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Effect of Pressing Needle and Burying Needle Therapy on Urinary Retention after Circumferential Mixed Hemorrhoids Operation

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Abstract

Objective: To evaluate the effect of press needle embedded therapy on postoperative urinary retention in patients with circular mixed hemorrhoids. *Methods:* 160 patients who underwent circular mixed hemorrhoid surgery in the First People's Hospital of Longquanyi District Chengdu from May 2023 to September 2024 were randomly assigned to a treatment group and a control group. The treatment group received press needle embedded therapy (n=80, at six acupoints: Sanyinjiao, Zusanli, Pangguangshu, Zhongji, Guanyuan, and Yinlingquan), while the control group received moxibustion therapy (n=80). Urinary retention rate, time to first urination, and urination waiting time were observed in both groups. *Results:* The urinary retention rate in the treatment group was lower than that in the control group ($P < 0.05$), and the waiting time for first urination in the treatment group was shorter than that in the control group ($P < 0.05$), with statistically significant differences. There was no statistically significant difference in the time to first urination between the two groups ($P > 0.05$). *Conclusion:* Press needle embedded therapy is effective in preventing and treating postoperative urinary retention in mixed hemorrhoids, reducing the urinary retention rate, and shortening the urination waiting time. It is safe and worthy of clinical promotion.

Keywords

Press needle embedded therapy

Post-mixed hemorrhoid surgery

Urinary retention

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1. Introduction

Mixed hemorrhoids are the most common clinical disease with the highest incidence rate in anorectal surgery. According to the results of a national survey on anorectal diseases released in 2015, the prevalence rate of anorectal diseases among people aged 18 and above in China is as high as 50.1%, with hemorrhoids having the highest incidence rate, accounting for 98.08% of the total number of cases [1]. Circular mixed hemorrhoids represent a severe stage of mixed hemorrhoids, often

requiring surgical treatment, which may be followed by a series of postoperative complications, such as bleeding, edema, urinary retention, and pain. As one of the most common complications after mixed hemorrhoid surgery, the incidence of urinary retention can be as high as 20%–52% [2]. Due to the special anatomical structure of the surgical area for mixed hemorrhoids, postoperative urinary retention can easily exacerbate complications such as constipation, incision pain, and edema, which not only increases patient discomfort but also seriously affects postoperative recovery, physical and mental health, and prognosis. Therefore, effectively preventing and treating postoperative urinary retention and reducing its impact is an important issue that urgently needs to be addressed in clinical practice. In this study, press needle therapy was used to prevent urinary retention after mixed hemorrhoid surgery, and good clinical results were obtained. The report is as follows.

2. Materials and methods

2.1. Inclusion criteria

Referring to the "Chinese Guidelines for the Diagnosis and Treatment of Hemorrhoids" (2020 Edition), hemorrhoids can be classified into internal hemorrhoids, external hemorrhoids, and mixed hemorrhoids based on the location of the lesion [3]. Circular mixed hemorrhoids are a more severe type of hemorrhoids, characterized by the fusion of internal and external hemorrhoids, forming a circular or nearly circular bulge lesion that encircles the anus or most of its circumference. Inclusion criteria: meet the diagnostic criteria for mixed hemorrhoids in the "Chinese Guidelines for the Diagnosis and Treatment of Hemorrhoids" (2020 Edition) and simultaneously fulfill the following requirements: (1) The hemorrhoid core protrudes in a circular or nearly circular shape; (2) Select combined spinal and epidural anesthesia to complete the circular mixed hemorrhoid resection; (3) Age between 20 and 70 years old; (4) Able to accept and complete the entire process of press needle therapy, and able to complete follow-up visits; (5) All subjects have obtained informed consent.

2.2. Exclusion criteria

(1) Patients with other anorectal diseases such as anal fistula, perianal abscess, or inflammatory bowel disease; (2) Patients with malignant tumors or mental illnesses; (3) Patients with severe primary diseases, such as liver and kidney diseases, cardio-cerebrovascular diseases, or hematological system diseases; (4) Patients with prostatitis, prostatic hyperplasia, or urinary tract infection; (5) Patients who cannot undergo press needle therapy due to various reasons; (6) Patients who undergo catheterization before or during surgery.

2.3. Criteria for elimination, dropout, and termination

(1) Patients who refuse treatment or withdraw automatically midway; (2) Patients who fail to complete treatment according to the above-mentioned standard treatment plan; (3) Patients who do not cooperate with treatment; (4) Patients with incomplete data or loss to follow-up.

