DOI: 10.53469/jcmp.2025.07(06).25

Post Hysteroscopic Electric Resection Natural Progesterone Therapy in the Treatment of Endometrial Polyps

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Abstract: ***Objective:*** *To study the clinical effect of hysteroscopic electric resectionn combined with natural progesterone in the treatment of patients with endometrial polyps.* ***Methods:*** *Clinical data of 80 patients with endometrial polyps admitted to XIANXIAN HOSPITAL OF TCM from January 2022 to September 2023 were retrospectively selected and divided into two groups according to treatment methods. Control group (N=40) was treated with hysteroscopic electric resectionn, while treatment group (N=40) was treated with hysteroscopic electric resectionn combined with natural progesterone. The results of operation were compared between the two groups. Endometrial thickness and polyp recurrence were followed up 1 month, 6 months and 1 year after operation.* ***Results:*** *Both the treatment group and the control group were cured after surgery. There was no significant difference in endometrial thickness between the two groups one month after surgery. The endometrial thickness of the treatment group was significantly thinner than that of the control group at 6 months and 1 year after surgery ($p < 0.05$). The recurrence rate in the treatment group was significantly lower than that in the control group (5% VS 20%, $P < 0.05$).* ***Conclusion:*** *hysteroscopic electric resectionn combined with natural progesterone can reduce the risk of recurrence of endometrial polyps after surgery.*

Keywords: Endometrial polyps, Hysteroscopic electric resection, Natural progesterone, Postoperative recurrence.

1. Introduction

The mechanism of endometrial polyp formation is mainly due to abnormal and excessive growth of local mesenchymal in the uterus. This hyperplasia phenomenon can be seen prominently in the local area of the endometrial [1]. The clinical symptoms of patients are mostly manifested as abnormal vaginal bleeding, menstrual disorders and other phenomena. And most patients are often accompanied by the imbalance of sex hormones. hysteroscopic electric resectionn is often used for patients showing obvious symptoms. However, studies have shown that a single hysteroscopic electric resectionn had a high recurrence rate in patients with hormonal imbalance and low immune function. It cannot regulate the sex hormone levels of patients and cannot achieve the best therapeutic effect [2]. Natural progesterone can not only inhibit the abnormal proliferation of endometrial cells but also prevent the formation of polyps. It can also control the secretion of sex hormones through a negative feedback mechanism, thereby helping to maintain the stability of the endocrine system and further reducing the recurrence rate of endometrial polyps [3]. Therefore, in this study, natural progesterone was used in the treatment of patients with endometrial polyps after hysteroscopic electric resectionn to observe its clinical effect. The specific report is as follows:

2. Methods

The clinical data of 80 patients with endometrial polyps admitted to our hospital from January 2022 to December 2023 were retrospectively selected. Inclusion criteria: (1) Age 18-50 years old, (2) Vaginal color Doppler ultrasound indicates space-occupying lesions in the uterine cavity; (3) The results of hysteroscopy and pathological biopsy indicated endometrial polyps. Exclusion criteria: (1) Malignant tumors and endocrine system diseases; (2) Have taken hormones within six months; (3) Patients lost to follow-up. The patients were divided into two groups according to different treatment methods: 40 cases in the control group treated with hysteroscopic electric resectionn and 40 cases in the treatment group treated with hysteroscopic electric resectionn combined with natural progesterone. This study has been approved by the hospital ethics committee, and all patients signed the informed consent form for the surgery.

