ORIGINAL RESEARCH

Improvement of Diarrhea-Type Defecation Habit Changes and Other Complications After Dixon Surgery for Rectal Cancer With Discriminative Chinese Herbs Combined With Levator Ani Muscle Training

Wei Chen, MM; Wenchun Yao, MM; Wenwu Du, BM

ABSTRACT

Objective • To evaluate the clinical efficacy of discriminative Chinese herbs combined with levator ani muscle training in improving diarrhea-type defecation habit changes and other complications after Dixon surgery for rectal cancer.

Methods • 200 patients with Dixon surgery for rectal cancer who were hospitalized in the Department of Gastrointestinal Surgery of Suining Central Hospital from June 2021 to December 2022 were selected, and all patients were divided into 100 cases each in the control and experimental groups by the random number table method. The control group was taken *Live Combined Bifidobacterium and Lactobacillus Tablets* and *Montmorillonite Powder* orally after surgery, and the experimental group was treated by discriminative Chinese herbs combined with levator ani muscle training after surgery. Both groups adhered to treatment until 3 months postoperatively. The anal rectal pressure was assessed in both groups at 3 months postoperatively, the anal function and European Organization for Research and Treatment of cancer quality of life questionnaire-colorectal cancer 30 (EORTC QLQ-C30) score before and after treatment were compared between the two groups and the incidence of other perianal complications at 3 months postoperatively was counted.

Results • After treatment, the anal canal rest pressure (ARP) in the experimental group (50.80±7.80) mmHg was higher than that in the control group (46.64±7.92) mmHg ($P < .05$), and the anal canal maximum contraction pressure (AMCP) in the experimental group (89.81±19.39) mmHg was higher than that in the control group (72.02±17.27) mmHg ($P < .05$). Before treatment, there were 0, 14, 34, 34 and 52 persons with excellent, good, general and poor anal function in the control group and 0, 17, 28 and 55 persons in the experimental group, respectively, after treatment, there were 3, 36, 50, and 11 persons with excellent, good, general and poor anal function in the control group and 12, 44, 42 and 2 persons in the experimental group, respectively, after treatment, the anal function grade improved in both groups, and the experimental group was better than the control group ($P < .05$). After treatment, the functional modules and overall health scores of the EORTC QLQ-C30 scale increased in both groups compared with those before treatment, and the experimental group was higher than the control group ($P < .05$), after treatment, the frequency of symptom modules in the experimental group was lower than that before treatment and lower than that in the control group after treatment ($P < .05$). Within 3 months after surgery, the total incidence of other perianal complications in the control group was 16.00% (16/100), which was higher than the total incidence of other perianal complications in the experimental group 7.00% (7/100) ($P < .05$).

Conclusion • The treatment of diarrhea-type defecation habit changes after Dixon surgery for rectal cancer with discriminative Chinese herbs combined with levator ani muscle training is effective in enhancing patients' anal function, relieving diarrhea symptoms, improving survival quality and reducing the risk of other perianal complications. (*Altern Ther Health Med.* 2024;30(1):307-313).

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INTRODUCTION

Colorectal cancer became the third most common cancer and the second most common cause of cancer death worldwide, according to the latest global cancer burden data for 2020.[1] The incidence of the disease varies widely by age, and the aging of the population also has a more pronounced effect on its onset, with a median age at diagnosis of 63 years. With the general prevalence of Westernized lifestyles and the increased

