

Analysis of laparoscopy on endometriosis patients with high expression of CA125

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Abstract. – OBJECTIVE: To analyze the clinical effect of laparoscopy on patients with endometriosis and a high expression of CA125.

PATIENTS AND METHODS: One hundred cases of endometriosis treated in our hospital from May 2012 to August 2014 were selected as research subjects, after approval from the hospital and the informed consent of patients. The subjects were randomly divided into a control group and a study group with 50 cases in each group. The control group underwent the traditional surgery, while the research group underwent laparoscopy. The clinical curative effect were compared between the two groups of patients.

RESULTS: The research group's postoperative 6h, 12h, 24h CA125 levels were compared to those of the control group. There was statistically significant difference between groups ($p < 0.05$). Surgery and hospitalization time, intraoperative bleeding volume, and and incision length index of the two groups of patients were compared. There were statistically significant differences between the two groups ($p < 0.05$).

CONCLUSIONS: Laparoscopic surgery in endometriosis patients with high expression of CA125 is curative, and the patients' recovery after surgery is promising.

Key Words:

Laparoscopy, Endometriosis, Open operation, Epithelial ovarian cancer associated antigen.

occurrence of endometriosis has certain relevance with patients' immune function, genetic factors, and environmental factors¹⁻². As research continues to develop, the CA125 (epithelial ovarian cancer associated antigen) expression level in patients with endometriosis may abnormally increase and is related to the progression of the disease³⁻⁴. The change of CA125 level, can often prompt clinical therapeutic efficacy of patients with endometriosis. In this study an in-depth analysis is performed on the clinical effect of laparoscopy on endometriosis patients with CA125 and provides a scientific basis for clinical application.

Patients and Methods

One hundred cases of endometriosis treated in our hospital from May 2012 to August 2014 were selected as research subjects, after the approval from the hospital and the informed consent of patients. The patients were randomly divided them a control group and a study group with 50 cases in each group. The patients in the control group were between 25 to 43 years old with an average age of (36.4 ± 5.5). Clinical manifestations were as follows: 12 cases of dysmenorrhea, 15 cases of sexual intercourse pain, 13 cases of irritation sign of bladder, and 10 cases of infertility. The patients in the research group are 23 to 46 years old with an average age of (35.8 ± 7.5). Clinical manifestations were as follows: 11 cases of dysmenorrhea, 14 cases of sexual intercourse pain, 14 cases of irritation sign of bladder, and 11 cases of infertility. The inclusion criteria: clinical pathological diagnosis confirmed endometriosis; patients without hematological system, liver and kidney organ function disorder; good clinical compliance; agree with the research plan. Compare age and clinical manifestations of two groups of patients, and there is no significant difference ($p > 0.05$).

Introduction

Endometriosis (EM) is a common benign gynecological disease. In recent years, the incidence is significantly rising. Women's uterine and pelvic cavity connect through the fallopian tube during child-bearing period. And the endometrial cells in the uterine cavity through the fallopian tube uterine are grow into the pelvic cavity. When implanted, the cells grow in the pelvic region to form an ectopic pregnancy. The

The control group underwent the traditional surgery with the patient in the supine position, with their abdominal cavity fully exposed. Spinal epidural anesthesia or general anesthesia was used according to the patient's condition. The location near the lesion site was selected as incision position so that the doctors could reach the affected area in the shortest time. When cutting the skin, the blade should be perpendicular to the skin and the pressure should be administered equally. After cutting the skin tissue layer by layer, a lesion resection was performed. Based on the actual needs of the patients, we considered whether to remove the uterus and the ovarian tissues. After surgery, the incision was closed, and we implemented preventive treatment with antibiotic and anti fungal drugs.

The research group used laparoscopic operation for the treatment. The position and anesthesia is the same as the control group, and the clinicians inserted a laparoscopic lens (about 6.5 mm diameter) into the abdomen and deep pelvic region of the patients. After determining the lesion sites of patients with ectopic pregnancy, a biopsy was performed. Based on the laparoscopic examination results, we determined the clinical staging of pelvic endometriosis. The laparoscope CO₂ laser or helium-neon laser was used to cauterize lesion. In the 2.5 cm pubic symphysis, a second incision was performed, and the lesion was cauterized under the laparoscope. The cystic fluid was obtained by laparoscopic puncture aspiration, and 500 ml physiological saline was repeatedly washed. Then, we injected five 10 ml ethanol, and fixed for 10 min and then aspirated. At the same time, the uterine, tubal, ovarian, uterine sacrum ligament, and pelvic peritoneum were observed to check whether the patient had endometriosis lesions. After the lesion resection under laparoscopy, the wound was closed.

During treatment, a chemiluminescence method was used to determine the CA125 level

(CA125 constant value < 35U/ml) of endometriosis in the patients. Surgery and hospitalization time, bleeding quantity, and incision length of patients in the two groups at 6h, 12h, 24h before and after surgery, were recorded as the results.

Statistical Analysis

All data was processed with statistical software SPSS17.0 (SPSS Inc., Chicago, IL, USA). The measurement data is shown by mean ± standard deviation (± s) with *t* test, and *p* < 0.05 indicates the statistically significant difference.