2.1 Treatment Method

Both groups of patients underwent electroresection of endometrial polyps using hysteroscopy (model: GE-3, Registration number: Yue Medical Device Registration No. 20172180501). During the surgical preparation stage, the bladder lithotomy position was adopted, and iodophor was routinely disinfected and laid out. Throughout the entire surgical procedure, a portable color Doppler ultrasound diagnostic instrument (Shenzhen Mindray Biomedical Electronics Co., LTD., Model: M8, Registration Number: Yue Medical Device Registration No. 20162060988) was used for monitoring. During the operation, the cervix was gradually and fully dilated to 9-10mm with a dilation rod (Nanjing Zhuhai Biotechnology Co., LTD., registration number: Suzhou Medical Device Registration No. 20232181791. Use cervical forceps (Chaozhou Caitang Town Yufeng Hardware Machinery Factory, Model: 25cm bent straight, Registration number:) Yue (Chao) 20100001) Precisely clamp the anterior labia of the cervix to stabilize it. Use as gentle a technique as possible to insert the visual endoscope into the uterine cavity to examine the uterine cavity morphology, bilateral uterine angles and the exposure of fallopian tube openings, determine the location, shape, size and number of polyps, and use high-frequency electrosurgical knife (Beijing Medikangwei Medical Equipment Co., LTD., Model: CM-350A, Registration Number: (National Medical Device Registration No. 20173014626) The root of the polyp is thoroughly cut from the base of the polyp (generally a shallow muscle layer tissue of 2 to 3 mm) for complete

resection and removal. The cutting power is 150w to 300w for single-stage electroresection and 70w for bipolar electrocoagulation. The surrounding intimal tissue is selectively removed according to the width of the polyp tissue to avoid excessive resection damage. Patients in the control group only received routine observation and care after the operation and were not treated with progesterone drugs. Patients in the treatment group were given dydrogesterone tablets (SOLVAY Pharmaceutical Company of the Netherlands, National Drug Approval No. H20110211, specification: 10mg per tablet, oral 10mg each time, twice a day) for adjuvant treatment after the operation. A course of treatment lasted for 10 consecutive days, and menstruation resumed after drug withdrawal. Add dydrogesterone at the same dose for 10 days in the second half of the next menstrual cycle. A total of 6 courses of continuous treatment were carried out. Outpatient follow-up was conducted at 1 month, 6 months and 1 year after the operation.

2.2 Observation Indicators

Outpatient follow-up was conducted 1 month, 6 months and 1 year after the operation to evaluate the surgical outcomes of the two groups of patients. Color Doppler ultrasound was used to compare the endometrial thickness in the early follicular phase after the end of menstruation before and after treatment in the two groups of patients to assess the recurrence of polyps.

2.3 Statistical Analysis

The data obtained from both groups were included in the statistical software SPSS26.0 for analysis and comparison. Measurement data were represented by "$\overline{x} \pm s$ " and the independent sample t-test was used. Count data were expressed as percentages and the chi-squared test was used. A $P < 0.05$ was considered statistically significant.

2.4 Result

By comparing the general data of the two groups of patients, there was no statistically significant difference. See Table 1.

Both groups achieved the effect of postoperative cure. One month after the operation, there was no statistically significant difference in endometrial thickness between the two groups. At 6 months and 1 year after the operation, the endometrial thickness of the treatment group was significantly thinner than that of the control group, and the difference was statistically significant ($P < 0.05$). See Table 2.

The recurrence rate of the treatment group was 5% (2/40), which was significantly lower than that of the control group at 20% (8/40), and the difference was statistically significant ($p=0.043 < 0.05$).

No complications such as uterine perforation, massive hemorrhage, or hyperhydration syndrome occurred in either group during the operation. No related adverse drug reactions occurred in the treatment group during the administration of dydrogesterone.

Table 1: General information of the two groups of patients ($\overline{x} \pm s$)

Group	Number of cases (n)	Age (years)	BMI (kg/m^2)	Number of polyps	Hemoglobin (g/L)
Treatment group	40	36.23±1.52	23.7±3.1	2.5±1.1	105.82±3.76
Control group	40	36.26±1.53	22.5±3.1	2.1±1.6	107.79±3.74
t	-	0.935	1.268	0.082	1.96
p	-	0.347	0.438	0.475	0.411

Table 2: Comparison of endometrial thickness between the two groups of patients ($\overline{x} \pm s$)

