modified with Sha Shen Mai Dong Tang or Mai Men Dong Tang. Yin deficiency is prone to excessive heat. During the process of regulating the body, My teacher attaches great importance to the combination of nourishing yin and clearing heat drugs. In the syndrome of Yin deficiency and heat dissipation, he adds nourishing yin and clearing heat such as smallpox pollen, reed roots, and cicadas; If there is a deficiency of both qi and yin, yam and Polygonatum sibiricum can be added; Spleen deficiency and bloating, adding medicines such as tangerine peel and Atractylodes macrocephala. Yin deficiency is mainly manifested as irritable and quick tempered personality, dry mouth and throat, dry cough with no phlegm or sticky phlegm that is difficult to cough up, hot hands, feet and heart, night sweats, facial flushing, constipation, red urine, red tongue and little saliva, and fine pulse. My teacher believes that the constitution of Yin deficiency is characterized by Yin deficiency and internal dryness, with the main symptoms being dryness, heat, and damage to Yin. Treatment should focus on nourishing Yin and moistening dryness, with the main formula being Qingzao Jiufei Tang, which can be adjusted according to the specific

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3.4 Qi Stagnation Constitution

Qi machine is the normal movement of qi in the human body. The liver is a vital organ that regulates the flow of qi, causing the liver to rise and the lungs to fall, and coordinating qi machines. Qi stagnation constitution refers to a series of symptoms that occur when the liver's drainage function is not fully utilized in the human body, mainly related to diet, living environment, work, etc. Nowadays, due to various pressures in life and work, it has triggered a common sense of anxiety. People with qi stagnation have poor physical and emotional flow, stagnant qi, and stagnation of lung qi. Pathological products such as blood stasis and phlegm retention accumulate in the lungs, forming nodules. Wang Kentang of the Ming Dynasty once said, "The method of treating accumulation is to prioritize regulating qi," which also emphasizes the importance of regulating qi flow.

The main manifestations of Qi stagnation constitution are dizziness, bloating and pain, emotional distress, easy sighing, sensitive and suspicious personality, chest and rib distension, and a feeling of foreign body in the throat. In clinical practice, patients with Qi stagnation constitution are often accompanied by insomnia. Huang Qingyuan [22] found that Qi stagnation constitution accounts for the highest proportion in the study of common types of insomnia constitution. My teacher has rich experience in Qi stagnation constitution types, and in clinical practice, the main prescription for relieving depression and calming the mind is mainly modified. Qi stagnation can cause poor blood circulation, and Xuefu Zhuyu Tang can be added to relieve depression and disperse knots; If there is a white and greasy tongue coating and a heavy and tired body, add Xiaoluo Wan to relieve depression, transform phlegm, soften hardness, and disperse nodules.

4. Medical Record Summary

Qin, female, 55 years old, technician. Initial diagnosis on September 20, 2022, chief complaint: pulmonary nodules found during physical examination for more than 3 years. More than 3 years ago, I visited a local hospital due to persistent cough and white phlegm. A chest CT scan revealed a ground glass nodule in the lower lobe of the right lung, approximately 2.8cm in size. After surgical resection, the condition improved. Two months ago, the patient's chest CT scan showed an enlarged nodule in the lower lobe of the right lung, about 1cm. Symptoms: cough, low phlegm, accompanied by discomfort and shortness of breath in the

chest and back, warm hands and feet, easy to fatigue, good sleep, moderate appetite, pale and chubby tongue, white and greasy coating, tooth marks on the edges, weak pulse, and irregular bowel movements. Based on comprehensive information, it was found that the patient has a deficiency of yang. Treatment should focus on warming yang and nourishing qi, resolving phlegm and dispersing nodules. The prescription is as follows: 30g of Gualou, 20g of Xiebai, 15g of Banxia, 15g of Huangqi, 12g of *Atractylodes macrocephala*, 12g of yam, 12g of Epimedium, 15g of *Cistanche deserticola*, 12g of *Sophora flavescens*, 12g of *Magnolia officinalis*, 7 doses, decoct in water, 400mL each time, take warm in the morning and evening.

Second diagnosis: The patient reported a reduction in cough and chest tightness, and recent mood issues. The original prescription was given with 12g of rose petals and 12g of acacia bark 7 doses, with the same frying and serving method as before.

After three consultations, the patient's discomfort in the chest and back significantly improved, and their mood improved. Therefore, they removed the rose and acacia bark, added 15g of shiitake mushrooms, 15g of half branch lotus, and 15g of white flowered snake tongue grass, 7 doses, and fried and taken the same way as before.

Commentary: The patient was initially diagnosed with postoperative lung cancer, and due to lack of warmth in the hands and feet, a pale and plump tongue, and a deep and delayed pulse, the constitution was identified as yang deficiency. Yang deficiency and qi deficiency were accompanied by symptoms such as coughing and shortness of breath, resulting in qi stagnation and discomfort in the back. The treatment should focus on warming the yang and supplementing qi, resolving phlegm and resolving nodules. The formula mainly consists of Gualou Xiebai Banxia Decoction with modifications. Epimedium can tonify the kidneys and promote yang, *Cistanche deserticola* can warm the kidneys and nourish yang, Gualou can reduce phlegm and lower qi, Xiebai can promote yang and disperse nodules, and Banxia can be used to strengthen the spleen and eliminate phlegm. Patients who are usually tired can benefit from the effect of Huangqi to nourish lung qi. Winter flowers can be used as a supplement to relieve cough and phlegm, *Atractylodes macrocephala* and Yam can strengthen the spleen and regulate qi, and *Magnolia officinalis* can relieve pain by promoting qi circulation. During the second diagnosis, the patient's emotions were not smooth. Rose flowers and acacia bark were added to relieve depression and calm the mind. During the third diagnosis, the symptoms were stable. Therefore, anti toxic and anti-cancer drugs such as Shanci mushroom, *Hedyotis diffusa*, and *Scutellaria barbata* were added to further enhance the effect of softening and dispersing lumps.

5. Summary

The etiology of pulmonary nodules is not yet clear in modern medicine, and there is limited research on pulmonary nodules in clinical practice. There are often no clear treatment methods for nodules, and regular follow-up visits are the main approach; There is currently no exact disease name and

syndrome type in the field of traditional Chinese medicine. The concept of treating diseases before they occur was first proposed in the Huangdi Neijing, which precisely demonstrates that traditional Chinese medicine has always attached importance to prevention and can intervene in the development of diseases in a timely manner through the differentiation of constitution. If the constitution can intervene before the disease is discovered or prevent further deterioration of the disease after it has already been discovered, it can greatly improve the quality of life and well-being of patients. Chen Shixian et al. [32] found that susceptibility to lung cancer is closely related to physical constitution, and lung cancer is more likely to occur in biased constitutions such as qi deficiency and yin deficiency. Song Huan et al. believe that emotional factors are also one of the causes of lung cancer, which is consistent with the pathogenesis of lung nodules caused by qi stagnation in traditional Chinese medicine. Therefore, My teacher is good at starting from the physical condition of patients with early detection of pulmonary nodules and unclear symptoms, balancing biased physical conditions, improving the living environment of pulmonary nodules, reducing the incidence of disease, relieving patients' anxiety, and achieving prevention before illness and prevention after illness.

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