

Original Article

Acute Abdomen – A Clinical cross-sectional study of six consecutively operated cases

G.P. Navaneethan¹, T.Thivagar², Sathiya Jeeva Jeevakarunyam³

¹Associate Professor, Department of General Surgery, Annapoorana Medical College and Hospital, Salem, Tamil Nadu, India.- 636308

²Assistant Professor, Department of General Surgery, Government Thanjavur Medical College and Hospital, Thanjavur, Tamil Nadu, India.

³Associate Professor, Annapoorana Medical College and Hospital, Salem, Tamil Nadu, India.- 636308

ABSTRACT

Background and objectives: Acute abdomen is one of the commonest problems in surgical practice. The abdomen Pandora's magic box demands the good clinical examination diagnosis and treatment. The present study attempted to evaluate various modes of clinical presentation of acute abdomen, their surgical management and post operative complications in our center. **Methods:** The present study included 60 cases of acute abdomen due to non traumatic/ non-gynecological causes, after thorough clinical examination and investigations. They were subjected for laparotomy and treated accordingly, each case was analyzed for postoperative complications like wound infection, respiratory infection, fecal fistula, septicaemia, and mortality. They were following for period of 6 months for incisional hernia and intestinal abstraction. **Results:** In our study acute abdomen was common in age group of 30-40 yrs with male preponderance (M:F,4:1). Duodenal ulcer preparation is the commonest cause of acute abdomen. Clinical accuracy of diagnosis was upto 90%. When compared with the intraoperative findings, wound infection is the major post operative complications affecting 11 cases (18.33), mortality was seen in 5 cases. **Interpretation and conclusion :** The early presentation, early diagnosis, accurate investigation, early appropriate surgical intervention, reduces the morbidity and mortality in acute abdomen.

Key words: Acute abdomen; duodenal ulcer perforation; laparotomy; wound infections; morbidity and mortality.

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Corresponding Author: Dr. G.P. Navaneethan M.S., Associate Professor, Department of General Surgery, Annapoorana Medical College and Hospital Salem, Tamil Nadu, India.- 636308

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INTRODUCTION

Acute abdomen refers to the clinical situation in which an acute change in the condition of the intra abdominal organ, usually related to inflammation or infection, demands immediate and accurate diagnosis¹ with acute abdominal pain present for less than 6-8 hours.² The challenging and most fascinating subject in surgery is study of acute abdomen. It constitutes about 5-10% of all emergency department visits.¹

Copein 1921 wrote that 'the majority of severe abdominal pain which ensure in patients who have been

previously fairly well and which lasts as long as 6 hours are caused by conditions of surgical importance'. Success in treatment of acute abdomen depends largely on early diagnosis with early intervention and good postoperative care.

Sir Henle's aphorism is that 'In acute abdominal emergencies, the difference between the best and worst surgery is infinitely less, than between early and late surgery and greatest sacrifice is sacrifice of time'. 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 group.¹

Acute appendicitis is more common in children's where as biliary disease, colonic diverticulosis and intestinal infarction occur more commonly in the elderly.¹ The case history remains one of the most useful tools in the diagnosis of Gastro Intestinal disease and the art of physical examination is also of great importance in the diagnosis of abdominal pain.² Assessment of the patient who has an acute abdomen culminates in deciding whether the patient should be subjected to the risk of general anaesthesia for open operation.²

The aim of the study is to know the various modes of clinical presentation of acute abdomen and their surgical management with post operative complications.

MATERIALS AND METHODS:

This study comprises a detailed clinical cross sectional study of 60 consecutively operated cases of acute abdomen of different etiologies. The materials for the clinical study were collected from cases admitted in Annapoorana Medical College and Hospital, Salem. The study was conducted during the period Jan 2017 to July 2017.

Patients in age group of 18 years and above of either sex were selected, who were consecutively operated, excluding, traumatic, gynecological causes. These patients with history of sudden onset of pain abdomen, vomiting, fever, are examined. They found to have tenderness/ guarding/ rigidity, distention of abdomen are diagnosis as acute abdomen and subjected for evaluation.

The investigation done in the cases selected for study were the following.

