Original Research Article

Management of acute abdomen: Study of 110 cases

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International Archives of Integrated Medicine, Vol. 3, Issue 2, February, 2016.

Available online at http://iaimjournal.com/
ISSN: 2394-0026 (P) **ISSN: 2394-0034 (O)**
Received on: 13-01-2016 **Accepted on:** 23-01-2016
Source of support: Nil **Conflict of interest:** None declared.
How to cite this article: Ray S, Patel M, Parmar H. Management of acute abdomen: Study of 110 cases. IAIM, 2016; 3(2): 18-24.

Abstract

Background: The term acute abdomen designates symptoms and signs of intraabdominal diseases usually treated best by surgical operation. Many diseases, some of which do not require surgical treatment, produce abdominal pain, so the evaluation of patients with abdominal pain must be methodical and careful. The proper management of patients with acute abdominal pain requires a timely decision about the need for surgical operation. The term "acute abdomen" should never be equated with the invariable need for operation. The abdomen has been referred to as Pandora's magic box. Very often an accurate diagnosis cannot be made without surgery and many wonders are revealed on opening the abdomen. So it is often the last court of appeal in investigating abdominal cases. The general rule can be laid down that the majority of severe abdominal pains that ensue in patients who have been previously well, and that last as long as six hours, are caused by conditions of surgical import.

Materials and methods: The present study was a study of 110 patients presenting with acute abdominal pain. Out of these, 100 patients were managed surgically and 10 patients were kept conservatively. Sampling frame was done to study the incidence of non-traumatic, acute abdominal emergencies. Inclusion criteria were patients willing to participate in the study, patients with history of acute onset of pain in abdomen, positive findings in USG and X-ray abdomen standing.

Results: From 61-70 years of age, 11 total cases were reported, out of which 5 were due to perforated duodenal ulcer, 2 each due to ileal perforation and gastric perforation, and 1 each for acute intestinal obstruction and acute pancreatitis. Out of 110 cases of acute abdomen, 42 were caused by acute appendicitis and hence it forms the major reason among the causes of acute abdomen. While

comparing duration of pain and acute abdomen with its management, it was found that when the pain was less than 8 hours long, the final diagnosis of acute abdomen was obtained in 21 patients out of a total of 110. This formed 19% of the total cases. A Maximum of 15 cases of complications were seen in acute intestinal obstruction with 6 wound infections, 5 pulmonary complications , 2 cases of septicemia and 2 cases of skin excoriation. Also death of a patient was seen. This disease forms 13% of the total cases.

Conclusion: Acute abdomen is often a surgical emergency and a challenge to any surgeon. Rigorous approach to diagnose is mandatory. Acute appendicitis was the most common cause of abdominal surgical emergency.

Key words

Acute abdomen, Emergency surgery, Complications.

Introduction

The term acute abdomen designates symptoms and signs of intraabdominal diseases usually treated best by surgical operation. Many diseases, some of which do not require surgical treatment, produce abdominal pain, so the evaluation of patients with abdominal pain must be methodical and careful. The proper management of patients with acute abdominal pain requires a timely decision about the need for surgical operation. This decision requires evaluation of the patient's history and physical findings, laboratory data, and imaging tests [1]. The syndrome of acute abdominal pain generates a large number of hospital visits and may affect the very young, the very old, either sex, and all socioeconomic groups. All patients with abdominal pain should undergo evaluation to establish a diagnosis so that timely treatment can minimize morbidity and mortality. The first principle is that the necessity of making a serious and thorough attempt at diagnosis, usually predominantly by means of the history and physical examination. Abdominal pain is one of the most common conditions that call for prompt diagnosis and treatment. Usually, though by no means always, other symptoms accompany the pain, but in most cases of acute abdominal disease pain is the main symptom and complaint. The very terms “acute abdomen” and abdominal emergency”, which are constantly applied to such cases, signify the need for prompt diagnosis and early treatment, by no means always surgical. The term “acute abdomen” should never be equated with the invariable need for operation. The abdomen has been referred to as Pandora’s magic box. Very often an accurate diagnosis cannot be made without surgery and many wonders are revealed on opening the abdomen. So it is often the last court of appeal in investigating abdominal cases. The general rule can be laid down that the majority of severe abdominal pains that ensue in patients who have been previously well, and that last as long as six hours, are caused by conditions of surgical import.

Aim and objectives

- To study the incidence of non-traumatic, acute abdominal emergencies.
- To analyze the nature & presentation of the non-traumatic acute abdominal emergencies treated in surgical units.
- To study the mortality and morbidity rate in the analyzed cases.
- To study the result of conservative and operative treatment in the selected cases.

Material and methods

The present study was a study of 110 patients presenting with acute abdominal pain. Out of these, 100 patients were managed surgically and 10 patients were kept conservatively.

Sampling Frame: To study the incidence of non-traumatic, acute abdominal emergencies.

Inclusion criteria

- Patients willing to participate in the study.
- Patients with history of acute onset of pain in abdomen.
- Positive findings in USG and x-ray abdomen standing.

