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Comprehensive Analysis of Factors Influencing Endometrial Polyps Incidence and Evaluation of Hysteroscopy Treatment Efficacy

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Abstract: *Objective:* To analyze the factors related to the incidence of endometrial polyps and assess the value of hysteroscopic treatment. *Methods:* Fifty women with endometrial polyps admitted to the gynecology department of Xinghua People's Hospital between January 2020 and June 2021 participated in the study. They were categorized into two groups using numerical expressions, and their uteri were analyzed. Causes and related factors of endometrial polyps were assessed. The study included 25 patients undergoing dilation and curettage (control group) and 25 patients undergoing hysteroscopy (observation group). Clinical surgical indicators, endometrial indicators, adverse reactions, and recurrence rates were compared between the two groups. *Results:* The observation group exhibited lower intraoperative and postoperative bleeding volumes, as well as significantly shorter operation time and hospitalization time compared to the control group ($P < 0.05$). The incidence rate of adverse reactions was 4.0% in the observation group, significantly lower than the 24.0% in the control group ($P < 0.05$). After 1 year of follow-up, the recurrence rate in the observation group was 4.0%, considerably lower than the 20.0% in the control group ($P < 0.05$). *Conclusion:* Endometrial polyps have various causes, including endometritis and long-term use of contraceptive pills use. Hysteroscopic treatment proves effective, with minimal adverse reactions and a low recurrence rate, making it a commendable surgical option for promotion.

Keywords: Endometrial polyps; Pathogenic factors; Hysteroscopy; Dilation and curettage; Treatment effect; Safety

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1. Introduction

Endometrial polyps, with a high incidence among women, constitute a significant factor contributing to female infertility [1]. Despite continuous research, the precise pathogenesis of endometrial polyps remains unclear. Experts, however, associate their occurrence with factors such as endometritis, long-term use of contraceptive pills, and uterine fibroids [2].

In the past, dilation and curettage were frequently employed in clinical treatment. However, the surgical outcomes often fell short of expectations, and adverse reactions, including postoperative bleeding and infection, were not uncommon. In severe cases, hysterectomy might even be deemed necessary [3].

In recent years, China's medical capabilities have advanced significantly, leading to the increasing adoption of hysteroscopy in clinical practice. Hysteroscopy, being a minimally invasive technique, offers the advantage of removing polyps with minimal trauma and perioperative bleeding. Patients undergoing hysteroscopic treatment experience swift postoperative recovery and display favorable prognosis [4]. This article delves into the clinical effects observed in 50 patients with endometrial polyps who underwent various treatment methods between January 2020 and June 2021. The study aims to provide insights into the efficacy of these treatment approaches.

2. Materials and methods

2.1. General information

Patients diagnosed with endometrial polyps and admitted to the gynecology department of Xinghua People's Hospital were selected for this study. A total of 50 women received treatment between January 2020 and June 2021. These patients were categorized into two groups using numerical expressions, and their uterus endometrium was meticulously analyzed. Factors associated with the occurrence of polyps were thoroughly examined.

The study comprised 25 patients who underwent dilation and curettage, forming the control group, and another 25 patients who underwent hysteroscopy, constituting the observation group. The age of women in the control group ranged from 26 to 68 years old, with an average age of 49.5 ± 3.7 years. The polyp size in the control group ranged from 5 to 16 cm, with an average of 8.5 ± 1.5 cm. The age of women in the observation group ranged from 27 to 67 years old, with an average age of 48.3 ± 3.3 years. The polyp size in the observation group ranged from 6 to 15 cm, with an average of 8.4 ± 1.4 cm. No statistical significance was observed in the conditions of patients with endometrial polyps in the two groups ($P > 0.05$), allowing for their inclusion in scientific comparisons.

2.2. Treatment methods

2.2.1. Control group: dilatation and curettage treatment

Patients in the control group underwent dilatation and curettage treatment, consisting of the following steps: before the operation, patients were advised to empty their bladders, assume the bladder lithotomy position, and general anesthesia was administered. Following cervical dilation, hysteroscopy was employed to determine the size, number, and location of the polyps. Subsequently, all polyps were removed using a curette. The surgery concluded with a hysteroscopic confirmation to ensure the complete removal of all polyps.

2.2.2. Observation group: hysteroscopic electroresection or resection

The observation group received hysteroscopic electroresection or resection treatment, involving the following procedures: before the operation, patients were reminded to empty their bladders and assume the lithotomy position, with general anesthesia administered. The hysteroscope was slowly inserted, allowing careful observation of the number, size, location, and surrounding conditions of the polyps. The hysteroscope imaging system assisted in completing the operation, where the polyps and their bases were separated using a ring electrode and completely removed. Generally, the resection range extended approximately 5 mm beyond the polyp periphery, with a depth of about 2 mm below the base of the superficial muscle layer. After completion, the decision to use electrocoagulation to stop bleeding was based on the bleeding situation. Additionally, the excised polyp tissue was sent to the laboratory for pathological examination [5].

