

# Analysis on the Clinical Effects of Emergency Surgical Treatment on Patients with Acute Abdominal Pain

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**Abstract: Objective:** To study the clinical effects of emergency surgery in treating patients with acute abdominal pain. **Methods:** 60 patients admitted to our hospital between January 2019 and December 2019 were randomly selected as subjects, and the incidence of complications and mortality of the patients were observed. **Results:** Among the 60 patients, definitive diagnosis was obtained during the operation and there was no mortality. After the operation, they were transferred to other relevant departments for continued treatment. Among the 60 patients, 4 cases had complications, accounted for incidence of 6.67%. **Conclusion:** The diagnosis of emergency surgical treatment based on acute abdominal pain avoided misdiagnosis and realized non-invasive diagnosis, and provided a valid reference for avoiding overtreatment.

**Keywords:** Emergency surgery; Acute abdominal pain; Clinical effect

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Acute abdominal pain is generally one of the common diseases encountered in the emergency department of hospitals. The cause is complex and rapid. Dao Min<sup>[1]</sup> et al. studied the reasons for misdiagnosis of 10 patients with acute abdominal pain and pointed out that the subjective factors that led to the misdiagnosis included poor understanding of the patient's condition, incomplete theoretical knowledge, failure to conduct a comprehensive examination on the patient, and unnecessary auxiliary examinations for the patient, etc., should be changed to avoid this phenomenon in the emergency department; Wang

Junping<sup>[2]</sup> pointed out that broadening the scope of professional knowledge and understanding the patients' conditions in detail can help reduce the rate of misdiagnosis; Li Zhaosheng<sup>[4]</sup> proposed that emergency surgeons need to have rigorous diagnosis and treatment concepts, as well as solid diagnosis and treatment techniques, be good at dialectical thinking, and be able to give reasonable diagnosis and treatment opinions. This paper uses 60 patients with acute abdominal pain in the emergency department of our hospital admitted in 2019 as an example to study the clinical effects of emergency surgery in treating patients with acute abdominal pain.

## 1 Data and Methods

### 1.1 General Data

60 patients admitted to our hospital between January 2019 and December 2019 were randomly selected as subjects, the patient's age, gender and other factors do not affect the content of the study, and all subjects had no history of other psychiatric diseases and heritable diseases, etc. before admission. The patients had been informed of the content of the study, the consent of the patients and the patients' family had been obtained, and the study had been approved by the ethics committee, so the study is researchable.

### 1.2 Methods

The patient had acute abdominal pain as the first symptom. When the patient was admitted to the hospital, the severity of the disease was assessed according to the Glasgow Outcome Scale (GOS). The green channel was opened to seriously ill patients and the patients were sent to the emergency room for rescue. All patients in this study suffered from

general acute abdominal pain. After hospitalization, routine symptomatic treatment (such as painkillers, antispasmodics, and correction of fluid and electrolyte disturbances and hypoxia) can be closely monitored for changes in the conditions. Basic tests such as hematuria, blood sugar, and blood electrolytes were performed; 25 fertile women were ruled out of ectopic pregnancy by checking the human chorionic gonadotropin subunit (-HCG) in the blood or with urine pregnancy test. Serum enzymes and electrocardiogram were also needed to rule out myocardial infarction in 53 patients with upper abdominal pain, ultrasound examination was performed on patients with lower abdominal pain, and blood gas analysis was performed in 51 patients. After excluding ectopic pregnancy and myocardial infarction, the past medical history and eating habits were inquired. Among them, 24 patients had chronic abdominal pain, 2 had abdominal surgery, and 5 had cholelithiasis. Combined with medical history and ultrasound scan, it was still impossible to judge. X-ray examination of the chest and abdomen had been completed, and the initial assessment time was 20 to 40 minutes. After the initial diagnosis, other tests were performed based on the diagnosis results, and if acute pancreatitis was diagnosed, an amylase test was performed.

After the diagnosis was basically confirmed, treatment was planned based on the patient's diagnostic results (especially ultrasound diagnosis). All patients were transferred to emergency surgery, including 16 cases of laparoscopic surgery, 41 cases

of laparotomy and 3 cases of abdominal lavage. In laparoscopic surgery, the surgical calibers in 14 cases of the standard three-ball surgery were partially adjusted according to the affected area. 4 cases of abdominal surgery had original scars by caesarean section. A detailed search was conducted to determine the location of the lesion during the operation, and 4 cases of laparoscopic surgery were converted to open surgery. After the diagnosis is confirmed by checking, appropriate treatment strategies were adopted, such as appendectomy, cholecystectomy, cholecystectomy, gastric perforation repair, and interstitial gallbladder drainage.

### 1.3 Observation Indicators

The incidence of complications and mortality in patients were observed.

