Clinical Application of Single Hole Laparoscopic Treatment for Benign Gynecological Diseases Through the Umbilical Cord

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Abstract: Objective: To explore the effect of Laparoscopy through single umbilical hole in the treatment of gynecological benign lesions. Method: Forty patients who received treatment for gynecological diseases in our hospital from April 2021 to May 2022 were selected as the main research subjects. By organizing the gynecological diseases of each patient, they were diagnosed with benign diseases, and summarizing various clinical data, the patients could be divided into two groups: one group used single hole laparoscopic treatment, the other group used traditional treatment, the experimental group used single hole laparoscopic patients, and the control group used traditional treatment. There are 20 patients in each group. Record the operation indicators of the two groups of patients, including the operation time, intraoperative blood loss, postoperative time out of bed, length of hospital stay, and frequency of Analgesic use. It is more important to understand the satisfaction of patients, record the recovery of patients after surgery, prevent infection of patients, and finally complete systematic analysis of various collected data. Result: The postoperative recovery and satisfaction of patients in the experimental group were higher than those in the control group. The bleeding rate of the control group patients was higher than that of the experimental group patients, and the probability of complications was higher than that of the experimental group patients. The differences were statistically significant ($P<0.05$). Conclusion: Transumbilical single port laparoscopy is a kind of Minimally invasive procedure technology. The patients have a small area of trauma, and at the same time, it has a certain cosmetic effect on the wound. This technology is very consistent with the current development trend of Minimally invasive procedure. For benign gynecological diseases, it has a good therapeutic effect and high safety. The probability of complications for patients after surgery is low, and this technology is less prone to leaving scars on the patient's body after use. The appearance of the body is beautiful, and the disease is easily accepted by female patients, with high clinical value.

Keywords: Transumbilical Single Hole Laparoscopy; Benign Gynecological Lesions; Traditional Laparoscopy; Intraopera tive Bleeding

1. Materials and Methods

1.1 General Information

The 40 patients who came to our hospital for treatment of gynecological diseases from April 2021 to May 2022 were sorted out as the main research objects. According to the different surgical methods, they were divided into the experimental group and the control group. The experimental group used single aperture Minimally invasive procedure, and the control group used traditional surgical methods, with 20 cases in each group. In the experimental group, patients were aged 23-56 years old, with an average age of (36.13 ± 6.44) years; 15 cases were married and 5 cases were unmarried; There were 12 cases of tubal pregnancy, 9 cases of Ovarian cyst, 5 cases of Uterine fibroid, 3 cases of rupture of ovarian corpus luteum, and 7 cases of infertility. In the control group, patients aged 22-49 years old had an average age of (33.21 ± 4.32) years; 18 cases were married and 2 cases were unmarried; There were 1 case of tubal pregnancy, 6 cases of Ovarian cyst, 8 cases of Uterine fibroid, 4 cases of rupture of ovarian corpus luteum, and 1 case of infertility. The general information of the two groups of patients was analyzed by statistical software, and the difference was not statistically significant ($P>0.05$), indicating

comparability. Both groups of patients are aware of the content of this study and have signed informed consent forms. This study has been approved by the Medical Ethics Committee of our hospital.

1.2 Inclusion and Exclusion Criteria:

Firstly, the patient undergoes gynecological diagnosis to ensure good uterine activity. Secondly, the patient's clinical data is relatively complete and they are eligible for surgery. Third, except for gynecological diseases, the patient does not have other major diseases that seriously threaten the patient's life. The heart and brain, including all major organs, do not have canceration. Minor diseases or Suboptimal health status will not affect the patient's body to have serious conditions. No contraindications for surgery. Fourthly, the patient's navel is normal.

Exclusion criteria: first, patients with Endometriosis and pelvic inflammation could not participate in the experiment; second, patients with abdominal infection; third, patients with malignant diseases; fourth, patients with coagulation dysfunction; fifth, patients with mental illness.

1.3 Method

All patients in the two groups were anesthetized with Tracheal intubation, the buttocks were taken high and the head was taken low, and the abdominal pressure was set at 13kPa. In the single port group, Laparoscopy was performed through the umbilical single port. A longitudinal incision of 2-3 cm was made in the middle of the patient's umbilical part, and then Subcutaneous tissue, fascia, and peritoneum were cut. Then, the incision dilator and the port of the operation hole were placed into the incision to construct an artificial pneumoperitoneum. The best pressure was 12~13 mmHg (1 mmHg ≈ 0.133 kPa). Laparoscopic instruments were used to explore the abdominal cavity and pelvic cavity in detail. For patients with Ectopic pregnancy, tubal fenestration and embryo extraction were carried out. For patients with Uterine fibroid, endoscopic removal was carried out. For patients with Ovarian cyst, cyst removal was carried out. For infertility, tubal intubation and fluid instillation and plastic ostomy were carried out. After the operation, the specimens were taken out and sent for inspection.