2.4. General information

A total of 160 patients undergoing mixed hemorrhoid surgery at the First People's Hospital of Longquanyi District, Chengdu City, from May 2023 to September 2024 were randomly assigned to a treatment group and a control group. The treatment group received press needle therapy (n=80, selecting six acupoints: Sanyinjiao, Zusanli, Pangguangshu, Zhongji, Guanyuan, and Yinlingquan). The control group received moxibustion treatment (n=80). The treatment group consisted of 42 males and 38 females, aged 21 to 78 years, with an average age of (46.36 ± 15.11) years. The control group consisted of 39 males and 41 females, showing no gender difference, aged 21 to 60 years, with an average age of (42.33 ± 9.95) years. There were no differences in general information, such as gender, height, weight, and BMI, between the two groups, which were not statistically significant ($P > 0.05$), as shown in **Table 1**. The average age of the treatment group was higher than that of the control group, and the difference was statistically significant ($P < 0.05$). This study was reviewed and approved by the Medical Ethics Committee of the First People's Hospital of Longquanyi District, Chengdu City (AF-KY-2023003).

Table 1. Comparison of basic patient information

Factor	Group	Mean±SD ($\bar{X}$±S)	F-value	P-value
Age (years)	Control	42.33 ± 9.95	3.985	0.048
	Treatment	46.36 ± 15.11		
Weight (kg)	Control	61.73 ± 9.84	1.487	0.224
	Treatment	63.87 ± 11.77		
Height (m)	Control	1.62 ± 0.07	0.84	0.773
	Treatment	1.62 ± 0.08		
BMI (kg/m²)	Control	23.53 ± 2.94	1.773	0.185
	Treatment	24.27 ± 4.02		

2.5. Therapeutic method

Both groups of patients underwent preoperative examinations, and surgery was performed after excluding surgical contraindications. The anesthesia method chosen was combined spinal and epidural anesthesia, and the surgical procedure was circumferential mixed hemorrhoid resection. The surgical team consisted of senior physicians, associate chief physicians, and above from our department. The anesthesia and surgical process strictly followed consistent surgical technique operating specifications to complete each surgical step. Both groups of patients received the same perioperative management measures. Routine urination promotion education was given before surgery, and patients were fasted and forbidden to drink for 6 hours postoperatively, then switched to a semi-liquid diet. On the second day after surgery, a regular diet was resumed. Both groups received the same amount of fluid replacement and nutritional support for other treatments. Daily postoperative treatments included sitting in a herbal bath and administration of Gangtai ointment, indomethacin, furazolidone suppositories, and other anal medications. During the treatment period, patients were instructed to avoid spicy and stimulating foods, get out of bed early, and promote gastrointestinal function recovery.

2.5.1. Treatment group

Thumb-tack needle therapy was applied to patients after circumferential mixed hemorrhoid surgery. After returning to the ward, patients received thumb-tack needle therapy at six acupoints: Sanyinjiao (SP6), Zusanli (ST36), Pangguangshu (BL28), Zhongji (CV3), Guanyuan (CV4), and Yinlingquan (SP9).

2.5.2. Control group

Moxibustion therapy was applied to patients after circumferential mixed hemorrhoid surgery. Patients received moxibustion treatment at the same acupoints as the treatment group after returning to the ward.

2.6. Observation indices

2.6.1. Time of first postoperative urination

This refers to the interval between the end of the surgery and the patient's first urination, recorded in minutes.

2.6.2. Urine waiting time for first postoperative urination

This refers to the time interval from when the patient feels the urge to urinate and is ready to urinate until the urine is smoothly discharged, measured in minutes.

2.6.3. Incidence of postoperative urinary retention

Postoperative urinary retention refers to a common complication where the bladder is full of urine, but the patient cannot urinate spontaneously after surgery. The ratio between the number of patients who cannot spontaneously empty their bladder or urinate within 12 hours after surgery and ultimately require catheterization, and the total number of patients who underwent surgery.

2.7. Statistical methods

SPSS 25.0 statistical software was used to process the data. Based on the type of collected data (such as measurement data, enumeration data, ranked data, etc.), corresponding statistical analysis methods were selected, including *t*-test, chi-square test, rank sum test, etc. The statistical quantity and *P*-value were calculated, and $P < 0.05$ was considered statistically significant for the tested difference.

