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Progress in Treatment of Anal Fissure with Traditional Chinese and Western Medicine

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Abstract: ***Anal fissure is a common disease in anorectal surgery, mainly for pain, bleeding, anal spasm. The specific etiology of anal fissure is still unclear. How to choose a reasonable treatment to alleviate the pain and improve the quality of life of patients is a difficult problem. In this paper, in recent years, the study of anal fissure at home and abroad were briefly summarized to traditional Chinese medicine treatment, western medicine treatment for reference.***

Keywords: Anal fissure, Traditional Chinese medicine treatment, Western medicine treatment**.**

1. Introduction

Anal fissure, a common form of anorectal disease, can occur at any age, but is particularly prevalent among young adults, and is more common in men than women [1]. Clinically, anal fissure usually occurs in the front and back of the midline of the anal canal (6, 12 points of lithotomy), and the main clinical symptoms are anal periodic pain, bleeding and constipation. Because of the special anatomical position of the anus, the anal skin is easy to be torn and infected repeatedly due to the defecation of the patients with anal fissure, which brings great pain and mental pressure to the patients, which makes the wound more difficult to heal and the course of the disease is prolonged [2].

2. Discussion on Pathogenesis of Anal Fissure in Modern Medicine

Modern anatomy suggests that the external anal sphincter, starting with the coccyx, extends anteriorly to the posterior anus. Divide into two strands, along the sides of the anal canal, around the front of the anus, and join again. Therefore, in the anus front and rear will leave space. Moreover, most ani muscles are located on both sides of the anus, with very few in the front and back of the anus. Anal before and after the stability is not as good as both sides, vulnerable to injury. Down, back, at an angle close to 90 degrees from the rectum. Therefore, the anus by the excrement after the severe squeeze, coupled with anal blood circulation after the poor, poor elasticity, anal gland distribution more dense, will cause anal fissure [3]. Theory of High Anal Pressure, Low Blood Flow: Studies have shown that the occurrence of anal fissure is associated with high tension in the internal sphincter. Increased pressure in patients with anal fissure is a major cause of anal stricture. Increased pressure, sphincter spasm, and slow healing are important factors [4]. Other scholars believe that posterior median anal ischemia is an important cause of anal fissure [5]. The inferior rectal artery was the main artery in the distal part of the anus, but the posterior combined part of the inferior rectal artery could not be anastomosed with the anus. Capillary angiography showed that the posterior midline had the fewest capillaries. Due to the influence of many factors, anal pressure increased, which led to the contraction of blood vessels, affecting the local blood flow, resulting in anal ischemia. The nature of the disease is that there is a negative correlation between anal skin blood perfusion and anal pressure. As anal tension increases, local blood circulation and perfusion in the anus are impaired, leading to local ischemia and ulcers [6].

3. Discussion on Etiology and Pathogenesis of Anal Fissure in TCM

In the Huangdi Neijing, anal fissures are categorized under the broader term hemorrhoids. As stated in the Treatise on Vital Unity and Natural said When wind evil invades the human body, it will disrupt the movement of Qi and blood, and cause the depletion of essence and Qi (especially the liver). If you eat too much at this time, it will lead to relaxation of muscles and veins, which will lead to diarrhea, hemorrhoids and other intestinal diseases. The pathogenesis of anal fissures and hemorrhoids arises from impaired gastrointestinal function, disrupted yin-yang equilibrium, obstruction of diaphragmatic and intestinal qi dynamics, combined with downward infusion of heat-toxins, ultimately leading to blood extravasation into the large intestine. “Chao’s Various pathogenic designate theory provides the earliest known description of anal fissure pathology: ‘A chronic laceration at the dentate line showing cyclical pruritus-pain-bleeding complex, classifiable under venous hemorrhoid disorder. ‘“

3.1 Intestinal Dryness due to Blood-Heat

Golden Mirror of the Medical Tradition said: Anal fissures with dry, hard stools are due to internal dryness-heat fire-dryness heat led to constipation [7]. In Traditional Chinese Medicine, the occurrence of anal fissures is associated with dampness-heat and blood stasis. The main causes include: Unhygienic diet, leading to the retention of pathogenic toxins; Physical weakness, overexertion, or emotional imbalance; Dry and hard stools, causing damage to the anal skin; Stagnation of blood and qi in the meridians, combined with the accumulation of dampness-heath, which, if prolonged, leads to anal ulceration and eventually anal fissures [8].

