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Laparoscopic Radical Cystectomy for 32 Cases of Bladder Cancer

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ABSTRACT. *Objective to evaluate the effect of laparoscopic radical cystectomy for 32 cases of bladder cancer. Methods 64 patients with bladder cancer admitted from March 2017 to November 2019 in our hospital were divided into laparoscopic group (laparoscopic radical cystectomy) and open group (open radical cure) according to different surgical treatment methods Cystectomy (32 cases). Observe and compare the perioperative indexes, incidence of postoperative complications, postoperative bladder function indexes and pain scores of the two groups. Results The laparoscopic group had shorter operation time and hospital stay, lower intraoperative blood loss and postoperative pain score, postoperative exhaust time to restore eating time, shorter intestinal function recovery time, and lower postoperative complication rate, and The control group had statistical difference (p <0.05). Conclusion The laparoscopic radical cystectomy for bladder cancer patients has shorter operation time and less intraoperative bleeding, which can reduce the occurrence of postoperative pain and complications. The bladder function recovery of patients is faster and the curative effect is accurate.*

KEYWORDS: *Laparoscopy, Bladder cancer, Radical cystectomy, Bladder function*

1. Introduction

Bladder cancer is a relatively common malignant tumor in clinic. Among male malignant tumor diseases, the incidence is the fourth. Although China is not a country with a high incidence of bladder cancer, in recent years, with the increase of environmental pollution and changes in people's living habits, the incidence of bladder cancer in China has increased significantly. Surgery is the most effective method for the treatment of bladder cancer. Radical cystectomy is suitable for muscular invasive bladder cancer without distant metastasis and high-recurrence non-muscle invasive bladder cancer. A 25 cm incision is easy to leave scars and is not easily accepted by patients. Thanks to the development of laparoscopic technology, since 1992, the first laparoscopic foreign cystectomy was performed abroad[1-2]. Laparoscopic radical cystectomy has been popularized and widely used in clinical practice. In order to explore the effect of laparoscopic radical cystectomy on patients with bladder cancer, this article conducted a study on some patients with bladder cancer treated in our hospital from March 2017 to November 2019.

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2. Materials and Methods

2.1 General Information

64 patients with bladder cancer admitted from March 2017 to November 2019 in our hospital were divided into laparoscopic group (laparoscopic radical cystectomy) and open group (open radical cure) according to different surgical treatment methods Cystectomy treatment), 32 cases each. In the laparoscopic group, there were 26 males and 6 females; the minimum age of the patients was 38 years, the maximum age was 71 years, and the average was (53.20 ± 2.11) years; 10 cases of muscular invasive bladder cancer and 22 cases of non-muscle invasive bladder cancer; The diameter of the tumor is 0.7-2.1 cm, with an average of (1.40 ± 0.12) cm. In the open group, there were 24 males and 8 females; the minimum age was 40 years, the maximum age was 72 years, and the average age was (54.10 ± 2.07) years; 12 cases were muscular layer invasive bladder cancer and 20 cases were non-muscle layer invasive bladder cancer; The diameter of the tumor is 0.7-2.1 cm, with an average of (1.60 ± 0.15) cm. There was no significant difference in baseline data between the two groups (P> 0.05), which can be compared.

This study has been approved by the Ethics Committee of our hospital, and the inclusion criteria are: (1) those diagnosed by cystoscopy and biopsy; (2) preoperative cardiac function is good; (3) conform to the indications for radical cystectomy; (4) The compliance is good; (5) Patients and their families are informed about the content of this study. Exclusion criteria[3]: (1) those with abnormal coagulation function and disorders; (2) those with allergies to narcotic drugs; (3) those with severe organic lesions; (4) those with incomplete clinical data; (5) those with distant tumor metastases.

2.2 Method

Two groups of patients stopped all anticoagulant drugs one week before surgery, and routinely performed liver function, kidney function, electrocardiogram and other examinations before surgery to comprehensively evaluate the patients' cardiopulmonary function and bladder function. One night before the operation, the patient was instructed to eat easily digestible and soft food. Clean the enema early in the morning on the day of surgery, routinely indwell the gastric tube, and add electrolytes appropriately. Before surgery, skin preparation of the perineum is routine, antibiotics and sedative drugs are routinely used.

