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Effect of Cesarean Section Combined with Myomectomy in the Treatment of Pregnancy Complicated with Uterine Fibroids

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Abstract: *Objective:* To study the clinical effect of cesarean section combined with myomectomy (LM) in the treatment of pregnancy complicated with uterine fibroids. *Methods:* 152 patients with pregnancy complicated with uterine fibroids admitted to our hospital from July 2022 to July 2024 were selected and divided into two groups according to the different surgical methods, 76 cases in each group. The control group was given conventional cesarean section for delivery, and the uterine fibroids were removed at a selected time after the body recovered, while the experimental group was given cesarean section combined with uterine fibroids removal. The clinical therapeutic effect, complication rate and surgical indicators of the two groups were compared. *Results:* compared with the control group, the total effective rate of the experimental group was higher ($p < 0.05$); Compared with the control group, the operation time of the experimental group was longer ($p < 0.05$), while there was no significant difference in the amount of bleeding, lochia clearance time and other indicators between the two groups ($p > 0.05$); The incidence of complications in the experimental group was lower than that in the control group ($p < 0.05$). *Conclusion:* cesarean section combined with myomectomy for pregnant women with uterine fibroids during delivery can improve the treatment effect and reduce the incidence of complications on the premise of ensuring the safety of operation, which has high clinical application value.

Keywords: Delivery period; Cesarean section; Myomectomy; Pregnancy complicated with uterine fibroids; Treatment effect

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1. Introduction

Pregnancy complicated with uterine fibroids is a common situation in obstetrics and gynecology. In recent years, with the change of women's fertility ideas and the wide use of ultrasound diagnosis technology, the number of such patients is increasing every year [1]. Uterine fibroids will be affected by the rise of estrogen and progesterone levels during pregnancy, which may lead to larger volume and increased blood supply. This will not only increase the possibility of abortion and premature birth during pregnancy, but also affect uterine contraction during childbirth, resulting in postpartum hemorrhage, prolonged labor and other problems, which will bring risks to maternal and child safety [2]. At present, there are different clinical treatment options for these patients. Some patients first complete delivery with cesarean section, and then undergo myomectomy after a period of postpartum recovery. Although this staged treatment can avoid the excessive trauma caused by a single operation, it will make patients experience the pain and risk of a second operation; More clinical studies are

needed to confirm whether cesarean section and myomectomy can achieve the ideal therapeutic effect while ensuring the safety of mother and baby. It is based on this point that this study compares the application effects of the two methods, so as to provide reference for the selection of clinical treatment.

2. Data and methods

2.1. General information

Methods: A total of 152 patients with pregnancy complicated with uterine fibroids admitted to our hospital from July 2022 to July 2024 were selected and divided into control group and experimental group according to different surgical methods, with 76 cases in each group; In the control group, the age was 23–39 years old, the average was (29.76 ± 3.52) years old, the gestational weeks was 37–41 weeks, the average was (38.84 ± 0.91) weeks, the diameter of myoma was 3.0–8.6 cm, the average was (5.72 ± 1.34) cm, the type of myoma: 42 cases of intramural myoma, 25 cases of subserosal myoma, 9 cases of submucosal myoma; The age of the experimental group was 22–38 years old, with an average of (29.53 ± 3.47) years old, gestational weeks was 37–40 weeks, with an average of (38.62 ± 0.85) weeks, and the diameter of myoma was 3.1–8.4cm, with an average of (5.68 ± 1.29) cm; There was no significant difference in general data between the two groups ($p > 0.05$), so it was comparable.

2.1.1. Inclusion criteria

(1) Pregnancy complicated with uterine fibroids diagnosed by ultrasound;
(2) Singleton pregnancy and gestational weeks ≥ 37 weeks were in line with the indications of cesarean section;
(3) The number of myomas was ≤ 3, the diameter was 3–9 cm, and there was no surgical contraindication.

2.1.2. Exclusion criteria

(1) Severe heart, liver, kidney and other organ dysfunction or coagulation dysfunction;
(2) Complicated with severe complications such as pregnancy induced hypertension and diabetes mellitus;
(3) There are acute infectious diseases or malignant tumors.

2.2. Method

Both groups of patients completed preoperative blood routine, coagulation function, liver and kidney function, electrocardiogram, and ultrasound examinations, as well as preoperative preparations such as skin preparation, fasting and water restriction, and intestinal preparation. Health education and psychological counseling were also provided to patients to alleviate their tension and anxiety.