3.2 Deficiency of Yin and Body Fluids

This condition arises from yin-fire or excessive sexual activity, leading to the descent of the sovereign fire, resulting in dysfunction of the anterior yin. Over time, pathogenic factors accumulate internally, contributing to hemorrhoids. Individuals with innate qi-blood deficiency, yin deficiency, or excessive sexual strain may suffer from internal organ qi impairment, depriving the intestines of proper nourishment. This leads to dry stools, which damage the anal skin during defecation. Additionally, insufficient qi and blood hinder tissue regeneration, making the wound difficult to heal.

3.3 Downward Flow of Damp-heat

Dampness-Heat and toxic pathogens take advantage of deficiency to invade, affecting the skin and meridians as pathogenic factors, leading to qi-blood stagnation and impaired circulation [9].

3.4 Qi Stagnation and Blood Stasis

The Source of Illness and Its Symptoms states: “All hemorrhoidal diseases arise from wind-cold pathogen invasion, improper sexual habits, excessive alcohol consumption, and disharmony of yin-yang intercourse. These lead to qi-blood stagnation and meridian obstruction in the intestinal region, particularly the lower body”. “When heat prevails, it damages qi and blood. This impairment of qi-blood circulation affects the large intestine, resulting in what we call hemorrhoids.” Hemorrhoids develop when external pathogens, dietary/sexual excess, or blood-heat desiccate the intestines, impairing qi-blood flow. Per TCM principles: Qi stagnation causes blood stasis; blood deficiency fosters obstruction—hence ‘all lesions stem from coagulated blood’ [10]. Shi gong Chen, in his seminal work The Orthodox Manual of External Medicine, identifies hemorrhoid pathogenesis as stemming not only from dietary imbalances also closely association with: Prolonged sitting/lying, Chronic overexertion, Long-distance travel, Sexual intemperance.

4. Modern Medical Treatment of Anal Fissure

4.1 Conservative Treatment

Prepare a 1:5000 potassium permanganate solution for sitz baths to improve blood circulation and maintain local hygiene.

4.2 Oral Medication Therapy

In clinical practice, nitrates Tand topical calcium channel blockers are commonly applied to reduce internal sphincter tension and promote anal fissure healing. The most widely used nitrate preparations include: Isosorbide dinitrate, Glyceryl trinitrate. However, these agents are associated with high recurrence rates and frequent side effects. Nifedipine is currently rarely used in clinical practice [11]. Diltiazem is a commonly used clinical therapeutic agent with vasodilatory effects, which enhances blood flow and tissue perfusion to accelerate wound healing. A comparative study evaluated the efficacy of intravenously administered calcium channel blockers (CCBs) versus lidocaine in the treatment of anal fissures. The CCB VAS score, hemostatic effect and cure rate were significantly better than those of lidocaine [12]. Taking the topical gel agent mainly composed of nifedipine, lidocaine and betamethasone valerate as the control, the efficacy of the combined use of nifedipine, lidocaine and betamethasone valerate for hemorrhoids was explored and evaluated. The cure rate has significantly increased, and symptoms such as pain, bleeding, anal discharge and itching have been alleviated no adverse reactions were observed [13].