prevalence of colorectal cancer screening in recent years, rectal cancer, in general, is also showing a younger age.[2] Surgical resection is the main treatment for rectal cancer, and Miles surgery has been the gold standard for the treatment of rectal cancer for nearly 100 years. However the surgery requires a permanent abdominal colostomy, which causes mental burden, life, and social inconvenience to the patient. With the development of the national economy and the improvement of living standards, people pay more attention to having a good quality of life while prolonging their survival period. As a result, radical rectal cancer surgery with preservation of the anus has gained increasing attention in the surgical community. However, due to the traction and injury of the perianal nerve and muscle tissue during the operation and the reduction of the volume of the rectal and anal canal after the operation, the defecation function damage with the main clinical manifestations of increased defecation frequency, sense of urgency, sense of endless defecation, Diarrhea, incontinence, etc. may occur after the operation, the degree and duration of the disease vary from person to person, which has brought some problems to the patient's daily life and weakened the patient's confidence in the recovery of their own health.[3] Unfortunately, modern medicine has paid less attention to such conditions and has mostly studied and intervened in anterior resection syndrome (ARS). Still, the means of treatment and its efficacy are limited. Previous studies have shown that TCM has certain efficacy in treating these conditions. Still, the number of TCM treatment studies is relatively small, and the evaluation criteria vary, lacking standardized treatment and efficacy evaluation criteria. This study starts with the effect of Chinese herbal on patients with diarrhea-type defecation habit change after Dixon surgery for rectal cancer and its impact on other complications. The core disease mechanism is deficiency of vital energy, residual toxin not yet cleared, and imbalance of Qi mechanism, etc., with the basic treatment method is to strengthen the body resistance to eliminate pathogenic factors and regulate the Qi mechanism, and combining disease differentiation, syndrome differentiation to treat such patients comprehensively, it is also combined with modern medical levator ani muscle training, aiming to improve a series of symptoms of defecation dysfunction and improve the quality of survival of patients after Dixon surgery for rectal cancer.

MATERIALS AND METHODS

Research Object

In this study, 200 patients with diarrhea-type defecation habit change after Dixon surgery for rectal cancer hospitalized in Suining Central Hospital from June 2021 to December 2022 were studied and randomly divided into two groups: a control group and an experimental group, and the sample size was calculated as 100 cases per group by using PASS software through expected efficiency. The two groups were balanced in terms of baseline information such as tumor pathological classification, Dukes' stage, and traditional Chinese medicine (TCM) differentiation classification ($P > .05$). (Table 1).

Table 1. Baseline information for both groups

Items	Control group (n = 100)	Experimental group (n = 100)	t/χ^2	*P* value
Gender			0.988	.320
Male	58	51		
Female	42	49		
Age (years old)	54.22±7.59	52.08±8.19	1.916	.057
Distance from the lower edge of the tumor to the dentate line (cm)	5.32±1.17	5.22±1.13	0.615	.539
Pathological classification			1.220	.269
Adenocarcinoma	85	79		
Mucinous adenocarcinoma	15	21		
Dukes stage			1.166	.761
Stage A	16	13		
Stage B	36	40		
Stage C	39	35		
Stage D	9	12		
TCM differentiation classification			1.285	.864
Spleen-stomach deficiency type	35	37		
Spleen-kidney-yang deficiency type	24	19		
Zong-qi descending type	15	19		
Liver-depression offending-spleen type	17	15		
Dampness-heat type	9	10		
Education level			3.972	.137
≤ Elementary school	8	11		
Junior High School - High School	61	70		
≥ University	31	19		

Western medical diagnostic criteria for Diarrhea

Refer to the "Chinese diarrheal disease diagnosis and treatment program". The clinical manifestations are increased bowel movements, >15 times/day in cases with obvious increase in bowel movements, >3-4 times/day in cases with insignificant increase in bowel movements, thin, unshaped stools, irregular bowel movements, and exclusion of other diseases such as enteritis and dysentery caused by foreign pathogenic bacteria.

TCM syndrome differentiation criteria for Diarrhea

According to the "Guidelines for the Treatment of Malignant Tumors in Chinese Medicine", rectal cancer was divided into the following five types. (1) Spleen-stomach deficiency type: Poor appetite, flatulence after meals, sallow complexion, shortness of breath and weakness, vague pain in the abdomen, loose stools, blood in the stool or with mucus and blood in the stool, swollen tongue body, greasy fur, slow and weak pulse. (2) Spleen-kidney-yang deficiency type: Lustreless face, cold chills limbs, clear and thin discharge, dry without thirst, abdominal distension and limb swelling, Diarrhea after bowel ringing, slightly relieved after diarrhea, the white tongue coating, swollen tongue body, deep and thin pulse. (3) Zong-qi descending type: Fatigue, dizziness, abdominal distension and pain, frequent defecation, heavy fall of the anus, or prolapse of anus, or turbid urination, or prolonged Diarrhea that cannot be stopped, poor appetite, pale tongue, weak pulse. (4) Liver-depression offending-spleen type: Intestinal tinnitus, abdominal pain, Diarrhea, Diarrhea must be abdominal pain, thin white tongue coating, and the pulse is wiry or slow. (5) Dampness-heat type: Abdominal distension, abdominal pain, pain with a fixed location, refusal to press, pus and blood in the stool, loose and unpleasant stools, rectal tenesmus, poor appetite, bitter and dry mouth, red tongue or petechiae, yellow and greasy coating, wiry, rolling, rapid pulse.

