

Theoretical Discussion on the Relationship between "Shaoyang as the Pivot" and Spine

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Abstract Shaoyang dominates the opening and closing of Yang Qi and the transfusion of Qi, blood and body fluid, and the spine is inseparable from the movement of Yang Qi and the whole body of Qi, blood and body fluid. This article investigates the impacts of the dysfunctions of Shaoyang Sanjiao pivot and Shaoyang Gallbladder pivot on the spinal column. Combined with the analysis of clinical medical records, it aims to prove the beauty of using classic theories to guide clinical practice, so as to provide reference for the therapy of spine and spinal related diseases.

Key words "Shaoyang as the pivot"; "Spine"; Disease

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The concept of "Shaoyang as the pivot" first originates from *Chapter 6 Separation and Combination of Yin and Yang in Suwen (Plain Question)*, which records that "As for the separation and combination of the three yang meridians, Taiyang is responsible for the opening, Yangming for closing, and Shaoyang for pivoting." It is an important theoretical concept in traditional Chinese medicine, playing a crucial role in the circulation of Yang Qi, blood, and body fluids in human body^[1]. The occurrence of spine-related diseases is often associated with the Governor Vessel (Du Mai), which governs the yang qi of the entire body and participates in the circulation of Qi, blood, and body fluid. Therefore, there is a close connection between Shaoyang pivot and the spine. Theoretically exploring the impact of Shaoyang pivot dysfunction on the spine is of great significance for the treatment of spinal diseases and spine-related conditions.

Theoretical connotation of Shaoyang as the pivot

Shaoyang and pivot

Shaoyang is also known as Shaohuo, Yiyang, and Nenyang. As recorded in the *Huangji Jingshi Shu (Book of Supreme Ultimate Governing the World)*^[2], extensive motion corresponds to Taiyang; mild motion corresponds to Shaoyang. It can be concluded that the Shao in Shaoyang indicates Yang Qi (vital energy) in a mild and insufficient state, which is therefore susceptible to be invaded by pathogenic factors. In *Shuowen Jiezi: Explaining Simple and Analyzing Compound Characters*, an ancient Chinese dictionary, the character Shu is explained as "the pivot of a door". The character Hu is a pictogram of Menfei representing a single door leaf, and Fei is explained as "the door panel". Therefore, "Shu" refers to the pivot or hinge of a door — the axis on which the door turns. In traditional Chinese medicine, the opening and closing of

Yang Qi are metaphorically compared to the swinging of a door, with Shaoyang serving as the transitional pivot in the process. Pathogenic invasion of Shaoyang leads to pivot mechanism dysfunction, which consequently impairs the proper opening and closing of Yang Qi.

Sanjiao as the pivot

Shaoyang regulates the opening and closing of Yang Qi through different pathways. *Lingshu (The Spiritual Pivot)*, in the chapter on *Channels and Collaterals*, states: "The channel of the Hand-Shaoyang Sanjiao... enters the supraclavicular fossa (Quepen), spreads across the pericardium (Tanzhong), disperses to envelop the pericardium, descends through the diaphragm, and extensively connects with Sanjiao." From this, it can be deduced that Sanjiao serves as one of the pivotal pathways for Shaoyang. Anatomically situated in the chest and abdomen, Sanjiao primarily runs longitudinally, connecting the upper, middle, and lower energizers. Furthermore, Chapter 38 of *Nanjing (Classic of Difficult Issues)* notes that Sanjiao is "the origin of the separate pathways of primordial Qi, presiding over all Qi." Similarly, *Linglan Midian Lun (Treatise on the Secret Canon of the Spiritual Orchid)* states that "Sanjiao is the official in charge of waterways, through which water passages flows." Thus, Sanjiao acts as a crucial pivot for the ascending and descending of Qi mechanisms. It serves as the conduit for the circulation of primordial Qi (Yuan Qi) and body fluids, as well as the site of Qi transformation. Consequently, it directly determines whether Yang Qi and body fluids can be adequately distributed throughout the entire body.