4.3 Surgical Treatment

Anal Dilation Therapy. This method is used for early-stage anal fissure patients who do not present complications such as fibrous external hemorrhoids or hypertrophic anal papillae. The wrists are crossed, and both index fingers are used to expand the anus outward. Then, the middle fingers are slowly inserted to continue dilating the anal canal for 3-4 minutes, allowing the internal and external anal sphincters to relax. Care must be taken to avoid excessive force or rapid dilation of the anal canal, as this may cause tearing of the mucosa and skin [14]. The technique of anal dilation has evolved over time, progressing from the initial use of four fingers to the application of Parks retractors and rectal balloons [15].

4.4 Internal Sphincterotomy

Currently, the most widely used clinical method is lateral internal sphincterotomy, which can be performed as either a closed or open procedure. This technique involves the surgical removal of the internal sphincter to relieve muscle spasms, restore normal anal canal elasticity, reduce resistance, and improve blood circulation in the anal canal, ultimately achieving the treatment of anal fissures [16]. Liping Han et al. [17] compared mid-lateral anal sphincterotomy with posterior midline sphincterotomy and found that the former had advantages in terms of postoperative pain and healing time, making it a surgical method worthy of promotion. Jun feng Liu et al. [18] proposed that anal fissures most commonly occur in the posterior midline of the anus. Posterior sphincterotomy can simultaneously treat hypertrophic anal papillae and sentinel piles (fissure-related hemorrhoids), relaxing the anal sphincter and reducing local tension.

4.5 Longitudinal Incision and Transverse Suture Method

This technique involves the complete excision of the diseased tissue along with a portion of the sphincter muscle to alleviate muscle spasms. However, its drawbacks include pain during dressing changes and bowel movements, as well as a prolonged healing time for the open wound.

In the conventional longitudinal-to-transverse suturing process, the vertical incision is converted into a horizontal one, increasing tension on the suture line. This can lead to postoperative incision edema, fecal residue retention in the transversely sutured area, and subsequent infection, impairing wound healing. To address these issues, an improved longitudinal incision and transverse suture method has been developed. This modification involves appropriately extending the length of the external anal incision while maintaining the original transverse suture length. Additionally,

the central portion of the wound is left un sutured, preserving only a radial incision. This adjustment helps reduce wound infection and promotes faster healing, demonstrating significantly better outcomes compared to the conventional method [19].

5. Traditional Chinese Medicine (TCM) Treatment for Anal Fissure

5.1 Herbal Medicine Treatment

In clinical practice, Traditional Chinese Medicine (TCM) emphasizes symptom-specific treatment, aiming to improve constipation, relieve pain, and promote ulcer healing to achieve therapeutic goals for anal fissures. Based on TCM syndrome differentiation, the fundamental treatment principles include clearing heat and cooling blood, activating blood circulation to relieve pain, and nourishing yin to promote bowel movements. Corresponding herbal formulas are selected according to the specific syndrome pattern [20]. For instance, Jie Jin et al. [21] applied Shao yao Gan cao Tang (Peony and Licorice Decoction), composed of peony root (Shao yao), licorice (Gan cao), Clematis root (Wei ling xian), and Corydalis rhizome (Yan hu suo), to treat anal fissures. The results demonstrated that this formula significantly alleviated pain and reduced anal discomfort in patients. Although Lateral Internal Sphincterotomy (LIS) boasts a high cure rate and low recurrence rate, it may still cause certain degrees of damage to anal function. In contrast, TCM offers a more conservative and holistic approach, minimizing functional impairment while effectively managing symptoms.

5.2 Herbal Fumigation and Steam Therapy

In Traditional Chinese Medicine (TCM), anal fissures are often attributed to damp-heat stagnation, leading to qi and blood stasis—manifested as pain due to the principle "obstruction causes pain." Poor blood circulation further deprives local tissues of nourishment, creating a vicious cycle of blood stasis and deficiency. Huang Bai– Clears damp-heat toxicity in the lower body and exhibits anti-inflammatory, antibacterial, and analgesic effects [22,23]. Calamine (Lu Gan Shi), and Calcined Dragon Bone (Duan Long Gu) – Work synergistically to warm and astringe, promoting tissue repair while replenishing qi and blood to "remove obstruction and relieve pain." Chrysanthemum (Ju Hua) – Targets the perianal region (a yin-dominated area) where blood circulation is typically sluggish. Stir-fried Turmeric (Jiang Huang) – Activates blood flow, unblocks meridians around the anus, and alleviates pain.

