

Treating Functional Constipation (Liver Depression and Spleen Deficiency Type) based on the Theory of Qi Movement

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Abstract: *Functional constipation (FC) is a clinically common intestinal disorder. Due to rapid societal development, an increasingly accelerated pace of life, continuous changes in lifestyle, heightened life stress, and alterations in dietary structure, the prevalence of FC has significantly increased in recent years. Although FC involves no organic pathologies related to the pelvic floor or intestines, it significantly and negatively impacts patients' quality of life. Clinical studies indicate that FC patients often experience emotional states such as anxiety and depression [1]. Among FC patients, the pattern of Liver Depression and Spleen Deficiency is predominant. Traditional Chinese Medicine (TCM) demonstrates definite efficacy in treating FC. By regulating and smoothing Qi movement to fortify the spleen and harmonize the stomach, as well as soothe the liver and move Qi, TCM treatment harmonizes the Qi movement of the viscera, leading to smooth defecation. TCM treatment for FC holds a promising future.*

Keywords: Qi movement, Liver Depression and Spleen Deficiency, Functional Constipation.

1. Introduction

Functional Constipation (FC) is a disease characterized by a series of symptoms including dry and hard stools, difficulty defecating, reduced bowel movement frequency, sensation of incomplete evacuation, and sensation of anorectal obstruction, all due to non-organic causes [2]. Constipation is a common gastrointestinal problem; the global average prevalence of constipation in adults is approximately 16% (ranging from 0.7% to 79%), with a prevalence of 33.5% among adults aged 60 to 110 [3]. In China, the prevalence of FC among adults is 8.2% [4], and its incidence is gradually increasing year by year. The incidence is generally higher in the elderly than in the young, and higher in women than in men. The term "constipation" (bianbi) first appeared in the Huangdi Neijing (Yellow Emperor's Inner Canon), which indicated its relationship with the spleen, stomach, small intestine, and kidney. Numerous factors such as innate exuberant yang, contraction of external pathogens, emotional disturbances, and senile physical deficiency can lead to pathogen stagnation in the intestines, obstruction of the large intestine, loss of warmth and lubrication in the intestines, weakened propulsion by the large intestine, stagnation of fecal matter, and difficulty in stool expulsion, resulting in constipation. Modern medical research on the mechanisms of FC indicates that its occurrence is closely related to colonic motility abnormalities, pelvic floor muscle dysfunction, mucosal immune dysregulation, intestinal flora dysbiosis, brain-gut axis dysfunction, psychiatric and psychological abnormalities, genetic factors, and medication/dietary factors [5]. This includes abnormal distribution of interstitial cells of Cajal (ICC), dysfunction of enteric neurotransmitters such as acetylcholine, substance P, 5-hydroxytryptamine (serotonin), motilin, gastrin, vasoactive intestinal peptide (VIP), nitric oxide, and cholecystokinin (CCK), affecting gastrointestinal motility regulation; disruption of oxidative stress indicator balance leading to tissue and cellular damage causing constipation; abnormal aquaporin (AQP) expression and ion levels causing abnormal water metabolism and internal environment instability,

resulting in dry, difficult-to-pass stools; intestinal flora involvement in FC pathogenesis through neural, immune systems, and their own metabolites; and brain-gut axis dysfunction contributing to FC by affecting visceral sensation, colonic motility, and defecatory muscles [6].

Western Medical Treatment: (1) Pharmacotherapy: For mild constipation, elderly patients, pregnant/postpartum women, lactating mothers, and some refractory FC patients, symptoms can be effectively relieved by increasing dietary fiber and water intake, and using bulk-forming laxatives and osmotic laxatives (e.g., polyethylene glycol, lactulose). Other options include lubricant laxatives, stimulant laxatives (diphenylmethane derivatives, anthraquinones), prokinetics, prosecretory agents, and probiotics (to regulate intestinal flora) [7]. (2) Non-Pharmacological Therapy: Includes biofeedback therapy, sacral nerve stimulation, botulinum toxin injection, fecal microbiota transplantation (FMT), and psychological interventions [8].

