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Original Research Paper

General Surgery

A COMPREHENSIVE STUDY ON ACUTE NON-TRAUMATIC ABDOMINAL EMERGENCIES

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ABSTRACT Abdominal pain is one of the most common reasons for visit to the emergency room. Acute appendicitis is the commonest cause. An accurate diagnosis is essential for the correct treatment, which in many cases will prevent the death of the patient. Mainstay of diagnosis is history and physical examination. If this information is inadequate to establish a diagnosis and urgent or immediate operation is unnecessary, the periodic re-examination helps document the progression of the disease and often avoids unnecessary surgical intervention. Today the combination of improved diagnostic procedures, antibiotic and better anaesthesia and preoperative and postoperative patient care has led to a decrease in morbidity and mortality of patients with acute abdomen. The objective of this study was to determine the various causes of non-traumatic acute abdominal emergencies, their incidence, management and mortality in both sexes and all age groups >12 years age.

KEYWORDS : Acute abdomen, Accurate diagnosis, Urgent treatment, Acute appendicitis.

INTRODUCTION

Abdominal pain is one of the most common reasons for visit to the emergency room. Although for the majority of patients, symptoms are benign and self-limited, a subset develops acute abdomen as a result of serious intra-abdominal pathology necessitating emergency intervention[1]. Most difficult task is making a timely diagnosis so that treatment can be initiated and morbidity can be decreased. Common causes of acute abdominal pain include acute appendicitis, acute cholecystitis, acute intestinal obstruction, urinary colic, perforated peptic ulcer, acute pancreatitis, and nonspecific abdominal pain[2]. A detailedhistory and thorough physical examination are keys to reach the diagnosis for patients presenting with an acute abdomen.

Acute abdominal pain continues to be a large workload for the general surgeon and also mislead diagnostic and management problems. Different techniques have been introduced over the past two decades to help in the management of acute abdomen. An accurate diagnosis is essential for the correct treatment, which in many cases can reduce the mortality. Natural history of acute abdomen depends on the pathological process involved, which sometimes may resolve spontaneously with or without treatment and at other times may progress to generalized peritonitis and death. Hurried decisions should not be taken which may be incorrect or misleading. The history and physical examination done by an unhurried surgeon remains the cornerstone of the diagnosis, which is confirmed by radiographic studies and laboratory data. If this information is inadequate to establish a diagnosis and urgent operation is not necessary, unnecessary surgical intervention should be avoided. Today the combination of improved diagnostic methods, antibiotics, better anaesthesia and preoperative and postoperative care has led to a decrease in morbidity and mortality of patients with acute abdomen. The aim of the study is to determine the various causes of non-traumatic acute abdominal emergencies, their incidence, management and mortality in both sexes and all age groups > 12 years age.

METHODS-

The present study was conducted on the patients of non-traumatic abdominal emergencies admitted in the department of general surgery, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar over a period extending from 1st January 2018 to 31st December2019.

EXCLUSION CRITERIA

- Paediatric age group (12 years and below)
- Traumatic cases (blunt and penetrating)
- Acute abdomen in pregnancy and gynaecological causes of acute abdomen.

Detailed history and clinical examinations of all patients were obtained from the case sheets. Routine investigations were also documented. Findings of ultrasonography and CT abdomen and/or pelvis are also noted. Operative findings and diagnosis were recorded. Relevant surgical procedures were done and recorded. Final outcomes were evaluated and recorded.

Table 1 : Spectrum of diseases in patients with non-traumatic acute abdominal emergencies.

Diagnosis	No. of patients	percentage
Acute appendicitis	127	36.6
Acute intestinal obstruction	89	25.4
Intestinal perforation	84	24.3
Acute cholecystitis	21	06.1
Liver abscess	14	04.2
Acute pancreatitis	4	01.3
Other causes	7	02.1
Total	346	100.00

Cases of appendicular perforation were excluded from intestinal perforation, which are included in acute appendicitis.

Table 1 reveals that the most common acute non-traumatic abdominal emergency in our hospital is acute appendicitis which accounted for 36.6% of the total patients. 25.4% patients presented with acute intestinal obstruction, followed by intestinal perforation and acute cholecystitis i.e., 24.3% and 6.1% respectively. Liver abscess, Acute pancreatitis and other causes constituted 4.2%, 1.3% and 2.1% cases respectively. This study also reveals that presentation of acute intestinal obstruction and intestinal perforation is nearly equal in this hospital.