2.3. Effect observation

2.3.1. Clinical surgical indicators

The bleeding volume, operation time, and hospitalization time of both patient groups during and after the operation were respectively recorded, and the results were compared.

2.3.2. Adverse reactions

Postoperative adverse reactions, such as hematuria, sacrococcygeal pain, and lower abdominal pain, were observed in both patient groups. The incidence rates were calculated and compared.

2.3.3. Recurrence rate

All study subjects underwent a 12-month follow-up, during which disease recurrence was statistically analyzed at 1 month, 3 months, 6 months, and 12 months post-surgery. The results were then compared.

2.4. Statistical analysis

All research data were processed using SPSS 20.0 statistical software. Measurement data are expressed as mean ± standard deviation (SD) and analyzed using the *t*-test. Calculated data are expressed as percentages and analyzed using the χ^2 test. A significance level of $P < 0.05$ was considered statistically significant.

3. Result

3.1. Comparison of clinical surgical indicators between the two groups

Table 1 shows that the observation group exhibited lesser intraoperative and postoperative bleeding volume as well as shorter operation and hospitalization times as compared to those of the control group ($P < 0.05$).

Table 1. Comparison of clinical surgical indicators between the two groups (mean ± SD)

Group	Intraoperative blood loss (mL)	Operation time (min)	Postoperative bleeding volume (mL)	Length of stay (d)
Observation group ($n = 25$)	5.25 ± 3.85	26.51 ± 3.33	15.12 ± 1.10	2.51 ± 0.52
Control group ($n = 25$)	10.08 ± 3.45	31.28 ± 3.47	29.44 ± 1.52	4.51 ± 0.16
t	8.6251	4.5212	10.1221	4.6235
P	< 0.05	< 0.05	< 0.05	< 0.05

3.2. Comparison of postoperative adverse reactions between the two groups

The incidence rate of adverse reactions in the observation group was 8.0%, lower than the 24.0% incidence rate in the control group ($P < 0.05$), as shown in **Table 2**.

Table 2. Comparison of postoperative adverse reactions between the two groups [*n* (%)]

Group	Hematuria	Sacrococcygeal pain	Lower abdominal pain	Overall incidence
Observation group ($n = 25$)	0 (0.0)	1 (4.0)	1 (4.0)	2 (8.0)
Control group ($n = 25$)	0 (0.0)	1 (4.0)	5 (20.0)	6 (24.0)
χ^2				2.6285
P				< 0.05

3.3. Comparison of recurrence rates of endometrial polyp between the two groups after 1 year

Table 3 shows that the overall recurrence rate of the observation group was 4.0%, while the overall recurrence rate of the control group was as high as 20.0%. The difference in data comparison was significant ($P < 0.05$).

Table 3. Comparison of recurrence rates of endometrial polyp between the two groups after 1 year [*n* (%)]

Group	1 month after surgery	3 months after surgery	6 months after surgery	12 months after surgery	Overall recurrence rate
Observation group ($n = 25$)	0 (0.0)	0 (0.0)	0 (0.0)	1 (4.0)	1 (4.0)
Control group ($n = 25$)	0 (0.0)	1 (4.0)	1 (4.0)	3 (12.0)	5 (20.0)
χ^2					7.3252
P					< 0.05

4. Discussion

Based on existing research, endometrial polyps are caused by proliferative lesions in the endometrium, which are related to abnormal estrogen levels. They are benign gynecological lesions and are more likely to occur in women of childbearing age [6,7]. Endometrial polyps can cause symptoms such as prolonged menstrual periods, increased menstrual flow, and irregular vaginal bleeding. If not treated promptly, they may lead to infertility or anemia [8,9].

In the past, dilation and curettage were often used in clinical treatment. However, this procedure may result in incomplete removal, whereas hysteroscopic electroresection or resection is more thorough and can completely eliminate polyps [10,11]. The application of the hysteroscopic system provides doctors with a higher-definition surgical field of view. Doctors can accurately locate polyps and remove them along with the basal tissue. The use of electrocoagulation to stop bleeding after surgery can reduce active bleeding and create a smoother wound [12,13].

Moreover, compared with dilation and curettage, hysteroscopic electroresection or resection is safer, reduces the occurrence of adverse reactions such as postoperative adhesions, hematuria, sacrococcygeal pain, or lower abdominal pain, and accelerates women's postoperative recovery. It is faster, and overall treatment efficiency is higher [14,15].

In summary, endometrial polyps have various causes, including endometritis, long-term use of contraceptive pills, uterine fibroids, etc., which can easily lead to the disease. Hysteroscopic treatment has a significant effect, with few postoperative adverse reactions and a low recurrence rate. It is a surgical option worth promoting.

Disclosure statement

The authors declare no conflict of interest.

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