

Clinical Observation of the Treatment of Hemorrhoids with Polyvinyl Alcohol Foam Sclerotherapy under Transparent Cap Assisted Endoscope

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Abstract: Objective: To explore the clinical effect of domestic capsol foam sclerotherapy in the treatment of hemorrhoids under transparent cap assisted endoscope. **Methods:** According to the experimental requirements, 120 cases of hemorrhoids hospitalized in gastroenterology department in our hospital from February to December in 2019 were selected as the treatment group. The foam sclerotherapy of polidocanol and the air in accordance with the 1:4 ratio was injected into varicose hemorrhoids and hemorrhoids through a transparent cap assisted endoscope. At the same time, 100 patients were selected as the control group and the patients were treated according to the routine protocol. The symptom score and clinical efficacy of the two groups were observed under different treatment schemes.

Results: 120 patients were successfully injected with foam sclerotherapy under endoscope. There were significant differences in clinical symptom score and clinical efficacy between the injection sclerotherapy group and the control group. There were statistically significant differences in the bleeding, prolapse, painful defecation, anal foreign body sensation, impact on daily work, and hemorrhoids data between the treatment group and the control group ($P < 0.05$).

Conclusion: Transparent cap assisted endoscopic injection of polidocanol sclerotherapy in the treatment of hemorrhoids can effectively improve the clinical symptoms of patients, promote the improvement of the disease, and the curative effect is satisfactory. It is a new method of minimally invasive treatment of hemorrhoids, which is worthy of wide promotion in

clinical practice.

Keywords: Transparent cap; Endoscope; Polidocanol; Foam; Hemorrhoids

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1 Introduction

Blood in stool is the most common clinical manifestation of hemorrhoids, a very common clinical disease with a very high incidence. The disease is mainly treated by surgery and medication. Sclerotherapy is one of the most widely used clinical methods for the treatment of hemorrhoids^[1]. Compared with the traditional anal endoscopy, the colonoscope has a clearer field of vision, a larger operation space, optimized operation procedures, and promoted the smooth progress of the operation. This study focuses on the clinical effects of transparent cap-assisted endoscopic polidocanol sclerosant injection in the treatment of hemorrhoids, and the results of the study are summarized and reported as follows^[2].

2 Information and Methods

2.1 Information

According to the requirements of the study, patients with hemorrhoids admitted to the hospital from April to December 2019 for treatment were screened, including internal hemorrhoids and mixed

hemorrhoids. The patients were all patients with bleeding as the main clinical manifestation, and those with prolapse were excluded. Cases in our hospital that meet the enrollment criteria were randomly selected, including cases of gastroenterology and gastrointestinal surgery. 120 patients were enrolled in the treatment group, including 66 males and 54 females, aged 20-68 years old, with an average of 44.3 years old; 100 patients were enrolled in the control group, including 57 males and 43 females, aged 22 to 67 years, with an average of 45.9 years old. The above data was analyzed using statistical software, and the difference between the two groups was not statistically significant ($P > 0.05$).

2.2 Methods

The selected control group received conventional treatment, including potassium permanganate warm water bath, compound carrageenan suppository, improvement of eating habits, and living habits, etc. The treatment group received transparent cap-assisted endoscopic polidocanol injection sclerotherapy. The measures are as follows: complete the preoperative examination, prepare the intestines, install a special transparent cap on the front end of the colonoscope, accurately pinpoint the transparent cap position, and mix the polidocanol foam hardener and air according to the ratio of 1:4 with 10-15 mL of foam hardener for spare^[3]. Perform a painless colonoscopy first to rule out the possibility of colon tumors, remove the lens to the anal canal to observe the patient's hemorrhoids, and observe under the microscope for active bleeding, and then select the largest hemorrhoids. Use a disposable endoscopic injection needle for injection of the spare polidocanol sclerosant by nurses

who have been uniformly trained. After the slow injection is completed, use the transparent cap of the colonoscope to stop the bleeding by compression^[4,5]. Up to 3 affected areas were chosen for treatment each time.

2.3 Observation Indicators

Follow-up was made at 2 weeks and at 3 months after the operation, using the Likert scale to score the patient's rebleeding, painful defecation, foreign body sensation in the anus, impact on daily work, and prolapse of hemorrhoids. On a scale of 1 to 5 points, where 5 points indicate very serious, and 1 point means no symptoms. The data in the study are processed using software.