1.4 Observation indicators

Record in detail the various surgical indicators of the two groups of patients, including the time of surgery, intraoperative bleeding, time to get out of bed after surgery, length of hospital stay, frequency of using painkillers, and patient satisfaction with the surgery. Record the occurrence of complications in clinical practice and conduct comparative analysis. Complications mainly include abdominal infection, bleeding, incision infection, and Subcutaneous emphysema. The incidence of complications=(abdominal infection+bleeding+incision infection+Subcutaneous emphysema) cases/total cases × 100%. Using the self-made surgical satisfaction evaluation form from our gynecology department, the satisfaction level of the surgery is evaluated, with a maximum score of 100 points. It is divided into four items, namely very satisfied, generally satisfied, relatively satisfied, and dissatisfied. The scoring criteria are: very satisfied (score ≥ 80 points on the evaluation form), generally satisfied (score 70-79 points on the evaluation form), relatively satisfied (score 60-69 points on the evaluation form), and dissatisfied (score<60 points on the evaluation form), Satisfaction=(very satisfied+generally satisfied+relatively satisfied) number of cases/total number of cases × 100%.

Comparison of postoperative complication rates between two groups:

group	Incision infection (case)	Incision bleeding (case)	Incision hernia (case)	Poor wound healing (cases)	Total examples (%)
Control group (n=20)	2	1	1	1	6(3.00)
Experimental group (n=20)	1	0	1	0	2(1.00)
X value					0.0865
P-value					<0.05

Comparison of overall satisfaction rates between two groups regarding the cosmetic effect of abdominal incisions:

group	Very satisfied (example)	Satisfied (Example)	Dissatisfied (Example)	Total satisfactory cases (%)
Control group (n=20)	15	2	3	17(85)
Experimental group (n=20)	18	1	1	19(95)
X value				0.0127
P-value				<0.05

Conclusion: The clinical application of transumbilical single port laparoscopic treatment for benign gynecological diseases is safe and feasible. Compared with conventional Laparoscopy, it has low trauma, fast recovery, high safety and good cosmetic effect.

2. Discussion

Compared with conventional laparoscopy, transumbilical single hole Laparoscopy surgery has certain advantages. Compared with traditional laparoscopy, minimally invasive technology can reduce the wound surface of the patient's body, and the patient's body will not leave large scars. For female patients, beauty is a very important content, so improving the technology of traditional laparoscopy can complete the protection of the beauty of the patient's body. Through the use of transumbilical single port laparoscopic technology, the satisfaction of leaving incisions on the patient's body is relatively high, and the probability of complications occurring on the patient's own is also decreasing. Suturing is done within the fascia, which can effectively reduce scars and make it easier for female patients to accept. The use of single hole Laparoscopy will cause less trauma to patients, and will have less impact on the abdominal Internal environment, which is conducive to reducing the incidence of complications. In addition, specimens can be easily taken out during surgery, which is conducive to preservation.

It should also be noted that single hole laparoscopic surgery requires high technical requirements and requires experienced physicians to perform the procedure. Physicians must master the indications for single hole surgery and accurately and timely stop bleeding during the surgery process to ensure that there is no bleeding after tissue detachment. They must also operate accurately during electrocautery and electrocoagulation to avoid damaging other organs. After the specimen is taken out, the pelvic and abdominal cavities should be carefully and comprehensively examined to ensure that there are no abnormalities.

References

[1] Zheng MH, Ma JJ, Hong XZ. Hot topics and progress in minimally invasive gastrointestinal surgery. Chinese Journal of Digestive Surgery, 2021.

[2] He F, Nie XC. Comparison of the effect of Ectopic pregnancy treated by single hole laparoscopy and multi hole Laparoscopy. Contemporary Chinese Medicine, 2020.

[3] Jia YF, Zhang YH, Liu Q. Comparative study of three different approaches in transumbilical single port laparoscopic Hysterectomy. Journal of Practical Obstetrics and Gynecology, 2020.