TCM Treatment of FC is flexible and diverse, utilizing oral decoctions, enema with decoctions, Chinese patent medicines, Tuina massage, acupuncture, electroacupuncture, and acupoint catgut embedding, offering stable efficacy and minimal side effects [9]. TCM emphasizes holistic pattern differentiation. As recorded in the Suwen (Plain Questions) chapter of the Huangdi Neijing: "The anus also serves the five zang organs." The spleen, stomach, heart, liver, lung, and kidney are all closely linked to the occurrence of FC. Under the regulation of the zang-fu organs, the ascending, descending, exiting, and entering movements of qi are orderly, ensuring normal human life activities [10]. This paper approaches FC from the theory of qi movement, studying the characteristics of qi ascent and descent in the liver and spleen, focusing on TCM treatment methods for constipation of the Liver Depression and Spleen Deficiency pattern.

2. Liver Depression (Ganyu)

2.1 Etiology and Pathogenesis

The concept of “Wood Depression” (mu yu) was first proposed in the Huangdi Neijing, and the term “Liver Depression” (gan yu) was explicitly put forward later in the book Chishui Xuanzhu: Yu Zheng Men (Red Water Mysterious Pearl: Depression Patterns Chapter) [11]. Emotional distress leads to liver qi stagnation. FC is closely associated with abnormal emotional states. The Zhengyin Mailun: Dabian Jielun (Investigation of Disease, Cause, Pulse, and Treatment: Treatise on Constipation) records: “Anger causes qi to ascend, contemplation causes qi to bind, worry and overthinking cause all qi to become depressed and stagnant, leading to qi congestion in the large intestine, thus resulting in constipation.” Modern research shows that when the body experiences anxiety and depression, bidirectional communication occurs between the enteric nervous system and the central nervous system via the vagus nerve, brain-gut peptides, and the gut microbiota, subsequently inducing FC [12]. Additionally, circadian rhythm abnormalities can lead to FC by affecting colonic motility, damaging the intestinal mucosal barrier, and disrupting normal brain-gut axis function [13], making sleep disturbances another significant factor in FC. Wang Mengying stated, “Illnesses arising from the seven emotions must start from the liver” [14]. The liver belongs to Wood, governs free coursing (shuxie), governs ascending and movement, stores blood, and prefers free flow and unobstructedness. The most fundamental substance constituting the body is qi, and its most basic movements are ascending, descending, exiting, and entering. The Suwen·Liuwei Zhi Dalun (Plain Questions: Great Treatise on the Subtle Meanings of the Six Periods) states: “If exiting and entering cease, the spirit mechanism perishes; if ascending and descending stop, the qi foundation becomes isolated and endangered. Therefore, without exiting and entering, there is no birth, growth, prime, aging, and death; without ascending and descending, there is no birth, growth, transformation, harvest, and storage.” The liver governs uprising and free coursing, regulating qi movement. When the liver’s free coursing function is normal, qi movement flows freely internally and externally, and ascent and descent are coordinated. As recorded in the Duyi Suibi (Reading Medical Notes): “The liver connects yin and yang, governs blood and qi, resides between the true essence (zhenyuan), and holds the pivot of ascent and descent” [11]. Based on years of clinical experience, Professor Zhang Zhenyu concluded that abnormal liver free coursing manifests in two ways: “Excessive Coursing” (shuxie taiguo) and “Insufficient Coursing” (shuxie buji). Excessive coursing is termed “Liver Qi Counterflow” (ganqi ni), which can further divide into upward counterflow (shangni) and transverse counterflow (hengni). Upward counterflow to the head and face can cause symptoms like distending headaches and tinnitus, as recorded in the Suwen·Ju Tong Lun Pian (Plain Questions: On Pain): “Anger causes qi counterflow, severe cases may lead to vomiting blood and undigested food diarrhea, thus qi ascends.” Transverse counterflow invades the middle burner and Spleen-Earth, causing gastrointestinal symptoms like abdominal pain, diarrhea, belching, and acid reflux, as stated in the Suwen·Zhi Zhen Yao Da Lun Pian (Plain Questions: On the Ultimate Truth in the Great Treatise): “When Jueyin prevails... pain at the stomach and heart region, extending to both flanks, borborygmus and undigested food diarrhea, lower