- 1) Routine blood examination including Hb%, TC, DC, ESR, blood grouping, HIV/ HBSAg.
- 2) RBS, blood urea, serum creatinine and serum electrolytes.
- 3) Urine examination including albumin, sugar and microscopy.
- 4) Erect abdomen x-ray to detect free gas under diaphragm or multiple air fluid level.
- 5) 4 quadrant abdominal paracentesis.
- 6) Ultrasonography

Adequate pre operative preparation and the diagnosis was established in each cases and subjected for laparotomy. The nature of acute abdomen and cause were noted at laparotomy was followed up for post operative complication.

Inclusion criteria:

Patients presenting with signs and symptoms of acute abdomen who undergo surgery will be included in this study from Jan 2017 to July 2017.

- Adults (patients above age 18 years)
- Signs and symptoms of acute abdomen as determined by concerned unit staff.
- Of these patient only those who underwent surgery were included.

Exclusion criteria:

- Children below < 18years.
- Acute abdomen due to trauma
- Obstetric and gynaecological cases will be excluded from this study.
- Adult patients who are managed conservatively, who refuses Operative treatment will be excluded in the study.

All 60 patients underwent laparotomy and the results were compared with postoperative diagnosis. The etiology, diagnosis, type of operation, prognosis were analysed. All this cases were followed-up for a period of 6 months for complications.

RESULTS

This clinical study of 60 cases of acute abdomen were analysed as follows:

In our study the common age group was between 31-40 year (23.33%) of 14 cases followed by 21-30 years (21.67%) of 13 cases and 41-50 years (20%) of 12 cases and <20year (18.33%) of 11 cases 65% of patient were between 21-50 years (Figure 1) and the study groups consist of male constituted 48 cases (80%) and female 12cases (20%) with sex ratio 4:1 (Male:Female).

In our study perforation of the hollow viscus is the commonest cause of acute abdomen with 28 cases (46.67%) which comprises of Duodenal ulcer perforation (DU) 17 cases (28.33%), ileal perforation 8 cases (13.33%) and gastric perforation 3 cases (5%). Acute appendicitis were 19 cases 31.67% and intestinal obstruction 11 cases (18.33%) which included small bowel obstruction 9 cases 15% and large bowel obstruction 2 cases 3.33%. Meckels were found in 2 cases with 3.33%.

In our study of acute abdomen, pain abdomen was the commonest presentation with 98.33% followed by vomiting in 91.67%, fever 60%, distension 56.67%, constipation 36.67%. Of the 28 cases of perforations in 17 cases were of DU perforations. The patients presented with vomiting 100%, pain abdomen 94.12%. Constipation 47.06% distension 42.86% and fever 17.65%. 8 cases of ileal perforation patients presented with pain abdomen 100%, vomiting in 100%,

distension in 87.5%, fever in 75% and constipation in 12.5%.

Out of 3 cases of gastric perforation patients presented with pain abdomen in 100%, distension 100% and vomiting, constipation and fever in 66.67%. In 19 cases of acute appendicitis patients presented with pain abdomen in 100%, vomiting in 78.95%, fever in 73.68%, distension in 15.79%, and constipation in 10.53%. In 11 cases of intestinal obstruction out of 9 cases of small bowel obstruction pain abdomen were in 100% vomiting 100%, fever in 88.89%, constipation and distension in 77.78%. Out of 2 cases of large bowel obstruction both patients had pain abdomen, vomiting, constipation and distension at 100%. In 2 cases of Meckel's diverticulum both patients presented with pain abdomen, vomiting and fever.

In our study of acute abdomen the commonest sign elicited was guarding, rigidity, decreased abdominal movement, dehydration, elevated temperature, obliteration liver dullness, and absent peristaltic sound. Out of 28 cases of perforation 17 cases were of DU perforation in which commonest sign included guarding and rigidity in 94.12%, decreased abdominal movement in 88.24%, obliteration of liver dullness in 82.35%, distension in 76.47%. 8 cases of ileal perforation, rigidity was in 100% followed by dehydration, decreased abdominal movement, distension, guarding, obliteration of liver dullness and absent peristaltic sound in 87.5%.

In 3 cases of gastric perforation all had guarding, rigidity, distension, decrease abdominal movement, temperature, dehydration and obliteration of liver dullness in 66.67%. Out of 19 cases of acute appendicitis all had guarding, rigidity followed by temperature in 73.68%, dehydration in 26.32%, decrease abdominal movement and obliteration of liver dullness with 10.53%. Out of 11 cases of intestinal obstruction which included 9 cases of small bowel obstruction dehydration and decreased abdominal movement where in 88.89%, guarding, rigidity in 77.78%, distension in 66.67%, temperature in 33.33%. 2 cases of large bowel obstruction all had guarding, rigidity, distension, absent peristaltic sound and reduced abdominal movement in 100% and dehydration in 50%. 2 cases of Meckel's diverticulitis all had guarding, rigidity and temperature.

