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Therapeutic Effect of Indometacin, Furazolidone, and Cuscohygrinolis α-Acetylbenzoacetate Suppository Combined with Fuzhiqing Ointment in Treating Anal Fissure: An Observation of 98 Cases

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Abstract: *Objective:* To assess the efficacy of the combined application of indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository and Fuzhiqing ointment in treating patients with anal fissures. *Methods:* A total of 98 patients diagnosed with anal fissures between January 2021 and December 2022 were selected as the study participants. They were randomly assigned to two groups using the random number table method. The control group received treatment with indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository, while the observation group underwent a combination treatment involving indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository and Fuzhiqing ointment. The two groups were compared in terms of pain level, wound bleeding, and changes in wound granulation health. Additionally, the time for symptom disappearance, improvement in anal function, and occurrence of related adverse reactions were recorded. *Results:* The observation group exhibited lower pain score, wound bleeding score, and wound granulation health score compared to the control group ($P < 0.05$). The observation group also showed shorter times for the disappearance of symptoms as well as a quicker time for complete anal fissure healing compared to the control group ($P < 0.05$). No relevant adverse reactions were observed in any of the patients. *Conclusion:* The addition of Fuzhiqing ointment to the treatment of patients with anal fissures using metronidazole ester suppositories promotes the improvement of disease symptoms and enhances the health of wound granulations. This combined treatment demonstrates a positive effect on the overall healing process of the disease, indicating a broad application value.

Keywords: Anal fissure; Metronidazole ester suppository; Fuzhiqing ointment; Wound granulation health; Blood in the stool

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1. Introduction

Anal fissure, a common anal disease characterized by a linear or oval-shaped tear in the skin distal to the dentate line of the anal canal, manifests through symptoms such as anal pain, blood in the stool, and difficulty

in defecation [1]. Traditional treatment approaches encompass local drug treatment and surgical interventions. However, these methods exhibit certain limitations and potential side effects. In recent years, a novel treatment method involving the combined application of metronidazole ester suppository and Fuzhiqing ointment has gained widespread acceptance in treating anal fissures [2].

Indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository, a local anti-inflammatory drug with analgesic, anti-inflammatory, and hemostatic properties, has demonstrated effectiveness in alleviating pain symptoms and promoting the healing of anal fissures [3]. Concurrently, Fuzhiqing ointment, a traditional Chinese medicine (TCM) preparation, exhibits qualities such as heat and detoxification clearance, putrefaction removal, muscle growth promotion, swelling reduction, and pain relief. This ointment contributes to enhancing local blood circulation, reducing inflammatory reactions, softening scar tissue associated with anal fissures, and facilitating wound healing [4].

The purpose of this study is to investigate the application effect of combining indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository with Fuzhiqing ointment in treating anal fissures. The aim is to offer patients a more effective and safer treatment option, thereby enhancing their quality of life and promoting recovery.

2. Materials and methods

2.1. General information

The subjects of observation in this study were selected from patients diagnosed and treated for anal fissures at the anorectal clinic of Yuxi People's Hospital. A total of 98 cases were included, comprising 24 males and 64 females, with a disease duration ranging from one month to two years. The treatment period extended from January 2021 to December 2022. Using the random number table method, patients were grouped into the control and observation groups, each consisting of 49 participants.

The control group consisted of 11 males and 38 females, with a mean age of 48.45 ± 2.26 years and a mean disease duration of 9.74 ± 1.05 months. According to anal fissure classification, 31 cases were grade II and 18 cases were grade III. The observation group comprised 13 males and 26 females, with a mean age of 48.52 ± 2.33 years and a mean disease duration of 9.86 ± 1.13 months. According to anal fissure classification, 35 cases were grade II and 14 cases were grade III. When comparing the data presented in the study between the two groups of patients with anal fissures, no significant difference was observed ($P > 0.05$).