abdominal pain, even vomiting.” The treatment principle is “Soothe the Liver” (shu gan), restoring its proper path, clinically often using modified Chaihu Shugan San (Bupleurum Liver-Soothing Powder). Insufficient coursing is termed “Liver Qi Stagnation” (ganqi yu), as recorded in the Suwen·Liu Yuan Zheng Ji Dalun Pian (Plain Questions: Great Treatise on the Proper Order of the Six Periods and Their Manifestations): “When Wood Depression erupts... people suffer from pain at the stomach and heart region, extending to both flanks, diaphragmatic and throat obstruction, inability to swallow food or drink.” Liver qi stagnation leads to Wood failing to course Earth (mu bu shu tu), impairing the Spleen and Stomach’s transportation and transformation function. Treatment often employs the method of “Easing the Liver” (shu gan), primarily using modified Xiaoyao San (Free Wanderer Powder) [15]. The renowned Qing dynasty physician Ye Tianshi believed that liver qi stagnation and impaired liver free coursing cause Wood to transversely invade Stomach-Earth, preventing Stomach qi from descending, thus obstructing the large intestine and leading to constipation [16].

2.2 Relationship between Liver and Large Intestine in Modern Medicine:

The liver participates in the digestion and absorption of the gastrointestinal system. Bile acids, steroid substances formed in the liver, are components of bile. They conjugate with glycine and taurine in the liver to form bile salts. Bile salts act like detergents in the digestive system, emulsifying dietary lipids, fat-soluble vitamins, and polyvalent metals to promote absorption [17]. Bile acids are secreted into the duodenum with bile to aid digestion. Most are reabsorbed in the distal ileum and return to the liver via the portal vein, to be secreted again into the intestines. This cycle is called enterohepatic circulation. The ileal bile acid transporter (IBAT) plays a key role in bile acid reabsorption [18]. Research shows that bile acids regulate colonic transit via secretion and prokinetic effects: they promote colonic secretion of water and electrolytes and stimulate high-amplitude propagated contractions in the colon. Inhibiting IBAT reduces ileal bile acid reabsorption, enhancing bile acid delivery to the colon to stimulate it. The IBAT inhibitor elobixibat treats constipation based on this principle [19]. Furthermore, the liver receives blood directly from the intestines. Factors like alcohol consumption, obesity, and gut dysbiosis damage the intestinal barrier, increasing intestinal permeability and exposing intestinal mucosal cells and the liver to potentially inflammatory products, predisposing to liver disease [20].

2.3 Treatment

Patients with constipation due to liver qi stagnation often also exhibit emotional abnormalities like hypochondriac distending pain, anxiety, depression, and insomnia due to impaired liver free coursing. Clinical treatment can use liver-soothing and depression-relieving herbs such as Curcuma (“Yujin”), Mume Flower (“meihua”), and Rose Flower (“meiguihua”). Curcuma enters the Heart, Liver, and Lung channels; its substance is light and its qi moves freely. Rose Flower has an ascending and dispersing nature, softens the liver, awakens the spleen, and is an essential herb for soothing the liver and activating blood [21]. Ye Tianshi