Inclusion Criteria

(1) All patients underwent the Dixon procedure at our hospital and had a change in diarrhea-type defecation habits after surgery. (2) 18-65 years old. (3) Survival period ≥ 6 months. (4) Cognitive and mental normalcy and unimpeded communication. (5) Voluntary participation in the study, good compliance, taking medication as prescribed, and signing the relevant consent form.

Exclusion Criteria

(1) Poor general condition and serious underlying diseases or other tumors. (2) Patients with chronic constipation, inflammatory bowel disease, irritable bowel syndrome, and other intestinal diseases that may affect bowel function before developing rectal cancer. (3) Peritonitis caused by perforation with intestinal obstruction or tumor, excluding complications such as anastomotic leak and anastomotic bleeding. (4) Patients taking drugs that may affect bowel function, such as morphine, for a long time. (5) Combined tumor metastasis. (6) Drug allergy. (7) During pregnancy and lactation. (8) Those who failed to finish the post-treatment as scheduled for various reasons. (9) Those who fail to complete the treatment as scheduled for various reasons in the middle.

Treatment Options

Control group: After surgery, *Live Combined Bifidobacterium and Lactobacillus Tablets* were administered orally every 8 h within 24 hours, 0.5 g per dose, specification 0.5 g × 12 tablets, Inner Mongolia Shuangqi Pharmaceutical Co., Ltd., S19980004; *Montmorillonite powder* was administered orally, 3 times a day, 3 g each time, 3 g × 15 sachets, Bofu-Ipsen (Tianjin, China) Pharmaceutical Co., Ltd., H20000690. Adhere to the medication until 3 months postoperatively.

Experimental group: postoperative treatment with oral discriminative Chinese herbs and combined with levator ani muscle training. That was to add or subtract according to syndrome differentiation on the basis of the core prescription (self-prepared Fuzheng Jiedu Prescription, 30 g raw Huangqi, 15 g Dangshen, 15 g raw Baizhu, 15 g Tofuling, 15 g Tengligen). Specific prescription of syndrome differentiation and treatment: Spleen-stomach deficiency type supplemented with Buzhong Yiqi Decoction plus or minus, i.e., add 30 g fried Baizhu, 9 g Shengma, and 9 g Chaihu as appropriate. Spleen-kidney-yang deficiency type supplemented with Sishen pill plus or minus, i.e., add 15 g Buguzhi, 6 g Wuzhuyu, 15 g Wuweizi, and 6 g Roudoukou. Zong-qi descending type supplemented with Shengxian Decoction plus or minus, i.e., add 10 g Chaihu, 9 g Shengma, and 9 g Zhimu as appropriate. Liver-depression offending-spleen type supplemented with Tongxieyao Formula plus or minus, i.e., add 15 g Baishao 15 g Fangfang as appropriate. Dampness-heat type supplemented with Gegen Qinlian Decoction plus or minus, i.e., add 15 g Gegen, 6 g Huanglian, and 10 g Huangqin as appropriate. The herbs were obtained from our herbal pharmacy. The decoction was taken orally as a daily dose when symptoms occurred within 3 months after surgery. Specific method of levator ani muscle training: performed 2 weeks after surgery. Ask the patient to take the chest and knee position when inhaling, lift the anus upward with force, tighten the anus, last 2 s and then relax, alternate rhythmically, each time 200 times continuously, exercise once a day in the morning, afternoon and before bedtime, adhere to the exercise until 3 months after surgery.

Observation Items

Anal rectal pressure. After treatment, the ZGJ-D3 anal pressure detector and pressure analysis software system produced by Hefei Aoyuan Technology Development Co., Ltd. were used to record the patient's anal canal rest pressure (ARP, normal value 50~70 mmHg) and anal maximum contraction pressure (AMCP, normal value 100~180 mmHg) using perfusion manometry.

Anal function. Referring to "Modern anorectal tumor surgery", the diarrhea-related symptoms of patients before and after treatment were scored and evaluated. The assessment items included five items: defecation, control ability, sensory function, number of bowel movements, and duration of bowel movement, each with 0-2 points, and the total score of 10-9 as excellent, 8-7 as good, 6-5 as general, and 4-0 as poor.