5.3 Combination of Surgical Treatment and Herbal Medicine Therapy

This approach integrates minimally invasive techniques with internal sphincterotomy, utilizing high-strength fiber-reinforced stainless steel instruments. A precise incision is made at the 5–7 o'clock positions (lithotomy position) to sever the internal sphincter, effectively reducing anal sphincter tension and partially restoring the biomechanical equilibrium of the anal canal. The procedure enhances perianal blood circulation, increases local tissue perfusion, and accelerates fissure healing. Maximal preservation of anal mucosal integrity, physiological function, and anatomical structure. Minimized trauma to perianal muscles, tissues, and vasculature, reducing postoperative pain. Prevention of anal incontinence by avoiding excessive sphincter muscle damage [24]. The herbal ointment (composed of antimicrobial and anti-inflammatory compounds) is applied postoperatively to: Reduce wound edema and inhibit excessive granulation tissue proliferation. Accelerate mucosal ulcer healing and alleviate anal pain [25]. This dual-modality strategy synergizes surgical precision with TCM wound care, optimizing recovery while minimizing functional compromise.

5.4 Topical Application of Herbal Oil Preparations in TCM

Herbal oil preparations are formulated by decocting medicinal herbs in plant-based oils (such as camellia oil) and applied topically to postoperative anal fissure wounds. This approach not only prolongs the therapeutic effect at the affected site but also forms a protective film to prevent secondary infection. Zun you Lin et al. [26] treated 30 postoperative anal fissure patients with herbal fumigation combined with Huang lian (Coptis) oil ointment application, achieving a 100% total effective rate with significant pain relief. Lin Changchun [27] applied Gromwell (Zi cao) oil-soaked gauze strips, to 30 postoperative cases. After 14 days, the marked effectiveness rate reached 97%, demonstrating notable reductions in postoperative bleeding, pain, and edema, along with accelerated wound healing.

5.5 Acupuncture Therapy

Modern research indicates that the primary mechanism of acupuncture in treating constipation caused by anal fissures involves the following aspects [28]: Acupuncture needles stimulate deep tissue receptors at specific acupoints, activating nerve endings and transmitting impulses to the central nervous system [29]. The CNS then processes and integrates these signals before relaying them to corresponding visceral organs, thereby modulating enteric nerve function. Neurological Regulation of Intestinal Motility by Acupuncture: Local modulation of the enteric nervous system, primarily balancing sympathetic and parasympathetic activity. Brain-gut axis mediation, linking central and enteric nervous systems. Experimental Evidence: Yi Li et al. [30] demonstrated that acupuncture rapidly enhances colonic motility. Masahiro et al. [31] observed that stimulating Zusanli (ST36) in rats improved colonic motility and shortened transit time. Chen Lan [32] found that high-frequency electroacupuncture at Zusanli enhances colonic motility, though the exact mechanism requires further study. Suppresses sympathetic overactivity to relax the bowel. Activates parasympathetic nerves via clockwise needle manipulation, strengthening peristalsis. Enhances small intestinal contractions and overall gastrointestinal motility, effectively alleviating constipation. Treatment protocols should be customized based on TCM syndrome differentiation for optimal outcomes [33]. As a non-surgical therapy rooted in the principle "where meridians reach, disorders can be treated," acupuncture holds significant value in proctology. Key meridians traversing the perianal region—Conception Vessel (Ren Mai), Governor Vessel (Du Mai), Gallbladder Meridian (Shao Yang), and Bladder

Meridian (Tai Yang)—are often selected, alongside the Large Intestine Meridian (Shou Yang Ming), to: Relieve constipation Reduce anal sphincter spasms [34].

