

Analysis of the Effect of Three - Row Nail in Gastric Cancer Operation

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ABSTRACT

To explore the clinical application of three-row stapler in the operation of gastric cancer, and to provide a reference for clinical application. 31 patients with gastric cancer from January 2015 to April 2017 were randomly divided into observational group and control group. The observational group (n = 16) received three rows of the stapler; the control group (n = 15) received two rows of the stapler. The general condition, complication and anastomotic condition of the two groups were recorded, and the occurrence of anastomotic leakage was tested by methylene blue test. There was no significant difference in the operation time between the two groups ($P > 0.05$). The length of stay in the hospital for the observational group was (16.17 ± 5.25) d, which was significantly lower than that of the control group (22.35 ± 7.18) d, the difference was statistically significant ($P < 0.05$). The incidence of complications was 7.14%, which was significantly lower than that of the control group (26.67%, $P < 0.05$). The number of bleeding in the anastomosis of the observational group was (0.87 ± 0.61), and the number of the outermost anastomosis was 0.95 ± 0.49 , which was significantly lower than that of the control group ($P < 0.01$). In the observational group, only one case (6.28%) was positive in the methylene blue test, which was significantly lower than that in the control group (20%) ($P < 0.05$). Three-row stapler can be used to treat the traditional two-row nail stapler, and no external reinforcement is needed after anastomosis. At the same time, it can effectively control the anastomotic bleeding, outer ring nail exposure and anastomotic leakage complications occur and clinical hospital stays shorter, more efficient treatment, worthy of clinical application.

Introduction

Gastric cancer is one of the common clinical malignant diseases, accounting for the first major incidence of malignant tumors in China. Clinical treatment to surgical resection, in practical application, radical gastrectomy has been completely applied stapler anastomosis instead of the traditional manual anastomosis. But it is worth noting that the use of staplers in the domestic and abroad are two rows of stapler-based, after anastomosis often appear anastomosis within the mouth bleeding, anastomosis and anastomotic leakage and other complications, poor prognosis of patients. Chen Yuxiang and colleagues[1], studies have pointed out that, when the anastomosis mouth of two rows of stapler slightly stretch, it can appear in varying degrees of anastomosis within the mouth bleeding, outer ring anastomosis, often required to strengthen by the suture week. Therefore, this study by radical surgery in gastric cancer into the three rows of stapler, in order to reduce the incidence of complications, enhance clinical manifestations.

1 Clinical data

1.1 General information

There were 31 patients with gastric cancer treated in our hospital from January 2015 to April 2017, and were randomly divided into study group and control group. 16 patients, 11 males and 5 females, aged 44 years to 78 years old, the average age (63.07) years old, surgical approach: nearly half of gastric cancer in 5 cases, far from half of gastric cancer in 8 cases, 3 cases of total gastrectomy. Among them, 4 cases were differentiated, 3 cases were well differentiated, 7 cases were poorly differentiated, 1 case was a stromal tumor, 15 cases in the control group, 9 cases were female and 6 cases were male. The age distribution was 36 years old to 79 years old, the average age was (56.75 ± 14.69) age. For the surgical approach: nearly half of gastric cancer in 4 cases, far from gastric cancer in 9 cases, 2 cases of total gastrectomy. Among them, 5 cases were differentiated, 4 cases were well differentiated, 3 cases were poorly differentiated, 2 cases were stromal tumors and 1 case was malignant lymphoma. There was no significant difference between the two groups ($P > 0.05$).

Cases were included in the standard[2], (1) no distant metastasis and local infiltration of gastric cancer, surgery can be radical resection, gastrointestinal anastomosis or gastroesophageal anastomosis; (2) was confirmed by the pathology of gastric cancer; (3) Know and sign informed consent. Cases were excluded in the standard:(1) combined with other tumors, major surgery and severe trauma history; (2) does not meet the indications for surgery, or the presence of distant metastasis or local infiltration and can not be radical resection; (3) Systemic disease; (4) combined with mental disorders or cognitive deficiencies.

1.2 Methods

1.2.1 Observational group: the use of three rows of stapler to stapler, after radical resection of gastric cancer, distal resection of the duodenum and residual stomach with three rows of stapler anastomosis, nearly half of the residual stool and esophagus with three rows of nails stapler anastomosis, and by the residual appetite intuitive anastomosis with or without bleeding, no bleeding with a dry ball in the anastomosis to detect whether the blood-stained yarn ball. Total gastrectomy was observed from intestine perspective. Anastomosis after the light pulls to see the anastomosis whether the outer ring staples exposed. After the anastomosis of the methylene blue test.

1.2.2 Control group: the traditional two rows of nail anastomosis, the remaining steps with the observational group.

1.3 Judgment of efficacy

Record the general situation of the two groups of patients, including: hospital stay, operation time; Complications include anastomotic fistula, anastomotic stenosis, pulmonary infection and incision infection; Anastomosis: anastomosis of the mouth of the anastomosis, the number of the most out-of-band anastomosis, and through the methylene blue test to test the occurrence of anastomotic leakage, the specific tests are as follows: in the gastric cancer after anastomosis reconstruction in the anastomosis of the anastomosis 3cm at the junction with the intestine to block the lumen, to the anastomosis into the methylene blue (methylene

blue 1 + saline 15ml) to observe the anastomosis of the methylene blue overflow[3].