Gallbladder as the pivot

The gallbladder is closely related to the ascending and spreading of Yang Qi. As Tang Rongchuan summarized in his *Xuezheng Lun (Treatise on Blood Disorders)*: "The gallbladder is connected to the liver and governs the Minister Fire (Xianghuo)... The dissemination of Minister Fire occurs in Sanjiao, while it resides in the gallbladder. When the Minister Fire in the gallbladder is not hyperactive, it transforms into the clear yang-wood qi, which ascends to the stomach." *Huangdi Neijing (Yellow Emperor's Inner Canon)* states: "The functions of all the eleven Aang-fu organs depend on the gallbladder." In his *Dusuwen Chao (Excerpts*

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from the Plain Questions), Hua Shou annotated this by explaining: "The gallbladder is the official of justice and impartiality, and its channel belongs to Shaoyang, which corresponds to the Minister Fire. With wind and cold below, dryness and heat above, and dampness in the middle, the fire alone wanders freely among them; hence, it is said that the functions of all organs depend on the gallbladder." Although primordial Qi is rooted in the kidneys, its ability to warm and nourish the Zang-fu organs and the entire body fundamentally relies on the action of the Minister Fire. The gallbladder governs and determines the direction and quality of primordial Qi, thereby ensuring the harmonious and normal functioning of all Zang-fu organs. As Suwen, in the chapter *Yin-Yang Yingxiang Dalun* (*Great Treatise on Yin-Yang and Manifestations*), states: "Moderate fire (Shaohuo) generates Qi. When Shaoyang Minister Fire is vigorous, primordial Qi becomes abundant, and Essence-Qi (Jing Qi) is fully sustained.

Understanding of spine in Traditional Chinese Medicine

Du Mai runs along the posterior midline of the human body. From an anatomical perspective, it can be seen that Du Mai is inseparable from the spine. Moreover, Du Mai is known as the "sea of Yang meridians" and plays a role in circulating Qi, blood, and body fluids, thereby maintaining normal physiological functions of the human body.

The spine governs the Yang Qiof the entire body

Suwen, in the chapter *Gu Kong Lun* (*Treatise on Bone Voids*), states: "Du Mai originates from the central bone below the lower abdomen." Similarly, Chapter 28 of *Nanjing* records: "Du Mai originates from the lower extremity, runs parallel to the inside of the spine, ascends to Fengfu point, and enters to connect with the brain." From these texts, it can be understood that Du Mai and the spine overlap in their anatomical course. Professor Wei Guikang, a modern master of traditional Chinese medicine, integrated classical Chinese medicine theories with modern anatomical and neuroscience perspectives, arguing that the spine serves as the anatomical channel for Du Mai, participating in the governance of the whole body's Yang Qi, and proposed the concept of the "integration of the spine and Du Mai."^[3] This further verifies the close connection between the spine and Du Mai. *Lingshu*, in the chapter on *Channels and Collaterals*, states: "The Bladder Foot-Taiyang channel... its straight course runs along the spine, reaches the middle of the waist, follows the paravertebral muscles, connects with the kidneys, and belongs to the bladder." *Neijing*, in the chapter *Yin-Yang Lihe Lun* (*Treatise on the Separation and Union of Yin and Yang*), notes that "Taiyang originates from the deepest Yin (Zhiyin) and ends at the Gate of Life (Mingmen), known as the Yang within Yin." This indicates that the Taiyang meridian also participates in the physiological functions of the spine. Moreover, the opening and closing of Yang Qi cannot be separated from the pivot of Shaoyang. As the saying goes, "Taiyang is the opening, Shaoyang is the pivot, and Yangming is the closing." When the opening and closing of Yang Qi are properly regulated, it ultimately converges in Du Mai, which then commands Yang Qi of the entire body. As stated in *Neijing*, when

Yang Qi is refined, it nourishes the spirit; when it is gentle, it nourishes the tendons. If the opening and closing mechanisms fail, cold Qi will follow, leading to severe illness."