Result

The CA125 levels of the two groups of patients were compared at 6h, 12h, 24h before and after surgery. There were statistically significant differences between the groups (*p* < 0.05) (Table I).

The clinical observation indexes of two the groups of patients were compared. This included the time for surgery, bleeding volume during surgery, hospitalization time, and incision lengths of the two groups. There were statistically significant differences (*p* < 0.05) between the two groups (Table II).

Discussion

CA125 is an epithelial ovarian cancer associated antigen, and the antigen exists in the embryonic stage of the coelomic epithelium, such as the endometrium and the endometrial peritoneum in women of reproductive age. A clinical study (Barbieri RL, Niloff JM, Bast RC Jr, Scaetzel E,

Table I. CA125 level comparison of the two groups of patients 6h, 12h, 24h before and after operation ($\bar{x} \pm s$) U/ml.

Group	N	The level of CA125			
		Preoperative	Postoperative 6h	Postoperative 12h	Postoperative 24h
Control group	50	55.75 ± 5.25	48.55 ± 5.05	43.10 ± 4.35	37.50 ± 3.75
Research group	50	55.80 ± 5.20	42.25 ± 5.00	38.35 ± 4.20	34.25 ± 3.50
<i>t</i>		0.414	2.324	2.459	3.410
<i>p</i>		> 0.05	< 0.05	< 0.05	< 0.05

Table II. Clinical observation indexes comparison of two groups of patients ($\bar{x} \pm s$).

Group	N	Operation time (min)	Bleeding volume in operation (ml)	Hospitalization time (d)	Incision length (cm)
Control group	50	88.50 ± 12.55	110.35 ± 9.00	6.75 ± 1.25	4.25 ± 1.00
Research group	50	50.25 ± 10.20	48.75 ± 8.25	3.50 ± 1.00	1.75 ± 0.55
<i>t</i>		2.875	2.998	3.435	3.540
<i>p</i>		< 0.05	< 0.05	< 0.05	< 0.05

Kistner RW, Knapp RC. Elevated serum concentrations of CA-125 in patients with advanced endometriosis. *Fertil Steril* 1986; 45: 630-634.) confirmed that the CA125 level of endometriosis patients significantly increases and is positively correlated with the progression of the disease. He discovered that the more serious the endometriosis was, the higher the CA125 content would be. The main reason is that CA125 is a glycoprotein antigen component of the Mullerium tube derivative and the neoplastic tissues, and that the endometrial belongs to the Mullerium derived tissues; thus, it contains CA125. So clinically, CA125 should be a reference index of endometriosis⁵⁻⁷.

With evolving medical technologies, CA125 detection will help with the treatment of endometriosis. Many authors have launched an in-depth analysis to investigate the correlation between CA125 levels and endometriosis. CA125 in patients with endometriosis and normal human serum by enzyme-linked immunosorbent assay (ELISA) and found that the CA125 level of the endometriosis patients was significantly higher than that of normal people. The CA125 level of patients with severe endometriosis was significantly higher than that of patients with light endometriosis. It was discovered that the CA125 levels in the serum rose as the endometriosis progressed. The higher the expression, the more serious the patient's endometriosis would be. After active treatment, the CA125 level is significantly reduced, which confirms the research of foreign scholars and, thus, can be used as contrast index of the clinical effect of endometriosis⁸⁻¹⁰. However, with the gradual application of modern diagnostic equipment, we discovered that CA125 as a cell surface glycoprotein also has a high expression level in more than 80% of the non-cohesive epithelial ovarian cancer diseases. In gynecological clinics cases of benign diseases such as pelvic infection, uterine fibroids, abortion induced by chromoso-

mal abnormalities have risen, signifying that CA125 in serum cannot truly reflect the clinical treatment effect. The application of CA125 has also caused widespread controversy in medical field¹¹⁻¹³.

Laparoscopy as a minimally invasive treatment can provide clear insight to the patients' lesions. The lesion can be removed easily because the surgical incision is small and intraoperative blood loss of patients decreases substantially. The postoperative results are ideal and the hospitalization time is shortened¹⁴⁻¹⁶. Its application in the clinical treatment of endometriosis patients with high CA125 expression can prompt clinicians to observe the lesion location and surrounding tissues through the peritoneal laparoscopic lens. Then, based on the patient's status develop specific treatment program¹⁷⁻¹⁹.

Conclusions

In this study, the high expression of CA125 in the research group decreased from preoperative (55.80 ± 5.20) U/ml to postoperative 24h (34.25 ± 3.50) U/ml, while the control group was (37.50 ± 3.75) U/ml, compared with the normal value 35U/ml. The time of surgery (50.25 ± 10.20) min, amount of bleeding during surgery (48.75 ± 8.25) ml, the time of hospitalization (3.50 ± 1.00) d, length of incision (1.75 ± 0.55) cm were significantly better than the control group (88.50 ± 12.55) min, (110.35 ± 9.00) ml, (6.75 ± 1.25) d, (4.25 ± 1.00) cm. The results confirm that laparoscopic surgery on endometriosis patients with high expression of CA125 is curative, and the recovery of patients after surgery yields good results²⁰.

Conflict of Interest

The Authors declare that there are no conflicts of interest.

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