3. Results

3.1. Adverse reactions in both groups

During the observation period, no adverse reactions such as needle sickness, broken needles, bleeding, skin irritation, or burns occurred in either group.

3.2. Comparison of first urination time and urination waiting time between the two groups

The first urination times for the two groups were 406.65 ± 227.00 and 392.08 ± 217.08, respectively, with P=0.684, indicating no statistically significant difference. The control group had a longer first urination waiting time compared to the treatment group, with P=0.014, indicating a statistically significant difference (**Table 2**).

3.3. Comparison of postoperative urinary retention between the two groups

All 80 patients in the treatment group were able to urinate independently, with no occurrence of urinary retention. In the control group, 5 patients had difficulty urinating and required indwelling catheters, while 75 patients did not require catheterization. The *P*-value was 0.023 ($P < 0.05$), indicating a statistically significant difference (**Table 3**).

4. Discussion

Among benign anorectal diseases, mixed hemorrhoids have the highest incidence rate, and surgery is the primary treatment method. However, factors such as surgical trauma, anesthetic effects, pain stimulation, mental stress, and local dressing compression can easily lead to urinary retention [4]. There are many factors that can cause urinary retention. Patient factors such as age, benign prostatic hyperplasia, and lower urinary tract symptoms can predispose to urinary retention. Surgical factors include operation time, type of anesthesia, and type of surgery [5]. Additionally, perioperative fluid infusion volume is also a risk factor for postoperative urinary retention [6]. If urinary retention is not promptly and properly managed, over-expansion of the bladder may lead to detrusor weakness and long-term urination dysfunction, which can affect postoperative wound healing and prolong hospital stay [7–8]. Urinary retention is a potentially avoidable postoperative complication, and understanding its risk factors is crucial for effective prevention. Clinically, there are various methods to treat postoperative urinary retention. Western medicine often adopts induced

Table 2. Comparison of first urination time and urination waiting time

Factor	Group	Mean±SD (min)	F-value	*P*-value
First Voiding Time (minutes)	Control	406.65 ± 227.00	0.166	0.684 (>0.05)
	Treatment	392.08 ± 217.08		
First Voiding Latency (minutes)	Control	1.40 ± 1.67	6.224	0.014 (<0.05)
	Treatment	0.85 ± 1.67		

Table 3. Comparison of the incidence of postoperative urinary retention

Factor	Group	Total	Control group n (%)	Treatment group n (%)	x^2-value	*P*-value
Whether to perform catheterization	Yes	5	5 (100.00)	0 (0.00)	5.161	0.023 ($P < 0.05$)
	No	155	75 (48.38)	80 (51.61)		

urination, oral administration of tamsulosin or injection of neostigmine, indwelling catheters, etc. Traditional Chinese medicine, on the other hand, intervenes through syndrome differentiation and treatment, employing various methods such as oral administration of Chinese medicine, filiform needle acupuncture, moxibustion, acupoint application, and auricular acupressure, all with satisfactory results.

From the perspective of traditional Chinese medicine, urinary retention is considered "urinary blockage" or "obstruction of urination." The term "urinary blockage" first appeared in the "Inner Canon of the Yellow Emperor" (Nei Jing). The Su Wen: Xuan Ming Wu Qi Pian proposes that "bladder dysfunction leads to urinary blockage, and lack of control leads to involuntary urination", referring to a series of symptoms mainly characterized by difficulty in urination or even complete urination blockage [9]. The Su Wen: Biao Ben Bing Chuan Lun Pian states, "When the bladder is diseased, urination is blocked", clarifying that the location of the disease is in the bladder [10]. The Su Wen: Ling Lan Mi Dian Lun says, "The bladder is like the official in charge of a state, storing body fluids, which can be excreted through qi transformation." Additionally, it has a close relationship with the lungs, spleen, kidneys, and triple warmer, and whether urine flows smoothly mainly depends on the qi transforming function of the bladder [11]. For patients undergoing anorectal surgery, the surgical injury not only directly consumes qi, blood, and body fluids but also leads to qi deficiency. Damaged qi can weaken the promoting function, further affecting the qi transforming function of the bladder. When the bladder loses its qi transforming ability, urine excretion becomes sluggish, leading to urinary retention.