Inclusion criteria included individuals who met the diagnostic criteria for anal fissure, with a normal appearance and function of the anus with no history of relevant surgical treatment, a disease duration exceeding 6 weeks, evident pain symptoms before and after defecation in the middle position behind the anus, aggravated symptoms after defecation, and anal fissure stage II-III with good medication compliance.

Exclusion criteria included individuals with perianal abscess, rectal mucosal prolapse, and other rectal diseases, severe organic diseases, critical conditions making clinical efficacy and safety difficult to judge, and pregnant or lactating women.

2.2. Method

Subjects in the control group were treated with indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository, one pill administered twice a day, and placed into the anus for two consecutive weeks.

Subjects in the observation group were treated with indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository and Fuzhiqing ointment. One metronidazole suppository was dipped in an

appropriate amount of Fuzhiqing ointment, and the medicine was placed into the anus twice a day, continuously for two weeks.

During the treatment process, patients in both groups refrained from using other drugs and avoided consuming spicy and irritating foods.

2.3. Observation indicators

(1) Statistical study on improvement in pain level, wound bleeding, and granulation health: The study encompassed the evaluation of pain level, wound bleeding, and granulation health improvement in both patient groups. The patient's pain level was assessed before and after medication using a digital simulation scoring method, with a total score of 10 points. A lower score indicated greater symptom improvement. Wound bleeding and granulation health were evaluated using a five-point scoring method, ranging from 0 to 4. A score of 0 indicated no bleeding symptoms, while a score of 4 indicated persistent bleeding. For granulation health, a score of 0 represented a healthy state, while a score of 4 indicated severe edema, necessitating medical intervention for improvement.

(2) Recording of time-based patient observations between groups: The study recorded various time-related parameters between groups, including the time for wound pain to disappear, the time for bleeding cessation, the time for the disappearance of tenesmus, and the time for complete healing of the anal fissure.

(3) Recording of adverse reactions during medication: Any adverse reactions occurring during the study were systematically recorded.

2.4. Statistical processing

All data in this study were entered into SPSS 22.0 for processing. Measurement data between groups were expressed as mean ± standard deviation (SD), and results were obtained using a *t*-test. Count data were represented as percentages, and results were obtained using a chi-squared test. If there was a statistically significant difference in the test data, it was expressed as $P < 0.05$.

3. Results

3.1. Comparison of pain levels, wound bleeding, and granulation health scores between groups

Upon analyzing the data presented in **Table 1**, it was observed that before treatment, there were no significant differences in pain scores, wound bleeding scores, and granulation health scores between the groups ($P > 0.05$). However, following medication, the scores for subjects in the observation group were significantly lower than those in the control group ($P < 0.05$).

Table 1. Comparison of the changes in pain, wound bleeding, and granulation health scores between the two groups of anal fissure patients ($n = 49$, points)

Group	Pain score		Wound bleeding score		Granulation health score	
	Before	After	Before	After	Before	After
Control group	6.25 ± 0.98	5.17 ± 0.52	3.22 ± 0.23	2.48 ± 0.16	3.08 ± 0.24	2.39 ± 0.16
Observation group	6.33 ± 0.86	3.69 ± 0.38	3.25 ± 0.31	1.74 ± 0.13	3.15 ± 0.28	1.85 ± 0.14
t	0.430	16.086	0.544	25.127	1.329	17.780
P	0.669	0.001	0.588	0.001	0.187	0.001

3.2. Comparison of symptom disappearance time between groups

Upon analyzing the data in **Table 2**, no significant differences were found in the time it took for symptoms to disappear, as well as the time for complete healing of the anal fissure, before the initiation of treatment between the two groups ($P > 0.05$). After treatment, however, the observation group exhibited significantly short times for the disappearance of each symptom and the complete healing of anal fissure healing compared to the control group ($P < 0.05$).