excelled at using Cyperus (“xiangfu”) and Chuanxiong (“chuanxiong”) to move qi and relieve depression, combined with spleen - fortifying, stomach - harmonizing, dampness - transforming herbs like Atractylodes (“cangzhu”), Medicated Leaven (“shenqu”), and Silkworm Feces (“cansha”) to soothe the liver and harmonize the stomach, move qi and free the bowels [16]. Professor Ye Song treats constipation of the Liver Qi Stagnation pattern using a modified formula based on Maziren Wan (Hemp Seed Pill) and Chaihu Shugan San (Bupleurum Liver-Soothing Powder) (Bupleurum “chaihu”, Bitter Orange “zhike”, Tangerine Peel “chenpi”, White Peony “baishao”, Hemp Seed “huomaren”, Apricot Seed “xingren”, Amomum Fruit “sharen”, Citron Peel “xiangyuanpi”, Atractylodes “baizhu”, Trichosanthes Fruit “quanguai”, Aucklandia “muxiang”, Pinellia “banxia”, Poria “fuling”, Red Peony “chishao”, Bush Cherry Seed “yuliren”, Peach Kernel “taoren”). The whole formula tonifies without causing stagnation, soothes liver qi, regulates qi, fortifies the spleen, boosts qi, and moistens the intestines to promote defecation [22]. Master of Chinese Medicine Fang Heqian, based on his rich clinical experience, created the “He Gan Tang” (Harmonize Liver Decoction) derived from “Xiaoyao San” (Free Wanderer Powder) (Chinese Angelica “danggui”, Jujube “dazao”, White Peony “baishao”, Cyperus “xiangfu”, Atractylodes “baizhu”, Perilla Stem “sugeng”, Bupleurum “chaihu”, Codonopsis “dangshen”, Poria “fuling”, Honey-fried Licorice “zhi gancao”, Peppermint “bohe”). To the base formula “Xiaoyao San” (which soothes the liver, relieves depression, nourishes blood, and fortifies the spleen), he added Cyperus “xiangfu” (soothes liver qi, relieves depression, regulates the middle), Perilla Stem “sugen” (regulates qi, relaxes the middle), Codonopsis “dangshen” (supplements the center and boosts qi), and Jujube “dazao” (tonifies spleen and stomach, boosts qi, generates fluids). This formula simultaneously regulates the liver and spleen, qi and blood, enhancing the effects of cultivation and dredging [23]. Professor Li Candong favors using Tongxie Yaofang (Important Formula for Painful Diarrhea) to treat constipation of the Liver-Spleen Disharmony pattern [24]. Although Tongxie Yaofang is a classical formula for diarrhea (liver-spleen disharmony), analysis of the individual herb actions suggests it can also treat constipation [25].

3. Spleen Deficiency (Pixu)

3.1 Etiology and Pathogenesis

The Suwen-Jingmai Bie lun (Plain Questions: Separate Treatise on the Channels) records: “Fluids enter the stomach; the essence overflows and is transported upward to the spleen. The spleen qi disperses the essence, sending it upward to the lung. The lung regulates the waterways, sending it downward to the bladder. The water essence spreads to the four directions, circulating through the five channels, harmonizing with the four seasons, the five zang organs, and yin-yang, measured as the norm.” The spleen governs transportation and transformation, is the root of the postnatal foundation, and the source of qi and blood production. The spleen and stomach are the pivot (shuniu) for the ascent and descent of qi throughout the body. The spleen ascends, the stomach descends; positioned centrally, they connect the upper and lower [26]. If spleen transportation fails, spleen-stomach ascent/descent becomes abnormal, the power to transform

water and grains weakens, clear yang fails to ascend, turbid yin fails to descend, water-dampness cannot be transformed, stagnating in the middle burner. Qi movement lacks propulsive force, fecal matter stagnates, obstructing the large intestine, resulting in constipation [27]. As stated in the Lingshu-Kou Wen (Spiritual Pivot: Questions on the Mouth): “If central qi is insufficient, urination and defecation become abnormal.” The Yimen Banghe (Warnings to Physicians) mentions that the mechanism of ascent and descent lies in the normal transportation and transformation function of Spleen-Earth [26]. The renowned Qing dynasty physician Huang Yuanyu believed central qi belongs to Earth and is the pivot (shuniu) for the ascent and descent of yin and yang. The pivot axis moves: clear qi rotates leftward, ascending to transform into fire; when half ascended, it is named Wood. Turbid qi rotates rightward, descending to transform into water; when half descended, it is named Metal. Water, Fire, Wood, and Metal are the Four Images. Thus, the theory “Earth as the pivot of the Four Images, the one qi flowing in a circuit” (tu shu sixiang, yiqi zhouliu) was formed. The modern famous physician Peng Zi’yi proposed: “Central qi is like the axle, the four dimensions are like the wheels; the axle turns the wheels, the wheels move the axle flexibly” [28]. Central qi is generated by original qi (yuanqi), corresponding to different names and functions in different contexts: Earth qi, central axis, central qi, central Wu-Ji Earth, spleen-stomach. Veteran TCM physician Li Ke believed: “There is nowhere in human life without central qi. Earth can generate all things; without Earth there is no world.” The central Earth in the human body is the spleen-stomach (central qi). Central qi ascends on the left and descends on the right, rotating and operating ceaselessly, nourishing the five zang organs, giving rise to endless life. It is evident that the motive force of the “circular movement” (yuan yundong) is central qi, transformed by the spleen and stomach. If spleen-stomach qi is deficient, qi and blood lack a source for generation, hindering the normal operation of qi movement and causing various diseases.