European Organization for Research and Treatment of cancer quality of life questionnaire-colorectal cancer 30 (EORTC QLQ-C30, Version 3) score. It includes 5 functional modules (body, role, social, cognitive, emotional), 1 overall health module, and 3 symptom modules (fatigue, pain, nausea and vomiting). Each module subscale was first scored separately as specified and linearly transformed to standardized values such that all individual items scored between 0 and 100. Higher scores on the functional and general health modules indicate better quality of life, the opposite is true for the symptoms module.

Other perianal complications. The incidence of other perianal complications, such as anal itching, perianal eczema, perianal erosion, and perianal abscess within 3 months after surgery, was compared between the two groups.

Statistical analysis

Statistical Product and Service Solutions (SPSS) 22.0 (IBM, Armonk, NY, USA) was applied to analyze the obtained data. Normality tests for the measurement data ($\bar{x} \pm s$) were performed by one-sample Kolmogorov-Smirnov analysis, satisfying the normal distribution implementing independent (difference in mean values between groups) or paired (difference in mean values before and after treatment in the same group) samples *t* test. Count data [n (%)] were tested by χ^2. $P < .05$ as a statistically significant difference.

RESULTS

Anal rectal pressure

After treatment, the anal canal rest pressure (ARP) in the experimental group (50.80±7.80) mmHg was higher than that in the control group (46.64±7.92) mmHg

Figure 1. Anal rectal pressure (mmHg)

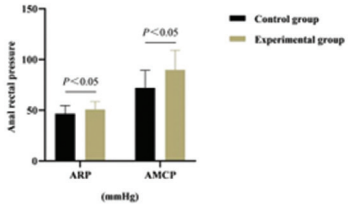
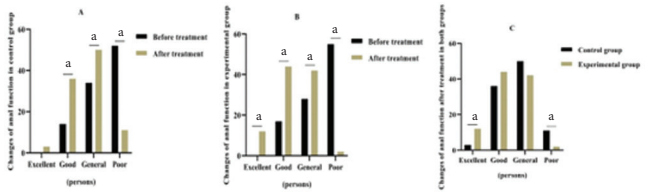
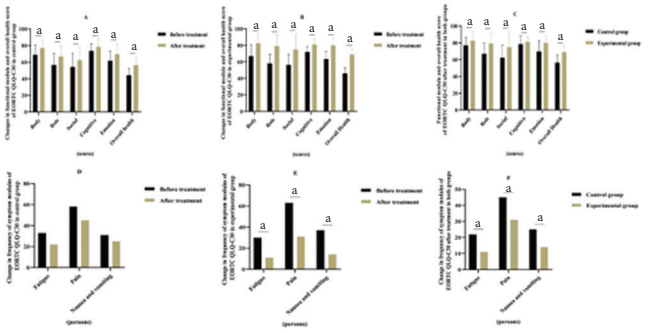


Figure 2. Anal function (persons). (A) Changes of anal function in control group. (B) Changes of anal function in experimental group. (C) Changes of anal function after treatment in both groups.



[a]$P < .05$.

Figure 3. EORTC QLQ-C30 score. (A) Changes in functional module and overall health score of EORTC QLQ-C30 in control group (scores). (B) Changes in functional module and overall health score of EORTC QLQ-C30 in experimental group (scores). (C) Functional module and overall health score of EORTC QLQ-C30 after treatment in both groups (scores). (D) Change in frequency of symptom modules of EORTC QLQ-C30 in control group (persons). (E) Change in frequency of symptom modules of EORTC QLQ-C30 in experimental group (persons). (F) Change in frequency of symptom modules of EORTC QLQ-C30 after treatment in both groups (persons).



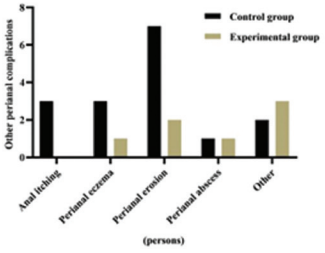
[a]$P < .05$.