Groups	Number of cases(n)	endometrial thickness (mm)		
		1st month after operation	6th month after operation	1st year after operation
treatment group	40	5.7±0.1	5.9±0.1	6.3±0.2
Control group	40	5.6±0.2	6.7±0.2	7.5±0.2
t	-	4.02	0.26	0.02
p	-	0.821	0.049	0.007

3. Discussion

Age, chronic diseases such as hypertension and diabetes, as well as excessive obesity and other factors can all cause abnormal growth of the endometrium and the formation of polyps. Currently, this disease is common in women over 35 years old [4]. Although the vast majority of endometrial polyps now show benign characteristics, there are still a few specific groups, especially during the period before and after menopause, that may face the risk of canceration and require early prevention and intervention [5]. Hysteroscopic electric resectionn can conduct a detailed examination of the uterine cavity through hysteroscopy, accurately identify the polyps in the uterine cavity, and precisely remove them using high-precision electrosurgical knife technology. This method is characterized by minimally invasive, precise and rapid recovery, and is currently mostly used in the treatment of uterine cavity diseases. However, at present, this surgical treatment method cannot avoid the risk of postoperative recurrence. Natural progesterone is a compound with specific biological activity secreted by luteal cells in women. Due to its relatively high clinical safety and relatively small impact on women's bodies, it is currently mostly used as an adjuvant treatment to prevent the recurrence of endometrial polyps after surgery.

Hysteroscopic electric resection involves placing a hysteroscope through the dilation of the cervix into the uterine cavity, which can clearly and distinctly observe the detailed information of endometrial polyps (including size, quantity, and specific location). By applying the thermal effect generated by high-frequency current, the endometrial polyps are precisely cut and separated, effectively coagulated to reduce bleeding, and the diseased tissue is completely removed [6]. However, the potential causes of polyps cannot be completely eliminated. If patients only rely on routine care after surgery and lack targeted drug treatment, the risk of polyp recurrence is relatively high, especially in multiple or

large-sized polyps. Therefore, the importance of postoperative management for preventing the recurrence of polyps needs to be comprehensively considered. Natural progesterone: Dydrogesterone tablets are a preparation highly similar to the progesterone secreted by the human body. They have relatively high safety, can avoid various adverse reactions that allogeneic hormones may cause to the body, and have little impact on the patient's various functional metabolisms [7]. When applied to patients after hysteroscopic electric resectionn, it can inhibit the repeated proliferation of the endometrium, transform the proliferative endometrium into the secretory endometrium, and thereby accelerate the repair speed of the endometrium. Because the estrogen in the patient's body can promote endometrial hyperplasia, while progesterone, on the contrary, can inhibit hyperplasia and promote endometrial repair. Taking dydrogesterone tablets can replenish the progesterone level in the patient's body, inhibit the secretion of gonadotropins, reduce the estrogen in the patient's body to maintain endocrine balance, thereby reducing the probability of recurrence and maintaining the stability of the patient's menstrual cycle [8]. The research results also show that the combined treatment can effectively relieve the symptoms of menstrual pain and irregular vaginal bleeding in patients, and promote the restoration of normal ovulation ability of follicles and the normal menstrual cycle. Moreover, the thickness of the endometrium in patients is significantly thinner. It is because hysteroscopy can precisely remove polyps on the endometrium of patients through visual endoscopy. However, the concentration of estrogen in patients with endometrial polyps is relatively high, while the concentration of progesterone is relatively low. This imbalance in hormone levels can promote abnormal endometrial hyperplasia and cause irregular bleeding. After patients take natural progesterone after surgery, it can regulate the hormone levels in the body, promote the transformation of the proliferative endometrium to the secretory phase, effectively inhibit the proliferation of endometrial cells, and thus prevent excessive endometrial hyperplasia [9-10].

In conclusion, for patients with endometrial polyps who undergo hysteroscopic electric resectionn, the combined application of natural progesterone after surgery can effectively reduce the risk of postoperative polyp recurrence.

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