2.4 Statistical Methods

The data were classified and divided into measurement data ($\bar{x} \pm s$) using t-test, and the data obtained were sorted using Excel tables, with 95% as the confidence interval, and the difference in data between groups was statistically significant ($P < 0.05$).

3 Results

The results of this study are presented in the following table. The clinical symptom scores of the two groups of patients were compared, and the scores of rebleeding, painful defecation, foreign body sensation in the anus, impact on daily work, and prolapse of hemorrhoids in the treatment group were higher than those of the control group. Comparing the data difference between the two groups of patients, the difference was statistically significant ($P < 0.05$). See Table 1 and Table 2.

Table 1. Comparison of clinical symptom data of the two groups of patients 2 weeks after operation ($\bar{x} \pm s$)

Group	N	Rebleeding	Painful Defecation	Anal Foreign Body Sensation	Impact on Daily Work	Prolapse of Hemorrhoids
Treatment	120	2.03±0.80	2.09±0.80	2.05±0.81	1.99±0.84	1.89±0.75
Control	100	2.30±1.00	2.35±0.99	2.30±0.88	2.27±0.93	2.12±0.78
<i>t</i>		0.028	0.037	0.029	0.020	0.029
<i>P</i>		<0.05	<0.05	<0.05	<0.05	<0.05

Table 2. Comparison of clinical symptom data of the two groups of patients 3 months after operation ($\bar{x} \pm s$)

Group	N	Rebleeding	Painful Defecation	Anal Foreign Body Sensation	Impact on Daily Work	Prolapse of Hemorrhoids
Treatment	120	1.36±0.58	1.38±0.55	1.38±0.54	1.41±0.51	1.34±0.57
Control	100	1.57±0.70	1.58±0.74	1.57±0.76	1.59±0.77	1.54±0.74
<i>t</i>		0.017	0.023	0.040	0.044	0.030
<i>P</i>		<0.05	<0.05	<0.05	<0.05	<0.05

4 Discussion

Clinically, for patients with hemorrhoids with bleeding as the main manifestation, surgery is recommended only when a large amount of blood loss, prolapse and other complications occur. Generally, conservative treatments such as drugs and improving living habits are adopted. The principle of hemorrhoid treatment is to relieve or eliminate symptoms instead of eliminating hemorrhoids. Polidocanol sclerosant can effectively stop bleeding and relieve symptoms such as pain and prolapse^[6]. The unique advantages of the new technology of endoscopic sclerotherapy of internal hemorrhoids with polidocanol are as follows: (1) Simultaneous colonoscopy, removal of polyps, exclusion of bowel cancer, inspection of hemorrhoids and minimally invasive treatment under microscope. (2) The surgical vision is clear, the symptoms are relieved significantly, and hemorrhoids are eliminated. (3) Easy to operate, well tolerated, minimally invasive and painless, with few complications. Polidocanol foam hardener has unique physical properties, its vacuole effect increases the surface area of hardener molecules contacting the blood vessel wall, and the concentration of hardener molecules on the surface remains stable^[7]. In addition, the foam can easily stay put in the blood vessel, and it can enter the blood vessel as a whole and maintain for a certain period of time, exerting an expelling effect on the blood. Therefore, we believe that its "controllability" is relatively stronger, and the injection dose can be effectively controlled with the aid of a transparent cap, and the transparent cap can be used to stop the bleeding by compression, which more effectively improves the safety and surgical effect^[8]. This study shows that a small number of patients in the treatment group had obvious anal foreign body sensation within one week after the operation, but it was not statistically significant and could recover on its own. The clinical symptom scores of the two groups of patients were scored 3 months after the operation and compared; the scores of patients in the control group were higher than those in the treatment group in terms of re-bleeding, painful defecation, anal foreign body sensation, impact on daily work, and hemorrhoid prolapse. The difference between the two groups was statistically significant ($P < 0.05$).

In summary, patients with hemorrhoids who

receive transparent cap-assisted endoscopic polidocanol sclerotherapy can effectively improve the clinical symptoms of patients^[9,10], promote the improvement of the disease, have satisfactory results, and have a high degree of patient acceptance. It is promoted clinically in many Chinese hospitals, and it is expected to become the first-line treatment method for the treatment of stage I, stage II and stage III hemorrhoids.

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