In the open group, open radical cystectomy was performed, and endotracheal intubation was used for general anesthesia. The patient was placed in a supine position and disinfected towels were routinely laid. Choose an incision of about 20 cm in the middle of the patient's lower abdomen, cut the subcutaneous tissue, rectus abdominis, and other tissues in sequence, so that the anterior bladder space is fully exposed to the visual field. Look for the ureter along the bifurcation of the iliac blood vessel. After separating the right ureter, cut the free ureter at the pelvic

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position of the patient and ligate it at the distal position. After recording and properly fixing the catheter, treat the left ureter in the same way, and then clean the patient's pelvic lymph nodes. Select the top of the bladder to cut the pelvic peritoneum, cut the mid-umbilical ligament and separate the bladder from the peritoneum to the bottom of the bladder. After locating the vas deferens, the vasectomy is cut and ligated, the posterior bladder ligament and vascular pedicle are removed, the neurovascular bundle is kept as far as possible, the urethral membrane is removed and removed, and the ileal bladder replacement is continued.

The laparoscopic group underwent laparoscopic radical cystectomy, and the anesthesia method was the same as that of the control group. The patient took the head low and raised the patient's buttocks, laid disinfectant towels regularly, and the operating bed was tilted by 30 degrees. Perform puncture in the patient's subumbilical, lateral rectus abdominis muscles, wheat pilot and anti-wheat pilot locations. First, perform puncture in the patient's subumbilical site, take a small circular incision, separate the muscle tissue, pull the skin and establish an artificial pneumoperitoneum. The pressure is maintained in the range of 12 to 15 mm Hg. A 10 mm trocar was placed at the first puncture point and the incision was sutured. Four other cannulas were placed with the aid of a laparoscope. A 12 mm cannula was placed beside the puncture point of the right rectus abdominis, and another 5 mm cannula was placed. Cut the peritoneum and vascular sheath on the left side of the patient along the right external iliac artery surface, and use the same method as the control group to remove the lymph nodes. Use an ultrasonic knife to open the posterior wall of the bladder. After separating the bilateral vas deferens, separate the anterior wall of the prostate and rectum, and continue to separate the left and right side walls of the bladder. After distal separation, bluntly separate the anterior bladder space, cut the dorsal deep vein complex, completely free the bladder and prostate and excise. Make all openings in the lower abdomen of the patient, take out the patient's bladder, prostate and lymph nodes, and use the ileal neo-bladder, ileal bladder, ureteral skin ostomy and other urinary diversion procedures according to the patient's condition.

Both groups of patients underwent continuous ECG monitoring, intravenous nutritional support, and antibiotics to prevent infection.

2.3 Observation Indicators

Observe and compare the perioperative indexes, incidence of postoperative complications, postoperative bladder function indexes and pain scores of the two groups. The evaluation of pain level adopts visual analog scoring method. Before the evaluation, the patient is informed of the scoring method. The patient independently chooses the number that best represents his own pain level. The larger the number, the more obvious the patient's pain.

2.4 Statistical Methods

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The SPSS 21.0 software package was used to process the two sets of data. The measurement and count data were expressed as (x ± s) and (n), respectively. Comparison between groups and chi-square test were used. The difference was statistically significant at P <0.05.

3. Result

(1)Comparison of perioperative indicators and pain between the two groups

The laparoscopic group had shorter operation time and hospital stay, and the intraoperative blood loss and postoperative pain score were lower, which was statistically different from the control group (p <0.05). See Table 1 for details.

