

Analysis of the Clinical Value of Surgical Treatment and Postoperative Anti-Infection Treatment of Acute Suppurative Appendicitis

Chunliang Dong*

Beijing Changping District Hospital, Beijing, 102200, China

*Corresponding author: Chunliang Dong, fightbox1998@sina.com

Copyright: © 2024 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: *Objective:* To explore the clinical value of surgical treatment and postoperative anti-infection treatment for acute suppurative appendicitis. *Methods:* A total of 116 patients with acute suppurative appendicitis were enrolled in this study. The collection period was from December 2021 to December 2023. The patients were randomly grouped into a control group (surgical treatment) and an observation group (surgical treatment and postoperative anti-infection treatment), of 58 patients each. At the end of the treatment, the results of each index of the two groups were compared. *Results:* The length of hospitalization time, exhaust time, and incidence of complications in the observation group were shorter than those of the control group ($P < 0.05$). The total effective rate of the observation group was higher than that of the control group ($P < 0.05$). *Conclusion:* It is crucial to perform anti-infective treatment promptly after surgical treatment in patients with acute suppurative appendicitis. It can effectively prevent the occurrence of complications and improve the clinical efficacy. Hence, it is worthy of research and promotion.

Keywords: Acute suppurative appendicitis; Surgical treatment; Postoperative anti-infection treatment

Online publication: April 30, 2024

1. Introduction

Acute appendicitis, as a common and frequently occurring disease in surgery ranked first among cases of acute abdomen. It is characterized by different degrees of tenderness and rebound pain in the right lower abdomen and appendix. Currently, it is divided into four types in clinical practice. The first is acute simple appendicitis, the second is gangrenous appendicitis, the third is perforated appendicitis, and the fourth is acute suppurative appendicitis. The condition of simple appendicitis is simple and easily detectable but the condition of acute suppurative appendicitis is very complicated. At the same time, it has the characteristics of insidious onset and the disease progresses and changes rapidly. If surgical treatment is not carried out in time, the life of the patient is threatened^[1]. Furthermore, studies have found that most patients are prone to wound infection after surgery, resulting in a poor prognosis. Therefore, anti-infective treatment should be actively carried out after surgery to improve the long-term efficacy of patients and ensure their safety^[2,3]. This paper explores the clinical value of

surgical treatment and postoperative anti-infective treatment of acute suppurative appendicitis.

2. Information and methodology

2.1. Baseline data

Patients with acute suppurative appendicitis were selected as subjects in this study (admitted from December 2021 to December 2023) and were divided into 2 groups, with 58 cases each.

Inclusion criteria: (1) Patients diagnosed with acute suppurative appendicitis^[4]; (2) consented. Exclusion criteria: (1) Patients with surgical contraindications; (2) patients with drug allergy; (3) serious organic diseases. The observation group consisted of 45 males and 13 females aged 18–71 years old, with an average age of 44.52 ± 3.14 years. The duration of the disease was 6–13 days, with an average of 9.55 ± 0.32 days. The control group consisted of 46 males and 12 females aged 19–71 years old, with an average age of 44.88 ± 3.09 years. The duration of the disease was 7–13 days, with an average of 9.96 ± 0.75 days. There was no significant difference in the above indicators between the two groups ($P > 0.05$).

2.2. Methods

In the control group, surgical treatment was performed. After successful epidural anesthesia, the patient adopted the supine position and took the McBurney point of the right lower abdomen as the incision. The incision area was routinely disinfected using a sterile towel, and the middle and outer third of the line between the umbilical cord and the anterior superior iliac spine was taken as the incision point, which was about 3–5 cm. The skin and subcutaneous tissue were cut layer by layer to separate the muscle layer and electrocoagulation hemostasis was performed to gradually separate the peritoneum. The peritoneum was cut and the incision area was protected with gauze, and the abdominal cavity was accessed. An aspirator was used to thoroughly suck the peritoneal exudate, and the patient's appendix tissue was thoroughly explored. If the patient has severe adhesion or appendix necrosis, the appendix mesentery is ligated. Then, the diseased appendix tissue was removed completely. If there is excess exudate during the operation, it needs to be sucked out, and then gauze is placed around the root of the appendix to protect the incision, and then the appendix is removed. After the necrotic appendix was removed, the stump was embedded and covered with omentum. After the operation, the drainage tube was routinely placed, the abdominal cavity was closed, the muscle layer and subcutaneous tissue were closed layer by layer, and the skin incision was sutured.

The observation group was treated with anti-infective therapy based on the above. Firstly, a drug sensitivity test was carried out. Combined with the specific conditions of the patients, the appropriate anti-infective drugs were selected, that is, ornidazole was administered twice a day, 0.5 g each time. During the medication, the vital signs of the patients were observed. If complications occur, necessary interventions are performed, and routine wound changes were conducted.

2.3. Observation indicators

The surgical indicators, complication rates, and treatment effects between the two groups after treatment were compared.

2.4. Statistical analysis

The SPSS 20.0 software was used to analyze the data obtained from the study. All the results were conformed to a normal distribution. Measurement data were expressed as mean \pm standard deviation and the count data were expressed as %. Measurement data were analyzed using a *t*-test, and count data were analyzed using a chi-

squared (χ^2) test. Results were considered statistically significant at $P < 0.05$.

3. Results

3.1. Comparison of surgical indicators between the two groups

As shown in **Table 1**, the length of hospitalization and exhaust time of the observation group was lower than those of the control group ($P < 0.05$).

