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Application of Single Hole Laparoscopic Technique in Gynecological Accessory Surgery

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Abstract: Objective: To explore the application of single hole laparoscopic technique in gynecological accessory surgery. Methods: From January 2021 to December 2022, 30 patients in the hospital department who applied single hole laparoscopic appendage surgery were selected for the experiment. Thirty patients were divided into the control group and the observation group, with 15 patients in each group. The patients in the control group were treated with conventional three hole laparoscopic surgery, and the patients in the observation group were treated with single hole Laparoscopy. The relevant indicators of patients in the two experimental groups during the operation and the scores of postoperative recovery were compared. Result: After the experiment, it was found that the sample removal time of the observation group patients was significantly faster than that of the control group. The pain score of the observation group patients at 24 hours after surgery was significantly lower than that of the control group, and the incision beauty score of the patients at 14 days after surgery was higher than that of the control group, with a statistically significant difference ($P<0.05$). Conclusion: The application of single hole laparoscopic surgery in gynecological accessory surgery has a good effect. This type of surgical treatment will make patients more satisfied. Compared with conventional Laparoscopy, it can better reduce the postoperative scar of patients.

Keywords: Single Port Laparoscopic Technique; Gynecology; Attachment Surgery; Application

Introduction

At present, three hole and four hole Laparoscopy are the most commonly used surgical methods in gynecological clinic in China. These operations have good effects. Single hole Laparoscopy is mainly performed with the help of natural scars on the human umbilical. According to relevant survey data, the effect of single hole Laparoscopy in the treatment of gynecological accessory diseases will be better. This type of surgery can achieve the goal of scar free abdominal wall, which is more beautiful and can effectively improve the quality of life of current young women. Exploring the application effect of single hole laparoscopic technology in gynecological accessory surgery, analyzing the safety and feasibility of its surgical treatment method, the following report is presented.

1. Experimental Data and Methods

1.1 Experimental data

Collect information on 30 patients who underwent single port laparoscopic appendage surgery in the hospital from January 2021 to December 2022, and use them as experimental subjects. Among them, the observation group had a minimum age of 22 years and a maximum age of 37 years, with an overall average age of 30 years; The minimum body mass is 20kg/m2, the maximum body mass is 23kg/m2, and the average body mass is 22kg/m2; 4 cases were unmarried and 11 cases were married; There were 8 cases of fallopian tube lesions and 7 cases of ovarian lesions. The minimum age of patients in the control group was 23 years old, and the maximum age was 36 years old, with an overall average age of 30 years; The minimum body mass is 20kg/m2, the maximum body mass is 22kg/m2, and the average body mass is 22kg/m2; 5 cases were unmarried and 10 cases were married; There were 9 cases of fallopian tube lesions and 6 cases of ovarian lesions. The general data comparison between the two experimental groups showed no statistically significant difference ($P>0.05$), indicating comparability.

1.2 Experimental Methods

The patients in the two experimental groups used the same preparation method before surgery. They prepared skin routinely and

cleaned the umbilicus position of the patients. They should abstain from eating and drinking. In the afternoon before surgery, they needed to take compound polyethylene glycol orally for intestinal preparation, and Tracheal intubation was used for general anesthesia.

The patients in the control group used conventional laparoscopic three hole surgery. The pneumoperitoneum needle was placed in the longitudinal incision at the lower edge of the patient, and carbon dioxide was injected. After the pressure reached 13 mmHg, the laparoscopic probe was used for exploration. In combination with the type of disease of the patient, appropriate operating instruments were selected for subsequent treatment such as removal of Ovarian cyst.