Erect abdomen X ray was taken in all perforation (28) and obstruction cases (11) appendicitis (19) Meckel's diverticulitis (2) total of 60 cases. In DUP out of 17 cases positive findings were seen in 16 cases (94.12%) and negative in 1 case (5.88%). Out of 8 cases of Ileal perforation 5 cases had positive X ray finding at 62.5%, and out of 3 GUP all (100%) had positive findings. Out of 11 cases of Intestinal obstruction all (100%) had positive X-ray.

In our study of acute abdomen which included 17 cases of DUP and all underwent (100%) closure of perforation with omental patch, 8 cases of IP and all underwent closure of perforation with omental patch (100%), 3 cases of gastric ulcer perforation and all underwent closure of perforation with omental patch (100%). Out of 19 cases of acute appendicitis all underwent appendectomy 100%. Out of 11 cases of intestinal obstruction 6 patients underwent resection anastomosis (54.55%), 2 patient band release (18.18%), and 1 patient with ileo-transverse anastomosis (9.09%) and 2 patients underwent the colectomy (18.18%). Out of 2 cases of Meckel's diverticulitis both underwent diverticulectomy and end to end anastomosis (100%).

In our study we observed that the clinical diagnosis in acute abdomen was by enlarge accurate 90%. We had seen 2 cases of Meckel's diverticulitis out of the 21 cases diagnosed preoperatively as appendicitis, of the 11 cases of intestinal obstruction. 9 cases proved correct operatively with 2 cases were hollow viscus perforation. Out of the 28 cases of perforation that we had preoperatively diagnosed 2 of them turned out to be intestinal obstruction. All the cases were treated according to the etiology.

In all cases when laparotomy was done, peritoneal toilet was performed. The solution used was normal saline. Same times with antibiotics. Post operatively input and output chart, pulse, blood pressure, respiration and temperature chart was put. Nasogastric suction, I.V. fluid to correct electrolyte in balance was given, all patients were given antibiotic like cefotaxime or ceftriaxone 1 gm Bd. and metronidazole 100 ml Tid. Early ambulation and breathing exercise was practiced in all the cases. Bowel sound appeared on 3rd or 4th day, drain removal, ryles tube removal and suturing removal was done depending on the clinical judgement in individual cases.

In our study morbidity of operated cases of acute abdomen in the form of wound infection in 11 cases (18.33%), respiratory infection 6 cases (10%), hypotensive shock in 3 cases (5%), incisional hernia in 2 cases (3.34%). Fecal fistula in 1 case (1.67%), septicemia in 4 cases (6.67%) and incision hernia and intestinal obstruction were not observed. In our study the commonest complication were wound infection followed by respiratory infection. During follow-up we had 11 cases of wound infection which were treated with regular dressing and appropriate antibiotic, fecal fistula patients were explored. And respiratory tract infection were treated conservatively.

Out of 60 cases studied 5 patients expired which included 1 patient was of DUP, 2 cases was IP and 1 each from Gastric ulcer perforation and intestinal obstruction. This patient presented in late stage and developed hypotensive shock and septicemia.

DISCUSSION:

The results obtained in the present study were compared with previously conducted similar studies. Dandapat et al (1991)³ studied 340 cases of perforation and analysed the age incidence as <20 year (14.71%) 21-30 year (22.94%), 31-40 year (38.24%) and >40 years (24.12%). In our study of 28 Hollow viscus perforation occurred in 20 years age group were 4 (14.29%), 21-30 year 6 patient (21.43%), 31-40 year were 10 cases (35.71%) and > 40 years were 8 cases (8.57%) comparable to previous study. Dandapat et al (1991) stated that out of 340 case there were 304 male patient (89.41%) and 36 female patient (10.59%) with sex ratio of 8.4:1. In our study of perforation there were 24 male patients (85.71%) and 4 female patient (14.29%). In the sex ratio of 6:1.

DCM Rao et al⁴ (1984) studied 46 case and reported that D.U.P was (43%), I.P (39%) and G.U.P (13.3%). In Dandapat et al³ 1991 stated 340 cases and reported that D.U.P was (72.9%), I.P (7.3%), G.U.P (8.2%). In our study of 28 cases of hollow viscus perforation there were 17 cases of D.U.P (60.71%), 8 cases of IP (28.57%), and 3 cases of G.U.P (10.71%).