Table 1 Perioperative Indexes And Pain Scores of the Two Groups

Group	operation time(h)	Intraoperative blood loss(mL)	hospital stays(d)	VAS score
Laparoscopy group	3.16±0.11	482.00±120.10	12.60±0.61	4.31±0.36
Open Group	4.49±0.09	572.60±108.50	18.80±0.54	6.25±0.43
t	3.803	3.769	3.714	3.732
P	<0.05	<0.05	<0.05	<0.05

(2)Comparison of postoperative bladder function between the two groups

The laparoscopic group had a shorter postoperative exhaust time recovery time and intestinal function recovery time, which was statistically different from the control group (p <0.05). See Table 2 for details.

Table 2 Relevant Indexes of Postoperative Bladder Function of Two Groups of Patients (d)

Group	Postoperative exhaust time	Resume eating time	Bowel function recovery time
Laparoscopy group	3.20±0.03	3.06±0.08	3.98±0.81
Open Group	4.10±0.05	4.20±0.11	4.47±0.76
t	3.741	3.725	3.709
P	<0.05	<0.05	<0.05

(3)Comparison of the incidence of complications between the two groups

The incidence of postoperative complications was lower in the laparoscopic group, which was statistically different from the control group (p <0.05). See Table 3 for details.

Table 3 the Incidence of Recent Complications in the Two Groups

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Group	Intra-abdominal hemorrhage	Hydronephrosis	Urinary incontinence	Total incidence(%)
Laparoscopy group	0	0	1	3.13
Open Group	2	2	3	21.88
X^2				5.206
P				<0.05

4. Discuss

Bladder cancer is the sixth most common malignant tumor in the world, and its mortality rate is high. There are data showing that bladder cancer deaths in the United States, male patients account for 3% of tumor deaths[4-6]. China is not a country with a high incidence of bladder cancer, but the incidence of bladder cancer has increased in recent years. Bladder cancer can be divided into muscular invasive bladder cancer and non-muscle invasive bladder cancer, the latter is more common, accounting for about 80% of bladder cancer patients[7]. Surgery is the most common way to treat bladder cancer, including transurethral resection of bladder tumors and radical cystectomy. Data indicate that patients with non-muscle invasive bladder cancer treated by transurethral resection of bladder tumors are prone to relapse after surgery, and high-risk patients have a half the chance of developing muscular invasive bladder cancer, with a poor prognosis. Therefore, for patients with muscular invasive bladder cancer without distant metastasis and high-grade non-muscle invasive bladder cancer, it is mostly recommended to use radical cystectomy and simultaneous pelvic lymphadenectomy to reduce postoperative recurrence Rate to prevent distant metastasis of the lesion. However, open radical cystectomy has a larger surgical incision, more bleeding during the operation, and it is easy to leave scars, and the patient's recovery after surgery is slow.

Since the application of laparoscopic technology in the treatment of clinical diseases, it has been widely developed. Laparoscopic radical cystectomy has a smaller incision and a lower possibility of infection in the incision, which is beneficial to the patient's recovery after surgery. And some studies have shown that compared with traditional open surgery, laparoscopic radical cystectomy is more convenient to clean the lymph nodes of patients with muscular invasive bladder cancer. Doctors can use laparoscopy to clearly understand the structure of lymph nodes and obturator nerves[8]. More precise treatment of important structures in the deep pelvic floor, due to the magnifying effect of laparoscopic, can avoid damage to nerves, and can make up for the shortcomings of erectile dysfunction after radical laparoscopic cystectomy

In this study, the laparoscopic group had shorter operation time and hospital stay, lower intraoperative blood loss and postoperative pain score, postoperative exhaust time to restore eating time, shorter intestinal function recovery time, and postoperative complication rate It was lower and had statistical difference with the control group ($p < 0.05$). The consideration is that laparoscopy can enlarge the

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surgeon's field of vision, making it easier for the doctor to recognize the shape of the blood vessel and reduce blood vessel bleeding, and the artificial pneumoperitoneum established during the surgery can reduce venous bleeding. Due to the small incision of the laparoscopic surgery, the patient recovered faster after the operation. According to this study, laparoscopic radical cystectomy for patients with bladder cancer has shorter operation time and less intraoperative blood loss, which can reduce the occurrence of postoperative pain and complications and restore the bladder function of patients Faster and definite effect.

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