1.4 Statistical analysis

All the data in this study were analyzed by statistical software SPSS 17.0. The measurement data were tested by t test and the counting data were χ^2 test. $P < 0.05$ was considered to be significantly different.

2 Results

2.1 Comparison of two groups of patients with general surgery

There was no significant difference between the two groups ($P > 0.05$). The length of hospital stay of the observational group was (16.17 ± 5.25) d, which was significantly lower than that of the control group (22.35 ± 7.18) d, the difference was significant ($P < 0.05$).

2.2 Comparison of the occurrence of two groups of complications

The observational group used three rows of stapler, 0 cases of anastomotic fistula, 0 cases of anastomotic stenosis, 1 case of pulmonary infection, the complication rate was 7.14%, which was significantly lower than that of the control group (26.67%) ($P < 0.05$).

2.3 Comparison of two groups of patients with anastomosis

The observational group used three rows of the stapler, the staples closed after the double ring, the number of bleeding in the anastomotic area was (0.87 ± 0.61), the number of outcrossing staples was (0.95 ± 0.49), were significantly lower than those in the control group ($P < 0.01$).

2.4 Comparison of the positive rate of two groups of methylene blue test

In the study group, only one case (6.28%) was positive in the methylene blue test, which was significantly lower than that in the control group (20%) ($P < 0.05$).

3 Discussion

Traditional two rows of stapler has been widely used

in gastric cancer radical resection of the anastomosis, compared with the traditional manual anastomosis, can effectively shorten the operation time and reduce the occurrence of complications, but there are some deficiencies: If the outer reinforcement is easy to cause bleeding, and excessive reinforcement of suture is easy to cause local scar hyperplasia, induced anastomotic stenosis and other complications. In addition, the anti-traction strength is much lower than the double ring nail, easy to merge incision fistula[4-5]. Accompanied by advances in medical technology, three rows of the stapler is also gradually favored by the clinical. Three rows of stapler staples after the closure of the two are double ring, and the use of three rows of staggered structure to complete the digestive tract mechanical anastomosis, while the inner ring nail closed than the outer ring nail slightly tight, can be better closed anastomotic tissue in the crisscross the small and medium-sized vascular network, thereby reducing the anastomotic bleeding. The outer ring nail is not exposed or less exposed to reduce the role of tension, the inner layer of two rings of double ring staples can be firmly nailed anastomosis, so that it has a high tensile strength, is conducive to anastomotic tissue healing. The study pointed out that[6-7], compared with the two rows of stapler to the stapler, three rows of the stapler with not to cause bleeding, the outermost of the anastomotic stapler is not easy to expose and anastomotic leakage rate is lower. The results of this study showed that there was no significant difference between the two groups ($P > 0.05$). The length of hospital stay of the observational group was (16.17 ± 5.25) d, which was significantly lower than that of the control group (22.35 ± 7.18) d, the difference was statistically significant (<0.05). The observational group used three rows of stapler, 0 cases of anastomotic fistula, 0 cases of anastomotic stenosis, 1 case of pulmonary infection, the complication rate was 7.14%, which was sig-

nificantly lower than that of the control group (26.67%) ($P < 0.05$). Indicating that the three rows of stapler clinical manifestations better, fewer complications occurred. Consistent with the above theory.

With the use of two rows of stapler increasing time and clinical consumption, the shortcomings will be further highlighted. On the one hand, the second row of staples from the larger, consistent with submucosal blood vessels closed incomplete, can greatly increase the risk of anastomotic bleeding. Furthermore, the operation also found that the two rows of stapler to stapler after a little stretch (count at 0.5 Kg pull), often have varying degrees of anastomotic internal bleeding and outer ring anastomosis exposed [8]. The results of this study show that the observational group using three rows of the stapler, the staples are closed after the double ring, anastomotic surface bleeding (0.87 ± 0.61), the number of outermost anastomosis (0.95 ± 0.49) were significantly lower than those in the control group ($P < 0.01$). Indicating that the use of three rows of stapler anastomosis can effectively control the outer ring anastomosis and internal anastomotic bleeding, is conducive to anastomotic tissue healing, to prevent the occurrence of anastomotic leakage.

Studies have pointed out[9], anastomotic leakage is gastrointestinal, gastroesophageal anastomosis common complications, the clinical incidence of 2% -18%. Anastomotic leakage causes more, such as anastomotic position, blood supply, tension, pressure, caliber differences, and local infection, the surgical point of coagulation and surgical techniques and stapler. Among them, choosing the reasonable stapler is the success of surgery to prevent the key to anastomotic leakage. The results of this study showed that only one case (6.28%) was found to be significantly lower in the observational group than in the control group (20%), with a significant difference ($P < 0.05$). The indication

stated that the use of three rows of stapler to stapler anastomosis can effectively control the occurrence of anastomotic leakage, the effect was better than the use of two rows of stapler.

According to the report, the three rows of staples used in gastric cancer surgery, which can effectively compensate for the traditional two rows of stapler's lack of anastomosis without outer reinforcement; at the same time, it can effectively control the anastomotic bleeding, outer ring nail exposed and anastomosis leakage and other complications; last but not least, clinical hospital stay shorter, more efficient treatment, worthy of clinical application.

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