The control group adopted a "staged surgery" plan, first performing routine cesarean section surgery: the patient was placed in a supine position and subjected to continuous epidural anesthesia. A transverse incision was made in the middle of the lower abdomen, and the skin, subcutaneous tissue, fascia, and peritoneum were cut layer by layer, entering the abdominal cavity to expose the uterus. A transverse incision was made in the lower segment of the uterus, and the amniotic fluid was aspirated to remove the fetus. After the placenta naturally peeled off, the uterine incision was sutured layer by layer with absorbable thread, and finally the abdominal cavity was closed layer by layer; Routine anti infection, hemostasis, and fluid replacement treatment will be given after surgery. After 4–6 months postpartum, the patient's body will recover well, and then uterine fibroid removal surgery will be performed at a later date. The surgical operation will follow the routine procedure of uterine fibroid removal surgery, and anti-infection and symptomatic treatment will also be given after surgery.

The experimental group underwent a combination of cesarean section during delivery and uterine fibroid removal surgery. The specific procedure was to first complete the delivery of the fetus and initial suturing of the uterine incision according to the control group's cesarean section surgical procedure, ensuring good uterine contraction and no obvious bleeding. After ensuring good uterine contraction, the uterine fibroid removal surgery was performed under direct vision

through the original cesarean section surgical incision; During the operation, the location, size, and relationship with surrounding tissues such as the uterine muscle layer and blood vessels of the fibroid should be clarified. For subserosal fibroids, the fibroid pedicle should be directly clamped with a vascular clamp, and the fibroid should be removed after cutting. The wound at the pedicle should be sutured with absorbable thread to stop bleeding; For intramural fibroids, a longitudinal incision is made on the corresponding uterine muscle layer on the surface of the fibroid, and the incision is made layer by layer to the fibroid capsule. The fibroid is clamped with tissue forceps and completely separated along the capsule. After removing the fibroid, absorbable sutures are used to suture the uterine muscle layer wound layer by layer, ensuring tight suturing to reduce bleeding; For submucosal fibroids, if the root of the fibroid is located in the lower segment of the uterus, it can be directly pulled out through the original abdominal incision. If the location is deeper, the uterine incision should be appropriately enlarged, and the uterine mucosa and muscle layer should be sutured after complete removal; After removing all fibroids, rinse the abdominal cavity and surgical incision with physiological saline, carefully inspect the uterine wound and various organs in the abdominal cavity for bleeding and damage, confirm that there are no abnormalities, and then close the abdominal surgical incision according to the conventional procedure; After surgery, antibiotics are given to prevent infection, hemostatic drugs are used to control bleeding, and uterine contraction agents are used to promote uterine contractions. At the same time, the patient's vital signs such as body temperature, blood pressure, heart rate, as well as vaginal bleeding volume and color, are closely monitored to promptly address any abnormal issues.

2.3. Observation indicators

(1) Clinical treatment effect

Based on the patient's postoperative recovery, the integrity of fibroid removal, and the occurrence of complications, it is evaluated and divided into significant effect (complete removal of fibroids, no residue at one month after surgery, no obvious complications), effective (basic removal of fibroids, residual diameter < 1 cm at postoperative follow-up, no serious complications), and ineffective (incomplete removal of fibroids or residual diameter ≥ 1 cm, or serious complications);

(2) Surgical indicators;

(3) The incidence of complications and other related situations.

2.4. Statistical methods

SPSS 24.0 was used to analyze the data, where *t*-test was used for quantitative data and chi square test was used for count χ^2 data, and $p < 0.05$ was considered to have a certain statistical significance between the groups.

3. Results

3.1. Comparison of clinical treatment effects between two groups

The total effective rate of the experimental group was higher than that of the control group ($p < 0.05$), as shown in **Table 1**.

Table 1. Comparison of clinical treatment effects between two groups [n (%)]

Group	Markedly effective	Effective	Invalid	Total effective rate[n (%)]
Control group (76)	32 (42.11)	28 (36.84)	16 (21.05)	60 (78.95)
Experimental group (76)	45 (59.21)	26 (34.21)	5 (6.58)	71 (93.42)
χ^2				6.686
p				0.010

3.2. Comparison of surgical indicators between two groups

The surgical time of the experimental group was longer than that of the control group ($p < 0.05$), while there was no significant difference in intraoperative bleeding, lochia clearance time, postoperative exhaust time, and postoperative hospitalization time between the two groups ($p > 0.05$). The specific data are shown in **Table 2**.

Table 2. Comparison of surgical indicators between two groups ($\bar{x} \pm s$)

Group	Operation time (min)	Intraoperative blood loss (mL)	Lochia discharge time (d)	Postoperative exhaust time (h)
Control group (76)	65.32 ± 8.47	278.56 ± 36.21	21.45 ± 3.28	28.63 ± 4.57
Experimental group (76)	98.75 ± 10.63	282.43 ± 35.78	20.98 ± 3.16	27.85 ± 4.32
t	21.442	0.663	0.900	1.081
p	0.000	0.509	0.370	0.281

3.3. comparison of the incidence of complications between the two groups

The incidence of complications in the experimental group was lower than that in the control group ($p < 0.05$). See **Table 3** for the specific data.