Exclusion criteria

- Patients presented with acute abdomen of traumatic origin.
- Pregnant women and children presented with acute abdomen.

In this study, Pre-operative detailed history and thorough physical examination was done for all acute abdominal emergencies, to arrive at preoperative diagnosis. After admission routine investigations namely hemoglobin (Hb%), total count (TC), differential count (DC), urine examination were carried out. Relevant procedure like plain X-ray abdomen was taken in some cases. In 100 cases operative findings and postoperative diagnosis were recorded. 10 cases recorded as managed conservatively. Postoperative follow-up was done at least 4 month period to note complications and outcome with investigations for reflex.

All patients had given informed consent for surgical intervention. To arrive at conclusion, 110 cases have been studied.

Results

An analytical study of 110 cases of acute abdomen, from May 2011 to September 2013 had been carried out. Only those patients had been included in the study who suffered with features suggestive of acute abdominal emergency and who had been willing to provide informed consent to be part of this analytical study. Patients were subjected to history taking; clinical examination and the associated important parameters, such as mode of management, nature of surgical procedure, outcomes, complications, duration of hospital stay etc had been taken from their in-hospital medical record. The findings had been categorized in to various groups, in consistency with the subject in study, such as age, sex, clinical presentation, management mode, etiology, complications, duration of hospital stay etc. and the data had been converted to tables and graphs for summarization and easy interpretation. In the age-wise distribution, no cases of acute abdomen were reported in the age group of less than 10 years, because Pediatrics age group of patients was not included. From 61-70 years of age, 11 total cases were reported, out of which 5 were due to perforated duodenal ulcer, 2 each due to ileal perforation and gastric perforation, and 1 each for acute intestinal obstruction and acute pancreatitis (**Table – 1**).

Out of 110 cases of acute abdomen, 42 were caused by acute appendicitis and hence it forms the major reason among the causes of acute abdomen (**Table – 2**). However, there were no mortalities. Fever was present in 48% cases, abdominal pain in 91% of cases, vomiting in 87% and abdominal distention was seen in 90% cases. Diarrhea was seen in 10% cases. Constipation was seen in 41% cases and abdominal tenderness in 86%, guarding and rigidity was in 54% cases and bowel sounds were present in 30% cases. Free fluid was present in 63% cases and pnuemoperitoneum was present in 41% cases. Sex distribution of acute abdomen cases was as per **Table – 3**.

While comparing duration of pain and acute abdomen with its management, it was found that when the pain was less than 8 hours long, the final diagnosis of acute abdomen was obtained in 21 patients out of a total of 110. This formed 19% of the total cases. Among the patients in whom the pain was <8 hours, 16 patients were such who required laparotomy for management. 5 patients could be managed conservatively. Whereas when the pain was more than 8 hours long, the final diagnosis of acute abdomen was obtained in 89 patients who form 80% of the total cases under study. Among the patients with pain lasting >8 hours, 84 patients required laparotomy and 5 could be managed conservatively. Thus a total of 100 patients out

of 110, required laparotomy while the rest could be managed conservatively (**Table – 4**). For acute appendicitis, total counts were raised in 85% patients, urine analysis was significant in 12% of cases and USG was significant in 61% of cases. CT-scan was significant in 75% cases and serum amylase in 91% cases.

A Maximum of 15 cases of complications were seen in acute intestinal obstruction with 6 wound infections, 5 pulmonary complications , 2 cases of septicemia and 2 cases of skin excoriation. Also death of a patient was seen. This disease forms 13% of the total cases. Duration of hospital stay in various acute abdomen cases was as per **Table – 5**.

Table – 1: Age-sex distribution of cases.

Age (Years)	Male	Percentage	female	Percentage
<10	0	0	0	0
11 to 20	19	17.37%	10	9.09%
21to 30	18	16.45%	7	6.36%
31 to 40	7	6.36%	3	2.72%
41 to 50	6	5.45%	4	3.63%
51 to 60	8	7.27%	8	7.27%
61 to 70	3	2.72%	1	0.9%
71 to 80	7	6.36%	5	4.54%
>80 yrs	2	1.81%	2	1.81%
Total	70	63.63%	40	36.36%

Table – 2: Incidence of acute abdominal conditions out of 110 cases

Cause of acute abdomen	No. of cases	Percentage	Mortality
Acute appendicitis	42	38.38%%	0
Perforated duodenal ulcer	28	25.45%	0
Ileal perforation	11	10%	2
Gastric perforation	9	8.18%	0
Acute intestinal obstruction	9	8.18%	1
Ruptured splenic abscess	1	0.9%	0
Acute pancreatitis	5	4.54%	0
Acute cholecystitis	5	4.54%	0

Table – 3: Sex distribution of acute abdomen.

Acute abdomen cases	Male	Percentage	Female	Percentage
Acute Appendicitis	29	26.36%	13	11.81%
Perforated duodenal ulcer	12	10.90%	16	14.54%
Ileal Perforation	8	7.27%	3	2.72%
Gastric perforation	5	4.54%	4	3.63%
Acute intestinal obstruction	4	3.36%	5	4.54%
Ruptured splenic abscess	1	0.90%	0	0.00%
Acute pancreatitis	2	1.81%	3	2.72%
Acute cholecystitis	1	0.90%	4	3.63%
Total	65	59.09%	45	40.90%

Table – 4: Management of acute abdomen cases.