6. Auricular Acupoint Pressure Therapy

The practitioner begins by thoroughly cleaning their hands and wiping the patient's ears with alcohol swabs. Key acupoints such as Shen men, Anus, and Rectum are identified and stimulated by applying Wang Bu Liu Xing seeds to these points. The seeds are gently pressed for 20 seconds, followed by a 30-second pause. This cycle is repeated three times per session, with treatments administered twice daily (morning and evening). The seeds are replaced every three days. When combined with psychological nursing care, auricular acupressure has been shown to significantly reduce postoperative pain in anal fissure patients [35].

7. Catgut Embedding Therapy

The patient assumes a prone position with the lower back and lower limbs fully exposed. Key acupoints are selected, including: Along the spinal processes: 1. 5 cm lateral to the posterior midline, below the spinous process of the 4th lumbar vertebra (L4). Posterior lower leg: At the junction of the gastrocnemius muscle bellies and tendons (typically corresponding to Cheng shan BL57, bilaterally). Disinfection: The skin over Cheng shan (BL57, bilateral), Dac hang shu (BL25, bilateral), and Tian shu (ST25, bilateral) is sterilized with alcohol swabs. Catgut Preparation: A sterile catgut suture is loaded into a disposable syringe needle tip. The needle (pre-disinfected with iodophor) is swiftly inserted into the acupoint. The practitioner manipulates it with lifting, thrusting, and rotating techniques until a strong de qi sensation (needling response) is achieved. Embedding: The catgut is deeply implanted into the subcutaneous layer using the syringe, followed by rapid needle withdrawal. Post-procedure Care: A cotton ball is pressed gently to ensure no bleeding, and the site is secured with medical tape to prevent infection [36]. The slowly absorbed catgut provides sustained stimulation to acupoints, regulating local qi-blood flow and promoting tissue repair. Particularly effective for chronic anal fissures by reducing sphincter spasm and improving microcirculation.

8. Pricking Therapy and Topical Herbal Application

Base Formula Preparation:50g Mangxiao30g Yue shi 20g Bai fan Grind the ingredients into a fine powder and mix thoroughly. For each treatment, 30g of the mixture is dissolved in 1000ml boiling water. The affected area is first fumigated with the warm steam, followed by a 15-minute sitz bath. This protocol is administered once daily for 7 days as one course, with 2 consecutive courses recommended. Pricking Technique: Acupoint Selection: Jiaji (EX-B2) points along the lumbar spine (L2) to sacral region (S4). Focus on tenderness-sensitive spots near the fissure. Procedure: Sterilize the skin and perform sequential needle pricks at selected sites. Follow-up: Re-evaluate after 7 days, assessing pain, bleeding, and wound healing. A second pricking session is performed if unhealed, with another follow-up in 7 days [37]. The herbal solution reduces edema and disinfects, while pricking releases local stagnation to enhance blood flow. Particularly effective for chronic fissures with marked sphincter hypertonia.

9. Sections and Prospects

Traditional Chinese Medicine (TCM) offers distinctive advantages in treating anorectal disorders. Rooted in its holistic philosophy, TCM emphasizes regulating the body's yin-yang balance and qi-blood harmony through therapies like acupuncture and herbal medicine to improve conditions and enhance recovery. TCM emphasizes a holistic approach and bodily equilibrium, utilizing herbal medicine, acupuncture, massage, and other therapies to regulate internal yin-yang balance, thereby achieving both therapeutic and preventive effects.

Modern medicine focuses on disease diagnosis and treatment, employing advanced medical technologies, pharmaceuticals, and surgical interventions as primary modalities. Integrated Traditional Chinese and Western Medicine represents an organic synthesis of both systems, combining their respective theories and diagnostic-therapeutic approaches to deliver personalized, comprehensive care for patients. This study proposes an innovative approach grounded in "holistic regulation," "self-adjustment," and "disease prevention", while integrating modern Western technology and pharmaceuticals, with the goal of enhancing clinical outcomes and improving patients' quality of life.

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