It was observed that out of 127 patients confirmed as acute appendicitis upon operation, 76.5% had inflamed appendix, Lump was encountered in 9.6% while it was perforated in 7.8% of cases, appendicular abscess was found in 3.5% of cases and 2.6% had mucocele of appendix. It was found from the study that the most common cause of acute intestinal obstruction was acute small bowel obstruction which was present in 71.83% of the patients as compared to large bowel

obstruction which accounted for only 28.17% of the cases. The ratio of small bowel to large bowel obstruction is 2.55:1.

It was observed from the study that most common cause of acute small bowel obstruction is bands and adhesions accounting for 54.6% of patients. Obstructed hernia accounted for 23.2% cases followed by strictures (11.0%). Intussusception and malrotation of small bowel were encountered in 4.8% and 3.2% cases respectively. Internal hernia and foreign body in small bowel lumen were noted in 1.6% each.

Sigmoid volvulus was most common cause of large bowel obstruction accounted for 72% cases i.e. 18 out of 25 cases and carcinoma of rectum was found in 4 cases that was 16%, followed by 3 cases of carcinoma of sigmoid colon which accounted for 12%.

It was observed that duodenal perforation was most common accounting for 46.4% of cases while gastric perforation was seen in 25%. Ileal perforation was present in 22.6% of cases and jejunal and caecal perforations accounted for 2.4% and 3.6% of cases respectively.

Table 2 : Management of acute non-traumatic abdominal emergencies.

Diagnosis	Operative	Percentage	conservative	Percentage
Acute appendicitis	121	95.5	06	04.5
Acute intestinal obstruction	77	86.7	12	13.3
Intestinal perforation	78	93.4	06	06.6
Acute cholecystitis	02	11.3	19	88.7
Liver abscess	03	21.6	11	78.4
Acute pancreatitis	00	00	04	100
Other causes	07	100	00	00
Total	288	83.2	58	16.8

Table 2 shows that out of 346 cases of non-traumatic acute abdominal emergencies 58 (16.8%) were managed conservatively while 288 (83.2%) were operated.

DISCUSSION

Most common cause of acute non-traumatic emergency in our study is acute appendicitis (36.6%), followed by acute intestinal obstruction (25.4%), intestinal perforation (24.3%), acute cholecystitis (6.1%), acute pancreatitis (1.3%), liver abscess (4.2%).Highest incidence (27.64%) of acute non-traumatic emergencies was seen in 21-30 years age group. Similar trend of age was noted by Aijaz A et al[3]. 63.72% cases of acute non-traumatic emergencies were males and rest (36.28%) were females.

Acute appendicitis- Acute appendicitis accounted for 36.6% cases of acute non-traumatic emergencies. Compared to other studies we had higher incidence of acute appendicitis (Aijaz A et al observed 35%, Chanana L et al noted 30.60%)[3,4] the higher incidence could be attributed due to the fact that in our studies medical, urological and gynaecological cases were excluded. Out of 127 cases of acute appendicitis 06 (4.5%) were managed conservatively while 121 (95.5%) wereoperated. Out of 127 patients confirmed as acute appendicitis upon operation 76.5% have inflamed appendix while 7.8% was perforated. Lump (9.6%), appendicular abscess (3.5%) and mucocele (2.6%) were noted. There was no mortality in cases of acute appendicitis in our study. Guller U, Hervey S, Purves H, et al reported mortality of around 0.3% in appendicectomy[5].

Acute intestinal obstruction- Acute intestinal obstruction accounted for 25.4% case and was second leading cause of non-traumatic acute abdominal emergencies. A retrospective study by Aijaz A also noted that intestinal obstruction was the second leading cause accounting for 28.5% of cases. 71.83% cases of acute intestinal obstruction were due to small bowel as compared to 28.17% due to large bowel with ratio of small bowel to large bowel obstruction is 2.55:1[3]. This is in concordance to study done by Drozdz W. Budzyriski P where he observed that small bowel is involved in about 80% of cases[6].

Acute small bowel obstruction- Most common cause of acute small bowel obstruction was bands and adhesions (54.6%) followed by obstructed hernia, tubercular stricture, intussusception, malrotation Internal hernia and foreign body in small bowel lumen accounted for 23.2%, 11.0%, 4.8%, 3.2%, 1.6% and 1.6% cases respectively. Out of 64 patients of small bowel obstruction 12.5% patients were managed conservatively and rest (87.5%) were operated.