Table 3. Comparison of the incidence of complications between the two groups [n (%)]

Group	Postpartum hemorrhage	Poor healing of uterine incision	Infect	Pelvic adhesions	Total incidence [n (%)]
Control group	6 (7.89)	5 (6.58)	4 (5.26)	3 (3.95)	18 (23.68)
Test group	2 (2.63)	1 (1.32)	1 (1.32)	0 (0.00)	4 (5.26)
χ^2				5.285	10.417
p				0.022	0.001

4. Discussion

The selection of treatment plans for patients with pregnancy complicated with uterine fibroids should minimize surgical trauma to the patient's body while ensuring the safety of both mother and baby, and achieve the desired effect of fibroid treatment; The commonly used staged surgical plan in clinical practice in the past was to first give birth by cesarean section and then selectively remove fibroids. Although it can reduce the complexity of a single surgery to a certain extent, two surgeries can cause more physiological pain and psychological pressure for patients, and increase surgical costs and hospital stay. At the same time, postpartum fibroids may persist and cause menstrual abnormalities, abdominal pain, and other problems, which in turn affect the quality of life of patients after surgery [3].

With the continuous development and maturity of abdominal surgical techniques, by optimizing the surgical process and improving operational accuracy, safe and efficient treatment effects can be achieved in the treatment of uterine fibroids, and its application is becoming increasingly widespread; In this study, the experimental group underwent a combination of cesarean section during delivery and uterine fibroid removal surgery, which solved the problems of delivery and fibroids in one go through simultaneous surgery. The research results showed that the total effective rate of the experimental group reached 93.42%, significantly higher than the 78.95% of the control group. This indicates that simultaneous surgery can more thoroughly remove fibroids and reduce the possibility of residual fibroids, thereby improving the treatment effect. The main reason for this is that the uterus is exposed during the cesarean section surgery, and doctors can directly observe the position and shape of fibroids through the original abdominal incision. Combined with precise operation under direct

vision, it can more accurately separate fibroids from surrounding tissues, ensuring the complete removal of fibroids while avoiding excessive damage to normal uterine tissues [4].

In terms of surgical indicators, the experimental group had a significantly longer surgical time than the control group. This is because during the same period of surgery, an additional fibroid removal operation through the original abdominal incision was required on the basis of cesarean section, which increased the surgical steps and difficulty, naturally prolonging the surgical time. However, there was no significant difference in intraoperative bleeding between the two groups. This result is consistent with expectations, as precise hemostasis can be achieved by performing surgery under direct vision. During the fibroid removal process, doctors can timely treat bleeding points through methods such as vascular clamping, absorbable suture ligation, and bipolar electrocoagulation, effectively controlling intraoperative bleeding and avoiding increased bleeding caused by increased surgical operations; In addition, there was no significant difference in the time for lochia clearance, postoperative exhaust time, and postoperative hospital stay between the two groups. This indicates that although the experimental group had a longer surgical time, optimizing the surgical operation process and reducing unnecessary tissue tension and damage can to some extent reduce the trauma of surgery on the patient's body and promote postoperative recovery. Therefore, it will not significantly prolong the patient's postoperative recovery time and hospital stay [5,6].

The incidence of complications is an important indicator for measuring surgical safety. In this study, the total incidence of complications in the experimental group was only 5.26%, much lower than the control group's 23.68%. Moreover, the experimental group showed significant advantages in complications such as postpartum hemorrhage, poor healing of uterine incisions, infection, and pelvic adhesions; Postpartum hemorrhage, as a common and serious complication after cesarean section, had a lower incidence in the experimental group mainly because during the same period of surgery, doctors were able to observe uterine contractions more directly. After removing fibroids, the uterine muscle layer could be finely sutured to enhance uterine contractions, and possible bleeding points could be treated in a timely manner to reduce the risk of bleeding; The occurrence of poor healing of uterine incisions is related to factors such as incision infection and suturing techniques. In the experimental group, surgery was performed under direct visualization of the original abdominal incision, which provided a clear view and made the suturing operation more precise. This ensured that the uterine incision was tightly sutured to the fibroid removal wound, thereby reducing the possibility of incision infection and poor healing; As for the low incidence of pelvic adhesions, it is due to the reasonable planning of surgical routes, which reduces interference with the intra-abdominal environment and minimizes the stimulation of pelvic tissues during surgery. At the same time, thorough flushing of the abdominal cavity before the end of the surgery reduces tissue debris and residual inflammatory factors, thus reducing the risk of adhesions [7,8].

To sum up, cesarean section combined with myomectomy in the delivery period for patients with pregnancy complicated with uterine fibroids who meet the indications can improve the treatment effect and reduce the incidence of complications on the premise of ensuring the safety of mother and baby, and will not significantly increase the amount of intraoperative bleeding and postoperative recovery time, which is worthy of further promotion and application in clinical practice.

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Disclosure statement

The author declares no conflict of interest.

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