($P < .05$), and the anal canal maximum contraction pressure (AMCP) in the experimental group (89.81±19.39) mmHg was higher than that in the control group (72.02±17.27) mmHg ($P < .05$). (Figure 1)

Anal function

Before treatment, there were 0, 14, 34, 34 and 52 persons with excellent, good, general and poor anal function in the control group and 0, 17, 28 and 55 persons in the experimental group, respectively, after treatment, there were 3, 36, 50, and 11 persons with excellent, good, general and poor anal function in the control group and 12, 44, 42 and 2 persons in the experimental group, respectively, after treatment, the anal function grade improved in both groups, and the experimental group was better than the control group ($P < .05$). (Figure 2)

Figure 4. Other perianal complications (persons)



EORTC QLQ-C30 score

After treatment, the functional modules and overall health scores of the EORTC QLQ-C30 scale increased in both groups compared with those before treatment, and the experimental group was higher than the control group ($P < .05$), after treatment, the frequency of symptom modules in the experimental group was lower than that before treatment and lower than that in the control group after treatment ($P < .05$). (Figure 3)

Other perianal complications

Within 3 months after surgery, the total incidence of other perianal complications in the control group was 16.00% (16/100), which was higher than the total incidence of other perianal complications in the experimental group 7.00% (7/100) ($P < .05$). (Figure 4)

DISCUSSION

The Dixon surgery is the most widely used anus-preserving procedure in clinical practice, and its 5-year survival and local recurrence rates have been shown not to differ significantly from those of the Miles procedure. This surgery preserves the intact levator muscle, anal sphincter and its associated innervated nerves, as well as the lower rectum and anal canal, allowing for a complete defecation response, but, surgery removes most of the rectum, resulting in a short period of dysfunction of the anal sphincter, which reduces the stool storage capacity and the function of the rectal defecation reflex, and the defecation sensation is affected to varying degrees, and the clinical manifestations of this abnormal defecation function are generally recognized and treated in modern medicine in terms of the occurrence of Diarrhea, fecal incontinence, and ARS after surgery.[4] In Chinese medicine, it is classified as Diarrhea for identification and treatment. The basic pathogenesis is Qi deficiency, spleen deficiency and dampness, resulting in intestinal dysfunction, so treatment should be based on benefiting Qi and strengthening the spleen, removing dampness and stopping Diarrhea. However, the six hollow viscera must keep its unobstructed, and most of the dysfunction of the six hollow viscera has evil stagnation.

Therefore, in the treatment of post-operative Diarrhea in rectal cancer, we should not just take tonic, to avoid keeping the evil in the body and not getting out, we should appropriately treat incontinent syndrome with the dredging method.[5] Treatment should emphasize the use of Huangqi to tonify Qi, with the self-designed Fu Zheng Jiedu Formula as the basic formula, in which raw Huangqi is good at both tonifying and raising Qi, and its texture is light, containing oxygen, has the wonderful effect of seeking the same Qi as the Qi in the chest; Dangshen and Baizhu can strengthen the spleen and Qi, and improve the immunity of the body;[6,7] Tufuling and Tengligen detoxify and dehumidify.[8] Besides, the Diarrhea after rectal cancer has a long duration, and it should be considered as prolonged Diarrhea, with deficiency symptoms such as weakness of the spleen and stomach, deficiency of kidney yang, and Zong-qi descending type, etc., are more common. In this study, we treated this disease according to syndrome differentiation and flexible medication.

Spleen-stomach deficiency type

The origin of Diarrhea is always due to the spleen and stomach. Diarrhea after rectal cancer surgery is mainly due to qi deficiency, and the lesion is mainly in the spleen. If the spleen is deficient in transportation, the small intestine is not able to divide and secrete turbidity, and the large intestine is unable to transfer and transform, water becomes wet and grain becomes stagnant, and mixed, then Diarrhea occurs. Treatment should be based on benefiting Qi, strengthening spleen, and helping to stop Diarrhea. Therefore, in this study, we administered Buzhong Yiqi Decoction plus or minus for these patients. In this formula, fried Baizhu is sweet, warm and beneficial to Qi, tonifying the spleen and stomach; Chaihu/Shengma raise yang and lift prolapsed, assisting Huangqi to lift prolapsed and raise.[9,10] Pharmacology has demonstrated that the formula Baizhu also inhibits the intestinal tube's stimulation by acetylcholine and other stimuli to reduce intestinal spasm.[11]