3.2 Relationship between Spleen and Large Intestine in Modern Medicine

In the modern medical system, the spleen is an immune organ, an important component of the human immune system. Relevant studies indicate that constipation affects the body’s immune function. Constipated mice are more prone to increased intestinal barrier permeability, increased blood-brain barrier permeability, intestinal flora dysbiosis, colonic inflammation, and damage, along with immune cell imbalance and cytokine dysregulation [29]. Related experimental studies show that the spleen coefficient (spleen weight relative to body weight) of constipated mice is reduced compared to normal mice [30].

3.3 Treatment

Failure of spleen transportation leads to impaired intake and movement, qi stagnation, water retention, transformation into dampness, and congealing into phlegm. Dampness is heavy, turbid, sticky, and greasy. Dampness, phlegm, and retained fluids obstructing the large intestine can cause abnormal conduction, resulting in constipation. Clinical symptoms often manifest as sticky, unformed stools and sensation of incomplete evacuation. Treatment often employs methods to

fortify the spleen, transform dampness, move qi, and guide out stagnation [31]. Clinically, Sanren Tang (Three Kernels Decoction) modified can be used to diffuse qi movement, clear heat, and drain dampness. Shenling Baizhu San (Ginseng, Poria, and Atractylodes Macrocephala Powder) modified can fortify the spleen and transform dampness. For qi deficiency, Xiangsha Liujunzi Tang (Costusroot and Amomum Six Gentlemen Decoction) or Buzhong Yiqi Tang (Tonify the Middle and Augment the Qi Decoction) can be chosen. For severe water-dampness, add dampness-draining herbs like Atractylodes (“cangzhu”), Poria (“fuling”), Atractylodes (“baizhu”). For qi stagnation, add qi-moving herbs like Bupleurum (“chaihu”), Magnolia Bark (“houpo”), Tangerine Peel (“chenpi”), Aucklandia (“muxiang”), Unripe Bitter Orange (“zhishi”). When qi moves normally, fluids flow smoothly, and dampness pathogens dissipate naturally [32]. Professor Wei Fengming believes that if dampness is in the upper burner, herbs like Platycodon (“jiegeng”) and Aster (“ziwan”) can be chosen to diffuse the lung and promote water movement, embodying the principle “lifting the lid to pour out the pot” (“ti hu jiegai”), opening the upper burner’s obstruction so the lower burner opens naturally. If dampness is in the lower burner, combine Wuling San (Poria Five Powder) with herbs like Alisma (“zexie”), Atractylodes (“baizhu”), Polyporus (“zhuling”), and Poria (“fuling”) to blandly leach out dampness, causing the damp pathogen to exit via urine [33]. Professor Zhu Lingyun believes that treating constipation of the Spleen Deficiency with Damp Stagnation pattern should fundamentally follow the principles of fortifying the spleen and boosting qi, eliminating dampness and resolving turbidity, moving qi, and guiding out stagnation. He formulated the “Hezhong Huazhuo Daozhi Tang” (Harmonize Middle, Resolve Turbidity, Guide Stagnation Decoction) (Unripe Bitter Orange “zhishi”, Raw Atractylodes “sheng baizhu”, Silkworm Feces “cangsha”, Honeylocust Fruit Abnormal “zaojiazhi”). Atractylodes fortifies the spleen, boosts qi, dries dampness, and promotes urination. Unripe Bitter Orange transforms phlegm, drains dampness, guides qi, and disperses stagnation. The combination of Atractylodes and Unripe Bitter Orange (Zhizhu Wan - Citrus and Atractylodes Pill) achieves simultaneous ascent and descent, tonification and drainage. Honeylocust Fruit transforms phlegm and disperses binds, moistens the intestines and frees the bowels. Silkworm Feces specializes in transforming dampness, harmonizing the stomach, and descending turbidity. The pairing of Honeylocust Fruit and Silkworm Feces lifts the clear and descends the turbid. Used together, these four herbs open intestinal obstruction and restore the ascending/descending movement of qi [34]. Professor Liu Shaoneng excels at using wind herbs like Saposhnikovia (“fangfeng”) and Clematis root (“weilingxian”). Saposhnikovia dries dampness and awakens the spleen; Clematis root dispels wind and eliminates dampness [35]. Huang Yuanyu proposed “Roucongrong Tang” (Cistanche Decoction) (Cistanche “roucongrong”, Cinnamon Twig “guizhi”, Hemp Seed “huomaren”, Honey-fried Licorice “zhi gancao”, Pinellia “banxia”, Poria “fuling”) specifically for difficult defecation with sheep-dung-like stools caused by yang decline and earth dampness (“yangshuai tushi”), spleen failing to digest and grind, liver and intestines losing nourishment, depressive sinking, and wind-dryness. Poria, Licorice, and Pinellia drain dampness, raise spleen yang, and descend turbid yin. Cinnamon Twig lifts sinking and reaches

