



ORIGINAL RESEARCH PAPER

General Surgery

RESULTS OF EMERGENCY MANAGEMENT OF ACUTE ABDOMEN IN ADULTS BASED ON CLINICAL ASSESSMENT AND BASIC IMAGING INVESTIGATIONS: ARE ADVANCED IMAGING TECHNIQUES ALWAYS NECESSARY FOR SUCCESSFUL TREATMENT? ; A STUDY IN A TERTIARY CARE HOSPITAL AMRAVATI.

KEY WORDS: Acute abdomen, Emergency surgery.

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ABSTRACT

Background : The term acute abdomen refers to signs and symptoms of abdominal pain and tenderness, a clinical presentation that may require emergency surgical treatment. Patients suffering from both, surgical as well as medical diseases may present with acute abdomen. The main objectives of the study are to identify common causes of acute abdomen, to assess the need for urgent surgical intervention in these patients and to evaluate role of basic diagnostic techniques and need of advanced imaging studies.

Methods: 50 patients with acute onset abdominal pain were included in the study. Patients with pain related to pregnancy, trauma and pediatric age group were excluded from the study. All patients were subjected to detailed history and clinical examination, X-ray abdomen in erect position and ultrasound examination of the abdomen and pelvis. CECT of abdomen and pelvis was performed only when there were diagnostic difficulties and for deciding about need for surgical intervention.

Results: Out of 50, 21 patients required surgery within 24 hours and 16 patients underwent elective surgery after emergency treatment. 13 patients were managed conservatively.

Conclusions: Study shows that the commonest causes for acute abdomen are acute appendicitis and urolithiasis. CECT of abdomen and pelvis was helpful in decision making between conservative and surgical management of acute abdomen in selected cases.

INTRODUCTION

The term acute abdomen refers to signs and symptoms of abdominal pain and tenderness, a clinical presentation that often requires emergency surgical therapy. This challenging clinical scenario requires a thorough and expeditious workup to determine the need for operative intervention and initiate appropriate therapy [1]. Acute abdominal pain may represent the cardinal symptom behind a vast number of possible underlying causes that require surgical treatment. The acute abdomen thus represents the most common surgical emergency, the most common reason for a surgical consultation in the emergency room and the more common reason for a non-accidental hospitalization [2]. Acute abdominal pain, is a severe abdominal pain, if accompanied by guarding and muscular rigidity, essentially describes the clinical picture of peritonitis and usually calls for an emergency operation [3]. The general thumb rule is that any pain abdomen which is persistent for a period of more than 6 days is usually caused by a disease of surgical significance [4]. Plain x-ray abdomen is an useful tool for confirmation of various surgical causes of acute abdomen. Only a minority of patients admitted with acute abdominal pain require urgent operation, but the identification of those who need an operation may be difficult. The diagnostic dilemma may lead to negative findings at laparotomy. In such a scenario, active observation of patients helps in minimising the chances of negative findings on laparotomy [5].

The main objectives of the study are to identify common causes of Acute Abdomen, to assess need of urgent surgical intervention in patients presenting with Acute Abdomen and to asses role of basic imaging tests and need for advanced imaging techniques.

METHODS

Study was conducted over a period of 12 months, from January 2019 to December 2019. Thus, data of 50 patients was selected for the study. Detailed history was obtained from all patients and thorough physical examination was performed.

- Pregnancy related abdominal pain
- Blunt abdominal trauma / road traffic accident / assault
- Pediatric age group below 10 years

Were excluded from the study.

Basic investigations were performed in all patients and contrast enhanced CT scan (CECT) was performed in select cases when indicated. The following Basic investigations were performed in all 50 patients:

- X-ray Abdomen Erect AP view
- Ultrasound examination of abdomen and pelvis

All the 50 patients were admitted and treated appropriately according to reports of investigations and diagnosis.

RESULTS

Out of 50 patients, men were more likely to present with acute abdominal pain as compared to women. We had patients in our study from 10 years to 70 years of age.

Table 1: Distribution according to age group

Age group in years	Male	Female
10 – 30	16	7
31 – 50	9	6
51 – 70	5	7

Table 2: Presenting symptoms

Symptoms	Present in number of patients
Abdominal pain	50
Vomiting	29
Abdominal distention	16
Constipation	15
Fever	18

Abdominal pain was present in all patients and second most common symptom observed was vomiting. Most common systemic sign was tachycardia and abdominal was tenderness.