### 1.4 Statistics Methods

The data was summarized, the number of cases was calculated, and entered into Excel table under two-person review, and the SPSS 21.0 software package was used for statistical analysis. Chi-square analysis was applied. Test standard  $\alpha = 0.05$ .

## 2 Results

All 60 patients received a clear diagnosis during the surgery, and no mortality occurred. After the surgery, they were transferred to other relevant departments for continued treatment. Among the 60 patients, 4 had complications, accounted for incidence of 6.67%. See Table 1 for details.

**Table 1.** The Incidence of Complications and Mortality in Patients

No. of Cases <i>n</i> =60	Mortality	Situation of Complications <i>n</i> (%)
Detailed Situations	None	4(6.67%) 1 case was re-operated for acute appendicitis with residual fluid and abdominal abscess; 1 case of incision infection, 1 case of postoperative intestinal obstruction, 1 case of biliary fistula

## 3 Discussions

Non-traumatic acute abdominal pain is very common in emergency rooms. Acute abdominal pain has many causes and involves many diseases. Rapid diagnosis plays an important role in subsequent treatment. In addition, most patients who have undergone acute abdominal surgery require emergency surgery. The diagnosis should be made based on the patient's medical history and physical examination results to ensure the best timing for surgery. Some data

show that acute gastroenteritis and appendicitis are more dominant in minors, while acute pancreatitis is more dominant in young and middle-aged people. This may be related to long-term unreasonable diet, overeating and alcoholism at this age. There are more elderly patients with intestinal obstruction, which may be related to the lack of gastrointestinal motility at this stage of life<sup>[2]</sup>. There are several types of acute abdominal pain, including visceral, physical, and related abdominal pain. The mechanism is very complicated, mainly visceral pain. Obviously,

the type and cause of abdominal pain in patients with acute abdominal pain will affect the surgical treatment process. Usually, when patients are having acute abdominal pain, it is mainly caused by smooth muscle spasm such as the intestines and bile ducts; when patients show persistent abdominal pain, it is mainly caused by acute intraperitoneal infection and perforation<sup>[3]</sup>. Confirm the specific nature and location of pain in patients with acute abdominal pain, provide an effective reference for preliminary judgment of the cause of the patient, and on this basis, combine with ultrasound to further diagnose, and provide reference and data for surgical exploration and treatment<sup>[4]</sup>. According to the spectral analysis of emergency surgical diseases, acute appendicitis, cholecystitis, and gastrointestinal perforation are common causes of acute abdominal pain, and surgical treatment is the main treatment method. Critically ill patients must be opened to green channel for rescue treatment<sup>[5]</sup>. Relevant information shows that when encountering patients with general acute abdominal pain, doctors should learn more about the patient's medical history, choose appropriate auxiliary diagnosis methods, clarify surgical indications, and strengthen quality control. A detailed understanding of the medical history can reduce the misdiagnosis of ectopic pregnancy without hiding personal information such as the patient's sexual life. In this case, appropriate auxiliary diagnosis can avoid treatment delay by early diagnosis, and appropriate surgical indications can accurately assess whether the patient can receive conservative treatment and avoid damage to the body due to overtreatment<sup>[5]</sup>. According to relevant data, the application of emergency surgery to the diagnosis of acute abdominal pain requires a clear preoperative diagnosis, a clear need for surgical treatment of the patient, whether the patient can tolerate the surgery, puncture drainage, and the rational application of irrigation techniques. Emergency surgery includes laparoscopy and open surgery. Laparoscopic treatment is usually minimally invasive, with minimal surgical damage, faster postoperative recovery and fewer complications<sup>[6]</sup>. For example, for patients with appendicitis, laparoscopic appendectomy is very effective, so the operation safety is high, the operation time is short, the postoperative recovery time is short, and the postoperative aesthetics is high.

However, laparoscopy is very difficult and requires high-level skills of the surgeon, and lack of skills can increase vascular damage during surgery<sup>[7]</sup>. Similarly, laparoscopic surgery cannot determine whether patients with acute abdominal pain need surgery. Therefore, emergency surgery is the gold standard for diagnosing acute abdominal pain, avoiding unnecessary trauma, misdiagnosis and failure in certain patients, and it provides an effective reference for the selection of surgical methods.

In conclusion, acute abdominal pain is a common situation in the emergency room, and most patients with abdominal pain require urgent care in the emergency room. Acute abdominal pain is characterized by sudden onset and complicated etiology, leading to poor prognosis for the patient, and may be life-threatening in severe cases. Emergency surgical treatment diagnosis on acute abdominal pain avoids misdiagnosis and realizes non-invasive diagnosis, and provides effective reference for avoiding excessive treatment.

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