Press needle, also known as subcutaneous needle embedding, belongs to the category of "static and long-lasting" acupuncture techniques. This technique evolved from the "floating needle" technique among the "Twelve Needling Techniques" described in the "Ling Shu: Guan Zhen" chapter of the Huangdi Neijing. The press needle is inserted superficially to stimulate wei qi (defensive qi) and promote the circulation of sun luo (minute collaterals). By keeping the needle in place for an extended period, it nourishes wei yang (defensive yang) and addresses both the root and manifestation of diseases, replenishing qi, invigorating blood, dredging meridians, and relieving pain [12]. Research results by Li Ronghua and others have shown that preoperative press needle embedding can effectively reduce the occurrence of urinary retention after PPH surgery under spinal anesthesia, confirming the effectiveness of press needle therapy for postoperative urinary retention [13].

In this study, six acupuncture points were selected for press needle embedding therapy: Sanyinjiao (SP6), Zusanli (ST36), Pangguangshu (BL28), Zhongji (CV3), Guanyuan (CV4), and Yinlingquan (SP9). Sanyinjiao is the intersecting point of the three yin meridians of the foot, and according to the "Great Compendium of Acupuncture and Moxibustion", it is indicated for the treatment of "urinary difficulty" [14]. Zusanli belongs to the Stomach Meridian of Foot-Yangming and is the "he-sea" point of the stomach meridian [15]. It can regulate the spleen and stomach, promote qi and blood circulation, improve systemic blood flow, and is particularly important for the generation of qi and blood related to the spleen and stomach. The "Golden Mirror of Medicine" clearly states that "Pangguangshu treats difficulty in urination." As a shu-stream point of the bladder meridian, Pangguangshu forms a "harmony of the anterior and posterior aspects" with Zhongji, a mu-collecting point of the Ren meridian. These two points correspond to each other internally and externally, directly related to the bladder itself, and together constitute the external transport hub of bladder qi [16]. When these two points are used synergistically, they can not only smoothen the qi dynamics of the bladder but also regulate the flow of water passages, thereby exerting significant effects on improving bladder dysfunction issues such as urinary difficulty. This is a classic combination approach in traditional Chinese medicine for regulating bladder function. Guanyuan, as the mu-collecting point of the small intestine and the intersection of the three yin meridians of the foot (Spleen Meridian of Foot-Taiyin, Kidney Meridian of Foot-Shaoyin, and Liver Meridian of Foot-Jueyin) with the Ren meridian, has core functions of cultivating and replenishing primal qi, warming and nourishing kidney yang, and strengthening and stabilizing the yuan qi. It is a commonly used point for genitourinary and various deficiency and consumptive diseases [17]. Yinlingquan is the he-sea point of the Spleen Meridian

of Foot-Taiyin. Its core functions include clearing water passages, draining dampness, and promoting urination. It is a key point in clinical treatment for various syndromes caused by internal retention of dampness. Its efficacy is recorded in many ancient texts. For example, the "Song of Acupoints for Miscellaneous Diseases" states that "Yinlingquan is effective for urinary difficulty", and the "Rhymed Formulas for Important Points in Acupuncture" states that "Yinlingquan opens and clears water passages", both clearly indicating that Yinlingquan can effectively treat urinary retention [18].

This study explores the effect of intradermal needle therapy based on meridian theory in traditional Chinese medicine on postoperative urinary retention in patients with mixed hemorrhoids. Guided by the meridian theory in traditional Chinese medicine, the above six acupoints are selected for combined use. Acupuncture is performed on the abdominal acupoints, back acupoints, and remote acupoints of limbs to achieve the effect of nourishing qi and nourishing the kidneys, dredging meridians, regulating the liver, kidneys, and spleen, and harmonizing qi and blood and dredging water qi.

In summary, the results of this study show that intradermal needle therapy is effective in preventing and treating postoperative urinary retention in mixed hemorrhoids, reducing the rate of indwelling catheters, shortening the waiting time for urination, and having high safety. It is worthy of clinical promotion. However, this study was conducted in only one medical institution with a limited number of patients, requiring further in-depth research.

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Special Research Topic of Science and Technology of Sichuan Provincial Administration of Traditional Chinese Medicine (2024MS482): Clinical Study on the Treatment of Anal Itching of Blood Deficiency and Wind-dryness Syndrome by Self-made Yangxue Runfu Zhiyang Decoction Plus or Minus for Hip Bath Combined with External Application of Moisturizer.

Disclosure statement

The author declares no conflict of interest.

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