Name of procedure	No. of cases	% of cases
Appendicectomy	39	35.45%
Exploratory laparotomy and primary closure	45	40.90%
Exploratory laparotomy	1	0.9%
Closure without disturbing the mass	1	0.9%
Interval appendicectomy	1	0.9%
Exploratory laparotomy and release of obstruction anatomical repair	5	4.54%
Reduction of intussusception	1	0.9%
De-rotation of volvulus and fixing	1	0.9%
Resection and end to end anastomosis	2	1.81%
Splenectomy with peritoneal toilet	1	0.9%
Resection and anastomosis with hernioplasty	3	2.72%

Table – 5: Duration of hospital stay.

Etiology	Hospital stay (in days)
Acute Appendicitis	5-18 days
Perforated duodenal ulcer	7-20 days
Ileal Perforation	8-17 days
Gastric perforation	7-21 days
Acute Intestinal Obstruction	7-15 days
Ruptured Splenic Abscess	20 days
Acute pancreatitis	5-18 days
Acute cholecystitis	5-22 days

Discussion

In patients presenting with Acute Abdomen, there may be various pathologies like Acute Appendicitis, Acute Cholecystitis, Acute Pancreatitis, Various perforation etc,; hence exact diagnosis is required for planning proper management [2]. In this study out of the 110 patients who presented specifically with symptoms of Acute Abdomen were Undergone various investigation and managed according to diagnosis are selected for the study. The incidence of Acute Abdomen in our study has been very close to a recent study conducted by Dr. Bandana Pandey in National Academy of Medical Sciences Mahaboudha, Kathmandu, Nepal in February 2009. In a study done by Basret all in chandigarh India shows the ages varied between 10- 70 years and most of them were in the age range of 20-40 years. The median age group in Pandey study was 26 years, in the Datubo-Brown DD, et al. it was 20 years [3]. It was 30 years in the basret study while in my study it was 20 years. Abdominal pain is a common occurrence in the elderly patients and poses a difficult challenge for the emergency physician. Previous studies demonstrated that among the elderly patients presenting to the emergency department with abdominal pain had surgery for the underlying condition [4].

In the present study, for duration of pain less than 8 hours, 16 out of 21 patients required laparotomy forming 14% of the total. There were 12 cases for the same in the Pandey study out of 16 forming 12% of the total. Pain has major role

in management of acute abdomen. Acute abdominal pain (generally defined as pain of less than one week's duration) is a common presenting complaint among older patients. Approximately one fourth of patients who present to the emergency department are older than 50 years [5]. The presentation of an older patient with abdominal pain may be very different from that seen in a younger patient. Older patients tend to present later in the course of their illness and have more nonspecific symptoms [6]. In addition, a broader differential diagnosis must be considered in older patients with abdominal pain. Older patients may delay seeking care because they fear losing independence, lack health insurance, lack transportation, lack a secondary caregiver for their spouse or pet, or are afraid of hospitals or death. Acute appendicitis forms the maximum cause of acute abdomen in both the studies [7]. In the present study it forms 38% while in the Pandey study it forms 40% of the total causes. Abdominal distension was also a very common symptom in both studies and was positive in 90% cases in the present study and 79% cases in the Pandey study. It was present in 65% cases in Haridimos Markogiannakis study and 70% cases in A Z Sule study [8, 9]. Appendicectomy was done in 35% cases in the present study while it was 40% in the Pandey study. Exploratory laparotomy and primary closure was done in 40% cases in the present study while it was 42% in the Pandey study. Exploratory laparotomy, closure without disturbing the mass and interval appendicectomy was done in 0.9% cases in the present study which were not performed in the Pandey study. Exploratory laparotomy and release of obstruction anatomical repair was done in 4% cases in the present study while it was 5% in the Pandey study. Reduction of intussusception was done in 0.9% cases in the present study while it was 2% in the Pandey study. Re-rotation of volvulus was done in 0.9% cases in the present study while it was 1% in the Pandey study. Resection and end to end anastomosis was done in 1.8% cases in the present study while it was 3% in the Pandey study. Splenectomy with peritoneal toilet was done in 0.9% cases in the present study while it was 2% in the Pandey study. Resection and anastomosis with hernioplasty was done in 2.72% cases in the present study while it was 4% in the Pandey study. The present study shows average 7-10 days of stay. Pandey study has 5-15 days average duration of stay. The Gatsoulis N shows average 10-23 days of stay [10]. The A Z Sule shows average 7-25 days of stay. The Haridimos Markogiannakis shows average 3-20 days of stay [9].

Conclusion

Acute abdomen is often a surgical emergency and a challenge to any surgeon. Rigorous approach to diagnose is mandatory. Acute appendicitis was the most common cause of abdominal surgical emergency [11].

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