Table 2. Comparison of symptom disappearance time between two groups of patients with anal fissure ($n = 49$, d)

Group	Wound pain disappearance time	Bleeding disappearance time	Tenesmus disappearance time	Anal fissure complete healing time
Control group	8.03 ± 1.19	8.16 ± 1.41	9.21 ± 1.45	11.96 ± 2.24
Observation group	6.21 ± 0.85	5.39 ± 1.02	7.36 ± 0.98	8.16 ± 1.47
t	8.712	11.142	7.400	9.928
P	0.001	0.001	0.001	0.001

3.3. Analysis of the incidence of adverse reactions

Notably, none of the anal fissure patients included in this study experienced any adverse reactions related to the medication.

4. Discussion

Anal fissure, a common anal disease characterized by linear or oval-shaped tears beneath the dentate line of the anal canal, often results from damage or overstretching of tissues around the anus. Common causes include conditions such as constipation, poor defecation, and anal sphincter spasm, manifesting through symptoms such as pain, itching, bleeding, and difficulty in defecation. If left untreated, anal fissures may lead to bacterial infection, causing local redness, swelling, exudation, burning pain, and other symptoms [5]. Prolonged non-treatment may result in anal stenosis and fistula formation, further escalating the risk of severe infection and inflammation. Early intervention is crucial to improving disease symptoms and enhancing patients' quality of life.

The key components of indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppositories are indometacin and furazolidone. Indometacin, a non-steroidal anti-inflammatory drug (NSAID), possesses analgesic, antipyretic, anti-inflammatory, antispasmodic, and microcirculatory improvement properties. It inhibits prostaglandin synthesis, thereby reducing the release of inflammatory mediators. Furazolidone, an anti-infection drug, effectively sterilizes or inhibits gram-positive and gram-negative bacteria, while cuscohygrinolis α-acetylbenzoacetate, an anticholinergic agent, inhibits the action of the neurotransmitter acetylcholine, further alleviating pain.

Fuzhiqing ointment, a TCM preparation, incorporates ingredients such as *Rehmannia glutinosa*, Cortex Phellodendri, *Sophora flavescens*, known for their heat-clearing, detoxifying, putrefaction removal, muscle growth promotion, astringent, hemostatic, swelling reduction, and analgesic properties. This ointment effectively relieves pain, itching, and bleeding associated with anal fissures and contributes directly to their treatment through topical application [6-8]. Fuzhiqing ointment aids in removing putrefaction, promoting granulation growth, constricting blood vessels, reducing bleeding, and facilitating anal fissure wound healing. Its anti-inflammatory effects improve the inflammatory response, relieving pain and swelling, while also enhancing local blood circulation and promoting wound healing [9,10].

The study results indicate that the symptom scores, symptom disappearance times, and complete healing times of anal fissures in the observation group were significantly better than those in the control group. This suggests that the addition of Fuzhiqing ointment to the treatment of anal fissures with indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppositories can effectively alleviate symptoms such as pain and bleeding, positively influencing wound healing and promoting the recovery of anal function. The combined use of these medications capitalizes on their respective advantages, enhancing the overall therapeutic effect [11]. indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository relieves pain and inflammation, promoting anal fissure healing, while Fuzhiqing ointment addresses uncomfortable symptoms such as itching and burning sensation, supporting wound healing. Their combined use comprehensively treats anal fissures, reducing patient symptoms and improving their quality of life [11]. The medicinal ingredients in Fuzhiqing ointment additionally contribute to scar tissue softening, granulation tissue hyperplasia, wound repair, dehumidification, and alleviation of anal fissure itching, promoting overall healing and improved anal function [12].

In conclusion, the combined use of indometacin, furazolidone, and cuscohygrinolis α-acetylbenzoacetate suppository with Fuzhiqing ointment proves to be an effective treatment for anal fissures, providing relief from pain symptoms, putrefaction removal, muscle growth promotion, and anal fissure healing [13]. However, this study has limitations, including a small sample size and a short research duration. Further clinical studies should conduct larger sample sizes and longer-term follow-up investigations to further validate these results.

Disclosure statement

The author declares no conflict of interest.

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