Table 3: Presence of signs

Signs	Present in number of patients
Tachycardia	42
Hypotension	4
Tenderness	37
Guarding	19
Absent bowel sounds	9

Table 4: Distribution according to diagnosis

Diagnosis	Number of patients
Appendicitis	16
Cholecystitis	8
Intestinal obstruction	7
Intestinal perforation	5
Pancreatitis	4
Urolithiasis	9
Other	1

The commonest cause of acute abdomen was observed to be acute appendicitis. Out of 7 patients of intestinal obstruction, 1 patient had partially irreducible incisional hernia, 1 patient had obstructed inguinal hernia and 4 had adhesive intestinal obstruction. The other 1 case was found to have neoplastic growth at ileocaecal junction. 3 cases of intestinal perforation were due to duodenal ulcer perforation and 2 was due to perforation in terminal ileum. Out of 4 cases of Pancreatitis, 3 were due to alcohol and 1 gall stone related. Among 9 patients who presented with ureteric calculi, 6 patients had lowered ureteric and 3 cases had upper ureteric calculi. Only 1 patient came with large infected boil with cellulitis and abscess on left lower abdominal wall.

Apart from 12 patients having intestinal obstruction and / or perforation, x-ray abdomen was helpful in only 4 of 9 patients with urolithiasis. Ultrasonography of the abdomen revealed conclusive diagnosis in majority of cases of cholecystitis, urolithiasis, appendicitis and pancreatitis. Contrast enhanced CT scan of abdomen was necessary in all cases of pancreatitis and intestinal obstruction (11 patients). CT scan helped in the determination of etiology of the intestinal obstruction and diagnosis of neoplastic etiology.

Table 5: Outcome of emergency treatment

Diagnosis	Emergency surgery	Planned surgery	Conservatively
Appendicitis	10	4	2
Cholecystitis	0	5	3
Intestinal obstruction	5	1	1
Intestinal perforation	5	0	0
Pancreatitis	0	0	4
Urolithiasis	0	6	3
Other	1	0	0

As seen from the table 5, 21 patients presenting with acute abdomen required emergency surgery, 16 underwent planned surgery and 13 were managed conservatively.

DISCUSSION

Over 12 month's period, 50 patients presented with acute abdomen were included in the study. The data thus collected was analysed and compared with already published data. The mean age of patients in this study was 36 and maximum patients (23) were aged between ages of 10 to 30 years. In studies published by Randen A et al and Allemen F et al, the mean age reported was 47 and 45 years respectively [6,7]. There were 30 males and 20 females in the study. The male preponderance correlates with the studies done by Nega B et al [8]. The most common diagnosis was acute appendicitis followed by Urolithiasis and cholecystitis in that descending order. Among females, most common diagnosis was cholecystitis and appendicitis was found to be 2nd commonest. Similar results have been reported in a study by Hwang H et al which correlates well with observations of the present study [9].

Basic radiological investigations (x-ray abdomen erect view and ultrasound examination of abdomen and pelvis) were performed in all the patients. Erect x-ray of abdomen was 100 % diagnostic in all patients with intestinal obstruction and perforation. The plain x-ray abdomen was found to be indispensable in imaging of abdominal gas shadows and similar results have been quoted in the literature [10]. The

plain x-ray abdomen could also detect urolithiasis in 4 out of 9 patients. Thus, x-ray abdomen was useful in diagnosis of surgical causes of acute abdomen. In all other diseases, erect X-ray abdomen was found to be least contributory towards the diagnosis [11].

Ultrasound examination of abdomen and pelvis was performed in all patients with acute abdominal pain. The abdominal ultrasound could diagnose 80% cases of acute appendicitis and acute pancreatitis. Puylaert JB et al, reported an accuracy of 89% in diagnosis of acute appendicitis using graded compression examination. In the present study, ultrasound could detect 100 % cases of cholelithiasis and cholecystitis. Hwang H and Shea JA et al, in their respective studies reported similar results and proved USG to be more helpful than conventional oral cholecystogram [12]. In current study, almost 80 % cases of urolithiasis were diagnosed accurately by ultrasound examination of the abdomen as compared to 62 % diagnostic accuracy reported by Haroun AA et al [13]. In this study, CECT helped in diagnosis and treatment of 11 patients.

In the present study, it was observed that 21 patients required emergency surgery within 24 hours from the time of admission. 16 patients were advised elective surgery after diagnosis and emergency treatment. The patients who were managed conservatively were mostly diagnosed as pancreatitis or urolithiasis. Only 1 case of sub-acute intestinal obstruction was managed conservatively. Immediate surgical intervention has to be planned in well selected patients and should be used prudently.

CONCLUSION

The main conclusions can be drawn from this study are, the commonest surgical cause of acute abdominal pain in this study was found to be acute appendicitis followed by urolithiasis. Almost 74% of the patients with acute abdominal pain required surgical intervention. CECT as a diagnostic tool is required in almost 22% of the cases and the findings significantly dictate the choice between conservative versus surgical modality of treatment.

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