depression. When central qi moves, qi movement operates normally, and constipation resolves [36]. Cistanche in the formula lubricates the intestines and frees the bowels, excels at supplementing the yang within yang in the lower burner, and is highly effective for constipation due to spleen deficiency with damp encumbrance, damaging both water and earth [37]. Professor Shan Zhaowei excels at using Platycodon (“jiegeng”) paired with Bitter Orange (“zhike”), and Abalone Shell (“shijueming”) paired with Radish Seed (“laifuzi”), regulating upper and lower simultaneously, using both ascending and descending. To treat constipation, the method “desire to descend, first ascend” (“yu jiang xian sheng”) can be used: add a small amount of ascending herbs to a large group of descending herbs. When qi ascent and descent return to normal, constipation resolves [38].

4. Summary

Modern life pressures are gradually increasing, and psychological/mental health issues are becoming increasingly prominent, leading to a rise in constipation patients of the Liver Qi Stagnation type. Abnormal emotions cause liver qi depression; earth congestion leads to wood depression (tu yong mu yu), further affecting spleen-stomach function. Alternatively, inherent spleen-stomach deficiency allows liver wood to overact (gan mu lai cheng), also disrupting normal qi movement in the body, resulting in constipation [39].

Regarding treatment, regulating qi movement is the fundamental principle. (1) From the Liver perspective: Choose herbs like Aucklandia (muxiang), Bitter Orange (zhike), Magnolia Bark (houpo), Unripe Bitter Orange (zhishi), Green Tangerine Peel (qingpi), Tangerine Peel (chenpi), Bupleurum (chaihu) to regulate qi movement, soothe the liver, and relieve depression. (2) From the Spleen perspective: Spleen deficiency easily generates phlegm - dampness which obstructs qi movement. Choose spleen - fortifying, dampness-drying herbs like Amomum Fruit (sharen), Coix Seed (yiyiren), Atractylodes (baizhu), Poria (fuling). When phlegm-turbidity obstruction is eliminated, qi movement naturally becomes smooth, and bowel movements are freed.

In clinical treatment, particular attention should be paid to the smooth regulation of qi movement, emphasizing the connection between the five zang and six fu organs and constipation. Purgative medications should not be abused. By adhering to the holistic concept and treating the root cause, better clinical therapeutic effects can be achieved.

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