Spleen-kidney-yang deficiency type

The Medical Prescription Explanatory Collection records that "chronic diarrhea is caused by the failure of the kidney and fire, and cannot be exclusively responsible for the spleen and stomach.", also, rectal cancer is mostly seen in elderly patients, and the deficiency of kidney yang can't warm the whole body, which can also lead to frequent stools and thin and insubstantial quality. Sishen Pill was selected as a prescription, in which Buguzhi is spicy, bitter and hot, can nourish the fire of the door of life, is an essential medicine for replenishing the fire and benefiting the soil, and also has the activity of improving intestinal inflammation and anti-tumor;[12] Roudoukou warms the spleen and kidney, astringes the intestines and stops Diarrhea;[13] Wuzhuyu warms the spleen and stomach while dispersing cold and dehumidifying;[14] Wuweizi is sour and warm, strengthens the kidney and astringes the essence, astringes and stops Diarrhea;[15] Shengjiang disperses cold; Dazao nourish the spleen and stomach. All drugs can be used together to warm the kidney and spleen, and naturally relieve Diarrhea.

Zong-qi descending type

The lung governs qi, and stands in an interior-exterior relationship with the large intestine. The function of rectal bowel control depends on the function of lung qi. For Diarrhea caused by weakness of lung qi and weakness of consolidation after rectal cancer surgery, which leads to downward trapping of zong qi and loss of restraint of intestinal internal qi, the selected formula is Shengxian Decoction plus or minus. In this formula, Zhimu is cool and moist, which can control the heat of Huangqi;[16] Chaihu is the medicine of Shaoyang, which can induce the trapped atmosphere to rise from the left;[9] Shengma is the medicine of Yangming, which can induce the trapped atmosphere to rise from the right.[10] The combination of these herbs can significantly improve the bowel control ability of post-operative rectal cancer patients by tonifying Qi, strengthening the spleen, ascending the spleen and stopping Diarrhea.

Liver-depression offending-spleen type

The liver is responsible for draining and regulating the qi of the whole body. Suppose the rectal cancer patients are worried, anxious and fearful after surgery. In that case, emotional disorders cause liver qi stagnation, Qi disorder, which can also lead to the large intestine Qi flow, descend abnormally, and become Diarrhea. For transverse dysfunction of liver Qi, resulting in loss of spleen health, dysregulation of elevation, and indistinguishability of clear and turbid, with abdominal pain and Diarrhea, intestinal tinnitus, and loose stools, and then the wood was suppressed, the earth was supported, the liver was cleared, and the spleen was strengthened, and the Tongxieyao Formula was used for treatment. Adding Baishao as appropriate to soften the liver and nourish yin, relieve urgency and pain, and prevent liver depression from multiplying the spleen and injuring yin with prolonged Diarrhea;[17] The addition of Fangfeng, where appropriate, is pungent and dispersing to regulate the liver, so that liver Qi will no longer multiply the spleen, and to soothe the spleen and promote clearing, so as to overcome dampness and stop Diarrhea.[18] The combined use of these herbs can tonify the spleen to overcome dampness and stop Diarrhea, and soften the liver to regulate Qi and stop pain, so that the spleen is healthy and the liver is in harmony, and the pain and Diarrhea will stop.

Dampness-heat type

After Dixon surgery for rectal cancer, the spleen and stomach are weak and unable to transport and transform, resulting in internal growth of dampness and turbidity. If chemotherapy and radiotherapy are encountered, dampness and heat toxins will stagnate in the intestines, which can lead to dampness and heat stagnation, resulting in qi-blood struggle, loss of Qi and Yin, and inherent abdominal pain and Diarrhea. The selected formula is Gegen Qinlian Decoction plus and minus, in which Gegen is pungent and

cooling, which can reduce fever and stop Diarrhea;[19] Huangqin is bitter and cold, which can Diarrhea actual fire and remove damp-heat;[20] Huanglian is bitter and cold, which can clear heat and dry dampness, and remove fire and detoxification.[21] Used together, the whole formula can clear heat and dampness, dispel pain and relieve Diarrhea. Pharmacology has shown that Gegen Qinlian Decoction can improve intestinal function and inhibit pathogenic bacterial activity and inflammatory response.[22]