The spine serves as a conduit for the circulation of Qi, blood, and body fluids

Lingshu, in the chapter on *Channels and Collaterals*, states: "When human life begins, Jing is formed first. Once Jing is established, the brain and marrow are generated. The bones serve as the framework, the meridians as the network, the tendons as the sinews, the flesh as the bulk, and the skin becomes firm while the hair grows. When grain enters the stomach, the meridian pathways become unblocked, and Qi and blood begin to circulate." The spine is also composed of skin, flesh, tendons, meridians, and bones. *Lingshu*, in the chapter on *Ying Qi* (*Nutrient Qi*), records: "The pathway of nutrient Qi... Qi emerges from Yin... its branching vessel ascends the forehead, runs along the vertex, descends into the nape of the neck, follows the spine, and enters the marrow cavity, which is Du Mai." This demonstrates that Du Mai participates in the systemic circulation of Qi and blood.

Dysfunction of Shaoyang pivot mechanism and pathological changes of the spine

The impact of Sanjiao pivot dysfunction on the spine

Firstly, Sanjiao serves as the arena for the movement of Qi. Suwen, in the chapter *Liu Wei Zhi Da Lun* (*Great Treatise on the Six Subtle Mechanisms*), states: "When the ascending and descending are abolished, the vital mechanism perishes; when the ascending and descending cease, Qi stands alone in peril." When Sanjiao is compromised by pathogenic factors, the disruption of the ascending and descending movements of Qi becomes the pathogenesis of various diseases. *Yixue Rumen* (*Medical Introduction*), in the chapter on the *Intercommunication of Zang-fu Organs*, explicitly states: "The kidneys are interconnected with Sanjiao." Sanjiao regulates waterways relying on the steaming action of Kidney Yang; conversely, the steaming of Kidney Yang must be facilitated through Sanjiao. When Qi transformation of Sanjiao fails, Yang Qi becomes depressed internally and loses its dispersing function, leading to symptoms such as body heat and restlessness. Furthermore, if Kidney Yang cannot warm Taiyang meridian, Taiyang loses its opening function. Suwen, in the chapter *Ci Yao Tong Pian* (*Treatise on Acupuncture for Lumbago*), notes: "When the Foot-Taiyang meridian is affected, it causes lumbago radiating to the neck and spine, with the sacrum and back feeling as heavy as if bearing a weight." Similarly, Clause 1 of *Shanghan Lun* (*Treatise on Cold Damage*) states: "The syndrome of Taiyang disease is characterized by a floating pulse, stiffness and pain in the head and neck, and aversion to cold." Clause 40 further mentions: "When exterior cold damage is unresolved... there may be difficult urination." These are all symptoms resulting from the failure of Taiyang to open. Therefore, patients with spinal diseases often present with concomitant symptoms such as aversion to cold and urinary abnormalities. In conclusion, Sanjiao is crucial for the steaming action of Kidney Yang. Li Ting also pointed out in *Yixue Rumen*: "For kidney diseases, it is appropriate to harmonize Sanjiao." Secondly, Sanjiao is the pathway for the circulation of body

fluids. Li Dongyuan mentioned in his *Piwei Lun* (*Treatise on the Spleen and Stomach*): "When the spleen is diseased, the pathogenic factors flow downward to attack the kidneys. Earth overacts on Water, causing the bones to become weak and powerless; this is bone erosion, leading to bone marrow depletion." This occurs when Sanjiao fails in its function of regulating waterways, lacking the power to transport refined nutrients to the spine. Consequently, the spine loses its nourishment, resulting in symptoms such as back pain. *Lingshu*, in the chapter on *Channels and Collaterals*, states: "When the Hand-Shaoyang Sanjiao meridian is affected, the diseases include deafness... throat obstruction, and pain in the shoulder, upper arm, elbow, and forearm, as well as dysfunction of the little finger and the ring finger." These clinical manifestations are also consistent with the symptoms of cervical spondylosis in modern medicine.