S.K. Nair et al⁵ in 1981 studied post operative complication of hollow viscus perforation there were wound infection in 52%, respiratory infection 4%, intestinal obstruction in 4%, fecal fistula in 16% and septicaemia in 8%. In our study of 28 cases of hollow viscus perforation there were 9 cases with wound infection (32.14%), respiratory infection in 4 cases (10.71%), hypotension in 3 cases (10.71%), faecal fistula in 1 case (3.57%) and septicemia in 3 cases (10.71%). In the present series out of 11 intestinal obstruction the age distribution in the form of <20yrs 1 case (9.09%), 31-40 yrs 5 cases (45.46%), 41-50 yrs consist of 1 case (9.09%), 51-60 yrs with 3 cases (27.27%). In our study out of 11 cases of intestinal obstruction there were 8 male patient (72.73%) and 3 female patient (27.27%) with male:female ratio of 2.67:1. Which was compared to following study Shakeeb et al⁶ (1975) who has stated the sex ratio at 3:1. K.P. Rao et al⁷ (1982) stated at 3.7:1. Shakeeb et al⁶ stated the various causes of intestinal obstruction at adhesion 32.7%, hernia 17.5%, K.P. Rao et al⁷ stated valvulus (14.5%) and strangulation (6.3%). In the present study we had 5 cases of adhesions (45.45%), 4 cases of hernia (36.36%), 1 case of volvulus (9.09%) and 1 case of strangulation (9.09%).

In our study the commonest presenting symptoms of intestinal obstruction was pain abdomen 100%, vomiting 100%, constipation (81.82%) and distention (81.82%). which was comparable to other studies by Budharaja S.N. et al⁹ (1976) Col, K.P. Rao et al⁷ (1982) and E.S.Palwe⁸ (1988).

In our study of 11 cases of intestinal obstruction 1 female patient expired in 9.09% which is also coincide

with other authors Col, K.P. Rao⁷ (1982) 8.5%, G. Mc Ente DP ender¹⁰ (1987) 11.4%, E.S. Palwe⁸ (1988) 8%.

Appendicitis is uncommon in the first decade of life and rare below the age of 3yrs. The peak incidence is between 18-30 yrs of age. In our study there were 6 cases below 20yrs (31.58%), 8 cases between 21-30 yrs (42.11%), 3 cases between 31-40 yrs (15.79%), 1 case between 41-50 yrs (5.26%) and 1 case >50yrs (5.26%). In our study of 19 cases of acute appendicitis there were 14 male case (73.68%) and 5 female cases (26.32%) the sex ratio male to female was 2.8:1. Which was compared to Bhatnagar et al (1978)¹¹ reports at 3:1. In our study of 19 cases of acute appendicitis the presentation were as pain abdomen (100%), vomiting (78.95%), constipation (10.53%) and fever (63.16%) which were compared with John Berry et al¹² and Bhatnagar et al¹¹ stated as per the John Berry et al 1984¹² stated that post operative wound infection following appendectomy were (17%). Cocioppo JC1989 stated in a similar study wound infection (5.6%). In our present study of 19 cases of acute appendicitis there were 2 cases of wound infection (10.53%).

CONCLUSION

From our study of 60 clinical cross sectional operated cases of acute abdomen following can be concluded. The most common age group seen in 31-40 years and there was male preponderance with male:female ratio of 4:1. The most common symptoms-signs are pain abdomen, vomiting and guarding, rigidity. Hollow viscus perforation was the most common condition seen in our study with 28 cases (46.6%) in that duodenal perforation was common. Other causes includes acute appendicitis followed by intestinal obstruction and Meckel's diverticulitis. Use of x-ray erect abdomen along with USG of the abdomen helps in clinching the diagnosis in acute abdomen. Patients who presented late, with poor general condition and hypotension. Undergoing delayed surgery increased the morbidity and mortality. Our clinical diagnosis proved correct intra operatively. Therefore, exception in 6 cases, we consider clinical diagnosis accurate in 90% of acute abdomen. From this study it is found that early presentation, early diagnosis, good pre operative resuscitation, timely surgical intervention, good post operative care is essential in all cases of acute abdomen to reduce mortality.

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