The patients in the observation group were treated with single hole Laparoscopy. Using the special equipment for single hole laparoscopic surgery, a 2 to 3 cm arc skin incision was made at the upper edge of the patient, and the pneumoperitoneum needle was punctured into it. The pneumoperitoneum was constructed. When the patient's pneumoperitoneum pressure was maintained at about 13 mmHg, a PORT was set in the middle of the arc incision to explore the patient's pelvic cavity and abdominal cavity, and evaluate the feasibility of single hole surgery through the umbilical cord. According to the type of patients, different operating equipment should be selected to perform partial salpingectomy or Ovarian cyst stripping on the affected side. If necessary, use a specimen bag to remove the specimen and send it to the pathological examination. After the surgery is completed, remove the puncture sleeve and stitch the position of the patient's umbilical incision layer by layer, with 2 intermittent stitches.

2. Results

2.1 Comparison of specimen retrieval times between two groups of patients

The sample removal time of patients in the observation group was significantly faster than that of the control group, and the difference was statistically significant ($P<0.05$), as shown in Table 1.

group	Number of cases	Sample removal time
Observers	15	15.30±5.64
control group	15	22.36±6.75
P		＞ 0.05

2.2 Comparison of surgical related indicators and incision beauty scores between the two groups

The pain score of patients 24 hours after surgery will be significantly lower than that of the control group, and the incision beauty score of patients on the 14th day will exceed that of the control group on the 14th day after surgery, with a statistically significant difference ($P<0.05$).

3. Conclusion

Laparoscopy is a particularly important treatment for gynecological accessory diseases, and its role is particularly significant. With the improvement of people's living standards at this stage, under the influence of various factors, the number of gynecological patients who choose Laparoscopy continues to increase, and with the improvement of people's requirements for the quality of surgery, Laparoscopy not only needs to ensure the treatment effect, but also should gradually achieve the goal of minimizing surgical trauma. The application of single hole Laparoscopy through the umbilical cord will cause less surgical trauma, and there is no statistical difference between the exhaust time, intraoperative bleeding, etc. and the relevant indicators of conventional Laparoscopy. However, the time for taking out the specimen of single hole surgery will be shorter, the overall patient's postoperative pain score will be lower, and the aesthetic satisfaction will be higher ($P<0.05$), which is roughly the same as the results of previous studies. Single hole Laparoscopy can significantly reduce the removal time, prevent the embarrassment of traditional treatment of cutting tissue and remove, and reduce the risk of specimen residue, because the removal hole is large during specimen removal. Single hole Laparoscopy has all the advantages of traditional laparoscopy, so it is more and more popular with patients, so it has good prospects for development. However, the traditional Laparoscopy instrument is difficult to overcome the bottleneck of single hole laparoscopy, and the bendable instrument has poor controllability and is not an ideal tool. At present, almost all research-

ers focus on the research and development of robot systems. LESS has many advantages that are worth promoting, and problems such as surgical instruments and techniques can also be effectively solved. However, it is not suitable for everyone and has its own indications. The evaluation of its safety and feasibility should be comprehensively considered based on the patient's situation. Individualization of Minimally invasive procedure is reflected in every link of diagnosis and treatment. Blind minimally invasive surgery will increase the potential risks of surgery and anesthesia. Therefore, when using LESS technology, it is necessary to understand the gynaecological diseases, the patient's age, basic status, whether there are complex complications and other complications, previous surgical history, beauty requirements, economic conditions and other factors, and also consider the local medical equipment and medical resources at the time. Using the existing Da Vinci robotic surgery system, KaouK and others have completed robotic single hole Laparoscopy. The new generation of flexible robot systems has successfully completed nephrectomy and pyeloureteroplasty on animals, and it is believed that they will also be applied in the field of gynecology in the near future, making greater contributions to the vast number of gynecological patients.

To sum up, the single hole laparoscopic technique is an important part of Laparoscopy. The application of its surgical method can effectively reduce the postoperative pain of patients, improve the body surface aesthetics, and its operation will be less difficult, with advantages such as convenient operation. Operators need to possess certain operational skills and grasp the indications of patients in order to provide more suitable surgical treatment services and reduce postoperative scars.

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