The impact of the dysfunction of the Shaoyang Gallbladder pivot on the spine

Shaoyang governs the bones. *Lingshu*, in the chapter on *Channels and Collaterals*, states: "The Foot-Shaoyang Gallbladder channel... governs the diseases of the bones." As previously mentioned, when Shaoyang Minister Fire is vigorous, Jing Qi becomes abundant and Yuan Qi is fully sustained, enabling the pivot mechanism to rotate and regulate opening and closing. Since human joints are primarily responsible for movement, they function similarly to the pivot mechanisms within the skeletal system. Therefore, it can be concluded that the Foot-Shaoyang Gallbladder meridian governs the functional use of the bones. Consequently, *Suwen*, in the chapter *Jue Lun* (*Treatise on Reversal of Qi*), notes: "When *Shaoyang Qi* reverses, the joints become impaired. When the joints are impaired, the waist cannot move, and the neck cannot turn." The Gallbladder and Liver meridians share an exterior-interior relationship. *Huangdi Neijing Taisu* (*Great Basis of the Yellow Emperor's Inner Canon*) states: "*Shaoyang* is the exterior of the Liver; the Liver governs the tendons, and the tendons converge at the bones. Thus, the Qi of Shaoyang nourishes them." When the pivot mechanism of the Gallbladder meridian becomes impaired, it also affects the physiological function of the Liver in governing the tendons. This is corroborated by the classical record: "When the Liver Meridian of Foot-Jueyin is affected, it causes lumbago with an inability to bend forward or backward." Shaoyang serves as the pivot for the gradual opening of human Qi. From the perspective of the human growth cycle, adolescence corresponds precisely to the Shaoyang phase^[4]. Prolonged poor sleep quality and academic stress in adolescents can lead to pivot dysfunction of the Shaoyang Gallbladder meridian. *Yizong Jinjian* (*Golden Mirror of Medicine*), in the chapter *Zhenggu Xinfa Yaoshi* (*Essential Principles of Orthopedic Trauma*), states: "Bones and flesh are connected, and tendons bind the bones... All tendons follow the bones, linking and consolidating them." When the balance between tendons and bones is disrupted, pathological manifestations such as "tendons dislocating from their grooves and bones shifting from their seams" occur. Studies have shown that adolescent idiopathic scoliosis accounts for 80% of all scoliosis cases^[5]. Furthermore, the symptom of "fullness and oppression in the chest and hypochondrium" in the Xiao Chaihu

Tang (Minor Bupleurum Decoction) syndrome can also explain symptoms such as chest tightness and a bitter taste in the mouth observed in some patients. Anatomically, the Gallbladder meridian communicates with the three Yin meridians in the pelvis, as its pathway traverses this region. Qichong (ST30) is located within the pelvis, and Shaoyin and Shaoyang meridians communicate through the Qi Jie (Qi Thoroughfares)^[6]. This interaction facilitates the circulation of the three Yin and three Yang meridians. Therefore, when pelvic pathologies such as pelvic tilt occur, the disease can spread to the Yin meridians via Qi Jie, leading to Shaoyin and Jueyin system diseases, such as irregular menstruation and infertility.