Table 1. Comparison of surgical indicators

Groups	Cases, <i>n</i>	Length of hospitalization (d)	Postoperative exhaust time (h)
Observation group	58	4.25 ± 1.88	19.36 ± 2.11
Control group	58	7.52 ± 1.02	28.52 ± 2.01
<i>t</i>	-	11.643	23.939
<i>P</i>	-	0.000	0.000

3.2. Comparison of the incidence of complications between the two groups

As shown in **Table 2**, the incidence of complications in the observation group was lower than that of the control group ($P < 0.05$).

Table 2. The incidence of complications between the two groups [*n* (%)]

Groups	Cases, <i>n</i>	Incision infection	Intestinal obstruction	Low back discomfort	Total
Observation group	58	1	0	0	1.72
Control group	58	4	2	1	12.07
χ^2	-	-	-	-	4.833
<i>P</i>	-	-	-	-	0.028

3.3. Comparison of effective rate between the two groups

As shown in **Table 3**, the total effective rate of the observation group was higher than that of the control group ($P < 0.05$).

Table 3. Comparison of effective rate between the two groups [*n* (%)]

Groups	Cases, <i>n</i>	Significantly effective	Effective	Not Effective	Total effective rate
Observation group	58	45	11	2	96.55
Control group	58	35	10	13	77.596
χ^2	-	-	-	-	9.265
<i>P</i>	-	-	-	-	0.002

4. Discussions

Acute suppurative appendicitis is a common surgical disease. If not treated in time, it will cause adverse consequences, such as perforation and gangrene. If the disease progresses, serious complications and even death may occur ^[5]. Currently, clinical treatment of acute suppurative appendicitis is mainly surgery and the

choice of surgical timing is crucial. Generally, surgery is performed 72 hours after the onset of the disease, which can effectively improve the clinical efficacy. However, the prognosis of patients is closely related to the postoperative anti-infective treatment of patients [6].

In this study, the exhaust time and length of hospitalization of the observation group were shorter than those of the control group ($P < 0.05$), suggesting that it is important to carry out anti-infective treatment promptly after surgery. The reason is that ornidazole, as a kind of common anti-infective drug, has a wide antibacterial spectrum and high safety. Its mechanism of action is to inhibit gene replication by disconnecting the spiral structure of bacteria. Anti-infective drugs can effectively kill anaerobic bacteria at the incision site effectively prevent the occurrence of bacterial infection and promote the early healing of the incision [7]. In addition, it is important to prevent the inflammatory response at the incision site, which can reduce the pain of patients, promote the recovery of trauma, avoid local exudation and swelling caused by bacterial residues, and shorten the hospitalization time of patients. The causes of incision infection are closely related to many factors, such as the correct placement of drainage strips, the patient's constitution, and the application of antibiotics. This study found that effective anti-infective treatment after surgery effectively improved the patient's waist discomfort symptoms, and reduced incision infection, intestinal obstruction, and other complications. This can improve the patient's prognosis and positively impact the patient's condition [8,9].

5. Conclusion

Timely anti-infective treatment after surgical treatment for patients with acute suppurative appendicitis effectively reduced the incidence of complications and shortened the length of hospitalization and exhaust time, which is worthy of further promotion and exploration.

Disclosure statement

The author declares no conflict of interest.

References

- [1] Song L, Huang H, Li R, et al., 2023, Pathogenic Bacteria Analysis of Postoperative Incision Infection in Patients with Acute Appendicitis and The Predictive Value of Combined Detection of NLR, PCT, and CRP. *Modern Biomedical Progress*, 23(17): 3359–3364.
- [2] Liu Y, Wang C, Zhou K, et al., 2023, Analysis of Incision Infection and Treatment Effect after Acute Suppurative Appendicitis in Children. *Chinese Journal of Pathogenic Biology*, 18(3): 323–326 + 331.
- [3] Fang J, Chen W, Huang M, 2023, Effect of Transumbilical Single-Port Laparoscopic Appendectomy on Postoperative Intestinal Function in Children with Acute Complex Appendicitis. *China Maternal and Child Health Care*, 38 (1): 175–178.
- [4] Frongia G, Dostal F, Ziebell L, et al., 2022, Delayed Surgery for Perforated Appendicitis is Feasible in Children Without Compromising the Outcome in Selected Cases. *World Journal of Surgery: Official Journal of the Societe Internationale de Chirurgie*, 46(8): 1980–1986.
- [5] Zheng Z, Chen X, Zhou Y, 2022, Efficacy and Prognosis of Laparoscopic Appendectomy at Different Times after Antibiotic Treatment for Suppurative Appendicitis. *Hainan Medicine*, 33(1): 47–50.
- [6] Liang W, Li R, Feng J, et al., 2022, The Efficacy of Modified Karl-Storz Single-Port Laparoscopic Surgery in The Treatment of Acute Appendicitis and Its Effect on Immune Function and Inflammatory Response. *Journal of Clinical*

Surgery, 30(12): 1155–1158.

- [7] Huang Z, Tang H, Zhang D, etc., 2023, Study on the Risk Factors, Immune Regulation, and Inflammatory Response of Postoperative Secondary Infection in Children with Intestinal Diseases. *Journal of Tropical Medicine*, 23(2): 217–221.
- [8] Xu J, Wei X, Xue N, et al., 2022, Application of Endoscopic Retrograde Appendicitis in Children with Acute Appendicitis. *Chinese Journal of Pediatric Surgery*, 43(7): 645–650.
- [9] Skertich NJ, Gwyneth AS, Wiegmann AL, et al., 2023, A Shortened Course of Amoxicillin/Clavulanate is The Preferred Antibiotic Treatment after Surgery for Perforated Appendicitis in Children. *Journal of Pediatric Surgery*, 58(3): 558–563.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.