Acute large bowel obstruction- Sigmoid volvulus was most common cause of large bowel obstruction accounted for 72% cases i.e. 18 out of 25 cases and carcinoma of rectum was found in 4 cases that was 16%, followed by 3 cases of carcinoma of sigmoid colon which accounted for 12%.

Intestinal perforation- Hollow viscus perforation accounted for 24.3% cases. Duodenal perforation was most common cause accounting for 46.4% of cases while gastric perforation was seen in 25.0%. A Study by Jhobta RS et al of 504 consecutive cases of perforation peritonitis in GMCH, Chandigarh, also found duodenal ulcer (57.34%) as the most common cause of perforation[7].Out of total 84 cases of hollow viscus perforation 73.8% cases were due to upper G.I.T. perforations (peptic), 26.2% cases were due to lower G.I.T perforation. These results are similar to other studies conducted in India and tropical countries whereas in western literature, lower gastrointestinal tract perforations predominate. 6.6% cases of hollow viscus perforation were managed conservatively while 93.4% by operation. All conservatively managed cases presented in septicemic shock and were unfit to undergo operative management. Mortality was higher (90.48%) in cases of hollow viscus perforation managed conservatively compared to those managed operatively (3.15%), with overall mortality of 18.96% while Jhobta RS et al, Kemparaj T et al, Bangalore noted overall mortality and 13.8% respectively[7,8,10].

Acute cholecystitis- Acute cholecystitis accounted for 6.1% cases while in study done by Brewer BJ et al, it accounted for 3%-10%[9,10]. 99.10% of cases of acute cholecystitis were due to acute calculous cholecystitis and only 0.90% due to acute acalculous cholecystitis.

Acute pancreatitis- Acute pancreatitis accounted for 1.3% cases. Gall stone disease (37.04%) was found to be the most common aetiology followed by alcoholic pancreatitis (35.18%) and Idiopathic pancreatitis (27.78%). These findings are consistent with study conducted by McEntee et al[11]. All cases of acute pancreatitis managed conservatively, as cases of pseudo pancreatic cyst presented a lump abdomen were excluded from the series. Mortality rate in acute pancreatitis is 14.81%.

Liver abscess- Liver abscess accounted for 4.2% cases. 78.4% cases of liver abscess were managed conservatively 21.6% were operated following rupture. There was no Mortality in liver abscess.

MANAGEMENT- out of 346 cases of non-traumatic acute

abdominal emergencies 58 (16.8%) were managed conservatively while 288 (83.2%) were operated. 95.5% cases of acute appendicitis were operated and only 4.5% underwent conservative management. The rate of operative intervention in acute intestinal obstruction and acute cholecystitis was 86.7% and 11.3% respectively. 93.4% cases of intestinal perforation were operated while 6.6% were treated conservatively. Only 21.6% cases of liver abscess underwent operation while all patients of acute pancreatitis were managed conservatively.

MORTALITY- Highest incidence of mortality was found in intestinal perforation followed by small bowel obstruction, acute pancreatitis while acute cholecystitis and acute large bowel obstruction contributed to smaller percentage. No mortality was reported in cases of acute appendicitis, Liver abscess, and other causes of non-traumatic acute abdominal emergencies i.e. right ovarian cyst, mesenteric adenitis and non-specific cause. Overall mortality in our study of acute non-traumatic abdominal emergencies was 7.2%.

RESULTS:

Most common cause of acute non-traumatic emergency in our study is acute appendicitis which comprises 36.6% of the patients. Out of 346 cases of non-traumatic acute abdominal emergencies, 69 (20%) were managed conservatively while 277 (80%) were operated. 95.6% cases of acute appendicitis were operated and only 4.4% underwent conservative management. The rate of operative intervention in acute intestinal obstruction and acute cholecystitis was 88.70% and 83.20% respectively. 94.70% cases of intestinal perforation were operated while 5.30% were treated conservatively. Only 16.6% cases of liver abscess underwent operation. All patients of acute pancreatitis were managed conservatively. Overall mortality in our study of acute non-traumatic abdominal emergencies was 4.56%.

CONCLUSIONS:

It can be concluded that acute non-abdominal emergencies admitted in the hospital constitute a major segment of surgical patients, majority of which requiring operative management.

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