Treatment of spinal related diseases from the perspective of Shaoyang

Traditional Chinese medicine treatment for Shaoyang spinal disease

As the representative formula for harmonizing Shaoyang in *Shanghan Zabing Lun* (*Treatise on Cold Damage and Miscellaneous Diseases*), *Xiao Chaihu Tang* focuses on smoothing the pivot mechanism and regulating Qi movement. It harmonizes the pivoting mechanism of Shaoyang, allowing the Qi of the interior and exterior, as well as Yin and Yang, to flow freely and smoothly^[7]. In this formula, Chaihu (Bupleurum) disperses the pathogenic factors in Shaoyang meridian and relieves Qi stagnation; Huangqin (Scutellaria) clears heat and relieves muscle tension; Banxia (Pinellia) and Shengjiang (Fresh Ginger) assist Chaihu in resolving Qi stagnation, harmonizing the stomach, descending the rebellious Qi to stop vomiting, and regulating the waterways of Sanjiao; Renshen (Ginseng), Dazao (Jujube), and Zhi Gancao (Honey-fried Licorice) harmonize the spleen and stomach, and support the vital Qi to eliminate pathogenic factors. Some scholars^[8] have demonstrated that the modified combination of Xiao Chaihu Tang and Banxia Baizhu Tianma Tang can effectively alleviate the clinical symptoms of cervical spondylosis, yielding favorable clinical efficacy. The concept of Sanjiao as the arena for the circulation of water and Qi has also been corroborated by modern medicine. Xue Jianxi *et al.* applied Xiao Chaihu Tang to treat cervical spondylosis and found that the formula could influence arterial blood flow velocity^[9]. Specifically, both the peak systolic velocity and the end-diastolic velocity were significantly increased in the treatment group. In the treatment of discogenic low back pain, in addition to tonifying the kidneys, attention should also be paid to soothing and regulating Sanjiao. Guan Honggang *et al.*^[10] applied the method of tonifying the kidneys and regulating Sanjiao, based on the Zangxiang (visceral manifestation) theory and the theory of specific Zang-fu intercommunications, and achieved good therapeutic effects for the acute phase of discogenic low back pain. According to the Sanjiao theory, both the spinal canal and the intestinal tract can be attributed to Sanjiao. The etiology, pathogenesis, and lesion site of the Jijiao Lihuang Tang (Stephanian and Rheum Decoction) syndrome align with those of acute lumbar disc herniation. Some scholars^[11] have utilized this formula to treat acute lumbar disc herniation. This approach regulates and unblocks Qi movement, removes water retention, and

reduces edema, thereby facilitating the relief of lower back and leg pain.

Acupuncture treatment for Shaoyang spinal disease

From the perspective of the acupoints on the Shaoyang Gallbladder meridian, Juegu (Xuanzhong), the influential point of marrow among the Eight Influential Points, is the most representative manifestation of Shaoyang (Gallbladder) governing the bones. Some scholars have summarized the therapeutic experience of Juegu in the *Zhenjiu Dacheng* (*Great Compendium of Acupuncture and Moxibustion*), concluding that Juegu can be used to treat local disorders, Gallbladder meridian syndromes, and diseases related to "marrow." By virtue of its effect of tonifying essence and filling the marrow, it is utilized to treat conditions such as rickets and tremor diseases^[12]. *Jingjin* (muscle region) of the Foot-Shaoyang Gallbladder meridian facilitates communication between the upper and lower, anterior and posterior, left and right sides, and even the entire body. It fully embodies the role of a transportation hub, perfectly illustrating the concept of "Shaoyang as the pivot." Clinically, when treating restricted spinal mobility, selecting acupoints on the Foot-Shaoyang meridian and Ashi points—such as Daimai, Juliao, Huantiao, as well as palpable tenderness points and cord-like indurations^[13]—has demonstrated excellent efficacy in improving restricted lumbar movement in patients. During clinical practice, even when the pathology does not solely originate from the Shaoyang meridian itself, emphasizing the combined use of Shaoyang acupoints can ensure that the entry and exit of Qi mechanisms follow their proper pathways, thereby restoring the balance of Qi and blood within the meridians.

Conclusion

From the Shaoyang Sanjiao and Shaoyang Gallbladder as pivots to the relationship between the spine and Yang Qi as well as Qi and blood, it is evident that the Shaoyang pivot mechanism is closely related to the spine. However, there are still issues that need further exploration, such as whether the Shaoyang theory in *Huangdi Neijing* and the Shaoyang theory in *Shanghan Lun* have the same impact on the spine. Additionally, how to use modern scientific methods to confirm the influence of Shaoyang on the spine is also a topic that needs further exploration.

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