Anastomotic edema and prolonged retention of the anastomotic staple to irritate the intestinal wall often occur after rectal cancer preservation surgery, leading to the development of neurogenic Diarrhea. Both ARP and AMCP measurements are important parameters for the objective evaluation of anal self-control function. Of these, the ARP primarily represents the function of the internal sphincter in the resting state, and its pressure differential is a passive barrier to fecal and gas spillage from the rectum.[23] AMCP mainly represents the external sphincter function, which reflects anal self-control during stress.[24] Vial et al. found that after anal surgery, the anatomical continuity of the patient's sphincter is interrupted, which consequently affects the anal canal closure function and anal incontinence occurs, and the patient's anorectal manometry results are mainly characterized by a decrease in ARP and AMCP.[25] In this study, patients in the experimental group were asked to perform levator ani muscle training at the same time on the basis of discriminative Chinese herbs, and after treatment, ARP and AMCP were significantly improved. This may be due to the fact that herbal treatment can improve the patient's constitution and strengthen his immunity by "strengthen the body resistance to eliminate pathogenic factors and regulate the Qi mechanism", which can help to support the body and stop Diarrhea, and the contraction of the levator ani muscle training by consciously contracting and stretching the levator ani muscle, which helps the muscle fascia and ligament of the pelvic floor to drive the anal sphincter to play a contraction role and effectively control defecation. Moreover, long-term contraction exercise of the levator ani muscle can also promote the absorption and decompression of traumatic edema in patients, reduce the impact of local inflammatory edema on the closing mechanism of the anal sphincter, and achieve effective control of defecation.[26] Similarly, Wu et al. used pelvic floor muscle exercise to treat diarrhea-type defecation habit changes after anal preservation surgery for rectal cancer and assessed the efficacy using anorectal manometry data, which ultimately found that patients who combined pelvic floor muscle exercise showed significant clinical benefit in terms of anorectal manometry data and ARS symptoms compared to a blank control group.[27] Rectal cancer patients themselves have a low quality of life. In addition, the Dixon procedure often involves multiple organs or tissues of the patient, and there is a possibility of postoperative complications, which also affects the quality of life of the patient to a certain extent after the operation. The life quality in the experimental group patients improved significantly after treatment, and other complications in the perianal area were lower than those in the control group. It indicates that discriminative Chinese herbs combined with levator ani muscle training can improve a series of abnormal defecation symptoms in patients after Dixon surgery for rectal cancer, and can reduce the occurrence of other perianal complications to a certain extent and improve the quality of life of patients.

SUMMARY

Currently, there is no mature and effective treatment in Western medicine for symptoms related to diarrhea after Dixon's surgery for rectal cancer, so patients are more distressed for a period of time after surgery. Chinese medicine has a good ability to regulate functional diseases, analyzing the etiology and pathogenesis of early diarrhea-related symptoms after surgery and treating symptoms from the perspective of Chinese medicine, as well as combining with Western medical treatment protocols, may be a new idea and method for clinical intervention of diarrhea-related symptoms after Dixon's surgery for rectal cancer. Moreover, the results of this study confirmed that the treatment of diarrhea-type defecation habit changes after Dixon surgery for rectal cancer with discriminative Chinese herbs combined with levator ani muscle training is effective in enhancing patients' anal function, relieving diarrhea symptoms, improving survival quality and reducing the risk of other perianal complications, which showed the potential application prospect of the discriminative Chinese herbs combined with levator ani muscle training in this study. The shortcomings of this study include: (1) single-center empirical summary study, poor representativeness and popularization of the treatment plan; (2) the number of cases enrolled in each type of evidence is relatively small, and the number of uneven distribution; (3) the observation time is relatively short, the lack of dynamic analysis of indicators, etc., which is still to be confirmed by more basic experiments and clinical studies.

DATA AVAILABILITY STATEMENT

All data used or analyzed in the submitted article are available from the associated author.

CONFLICT OF INTEREST

All authors have no conflict of interest, financial or otherwise.

AUTHOR CONTRIBUTIONS

WC, WY and WD designed the study and performed the experiments, WC and WY collected the data, WD analyzed the data, WC, WY and WD prepared the manuscript. All authors read and approved the final manuscript. Wei Chen and Wenchun Yao contributed equally to this work

SCRIENTIFIC RESEARCH PROJECT

Observation on the clinical efficacy of oral administration of traditional Chinese herbs combined with levator ani muscle training to improve the anterior resection syndrome (acute incontinence type) and other complications after rectal cancer surgery (Project Number: SN2021B01).

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