



RESEARCH ARTICLE

ABDOMINAL EMERGENCY IN PATNA MEDICAL COLLEGE, PATNA – AN ANALYSIS

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ABSTRACT

Background: Acute abdominal emergencies are common reason for admission into emergency unit of most hospitals. This study was undertaken to look at the spectrum of such presentations to Patna Medical College and Hospital, Patna, Bihar, India. The management and outcome were also highlighted.

Method: A retrospective review of case notes of patients with abdominal emergency conditions between year 2012-14 was carried out. Parameters studied included demographic characteristics, diagnosis, management and outcome.

Results: A total of 202 patients were studied. Out of this male: female ratio was 2.8:1. The mean age was 35.5 years. In present study hollow viscus perforation, duodenal ulcer perforation has higher incidence rate 31 (15.34%). Next is typhoid ulcer perforation 29 (14.35%) and acute appendicitis 26(12.8%) (14.35%) followed by obstruction due to band adhesion 19(9.4%), closed injury of abdomen 17(8.4%), volvulus 16 (7.92%), open injury of abdomen 11(5.44%), ruptured liver abscess 9 (4.45%), strangulated inguinal hernia 7(3.46%), acute cholecystitis 6 (2.97%), imperforate anus 6(2.97%), gastric ulcer perforation 5 (2.47%), intussusceptions 5 (2.47%), obstruction due to stricture of small intestine 4(1.99%), round worm infestations 4(1.99%), meckle's diverticulum 3(1.49%), acute pancreatitis 2(0.99%), large bowel perforation 1(0.49%), growth in colon and rectum 1(0.49%).

Conclusion: Duodenal ulcer perforation was the commonest cause of abdominal emergency in our study. This was followed by typhoid ulcer perforation and acute appendicitis.

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INTRODUCTION

Abdomen is latin word for "belly" and is related to the latin verb abdomen i.e. to hide the inference being whatever is ingested is hidden or tucked away in the abdomen. Abdominal emergency refer to the clinical situation in which an acute change in condition of intra-abdominal organs occurs which is usually related to inflammation or, infection, or trauma. The most common symptom and signs that threatens life and needs immediate surgical intervention and management. From the earliest days to modern times surgeon have to face with abdominal emergency of which some are fatal. In spite of rapid and impressive advancement in the treatment due to greater therapeutics resources abdominal emergencies are still a cause of a considerable mortality and morbidity. In casualty ward of any big hospital, one has to deal with large number of cases of abdominal emergencies. The cause of abdominal emergencies ranges from infection to trauma. The important causes are as follows:

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Inflammatory conditions

- Acute appendicitis
- Acute cholecystitis
- Acute pancreatitis
- Acute perforation leading to localized or diffuse peritonitis

Perforated peptic ulcer

- Gastric
- Duodenal

Perforation of other viscera

- small intestine
- Large intestine

Abdominal injuries

- open injury of abdomen
- closed injury of abdomen

Obstructive condition

- Volvulus
- Strangulated hernia
- Intussusception
- Obstruction due to bands and adhesion
- Obstruction due to stricture of small intestine
- Tuberculosis
- Growth in colon and rectum
- Ascariasis

Congenital condition

- Imperforate anus
- Meconium peritonitis

In view of the serious conditions and the importance of proper diagnosis for adequate management any clinician must be fully aware of various causes of abdominal emergencies. A proper analysis of clinical picture is most important criteria.

MATERIAL AND METHODS

The study was carried out in the department of general surgery, Patna Medical College and Hospital, Patna, Bihar, India. The present study was conducted in 202 established cases of acute abdominal emergencies admitted through surgical emergency on Friday of every week between year 2012 to 2014. Demographic characteristics, diagnosis management and outcome were the parameters studied.

RESULTS

The total number of patients in the 2 year study period was 202. This was made up of 149 male and 53 female having ratio of 2.8:1. The age of the patients ranges from < 20 years to > 70 years with mean age group 31-40 years. The table 1 & 2 shows the sex ratio and age distribution with modal age in the third decade, respectively.

Table 1. Incidence of abdominal according to sex

Sex	No. of cases	Percentage
Male	149	73.76
Female	53	26.23
Total	202	100

Table 2. The age distribution in various cases of abdominal emergencies

Age (years)	No. Of Cases	Percentage
Below 20 years	31	16.51
21 – 30	47	22.11
31 – 40	51	27.20
41 – 50	37	17.38
51 – 60	18	11.55
60 – 70	13	4.52
70 & above	3	0.59
Total	202	100.00

Duodenal ulcer perforation was the most commonly diagnosed emergency (15.3%) more in 3rd decades of life. Followed by typhoid ulcer perforation (14.35%) which was more in 2nd and 3rd decades of life, acute appendicitis (12.85%) more in 3rd and

Table 3. The incidence of different abdominal emergencies with preoperative diagnosis in various age groups

	Age in years								total	%
	0-10	11-20	21-30	31-40	41-50	51-60	61-70	>70		
Duodenal ulcer perforation	-	01	05	13	06	03	02	01	31	15.3
Typhoid ulcer perforation	04	10	08	05	02	-	-	-	29	14.3
Acute appendicitis	02	07	09	04	02	02	-	-	26	12.8
Obstruc. d/t band & adhesion	-	01	03	07	05	02	01	-	19	9.41
Closed injury of abdomen	-	02	06	04	03	01	01	-	17	8.41
Volvulus	-	-	-	01	03	06	04	02	16	7.92
Open injury of abdomen	01	02	02	03	02	01	-	-	11	5.44
Ruptured liver abscess	-	-	02	04	02	01	-	-	09	4.45
Strangulated inguinal hernia	-	-	01	02	01	01	01	01	07	3.47
Acute cholecystitis	-	-	01	03	01	01	-	-	06	2.97
Imperforate anus	06	-	-	-	-	-	-	-	06	2.97
Gastric ulcer	-	-	-	02	01	01	01	-	05	2.47
Intussusception	02	-	-	01	01	01	-	-	05	2.47
Obstruction d/t stricture of SI	01	02	01	-	-	-	-	-	04	1.99
Roundworm infestation	03	01	-	-	-	-	-	-	04	1.98
Meckle's diverticulum	02	-	01	-	-	-	-	-	03	1.49
Acute pancreatitis	-	-	-	02	-	-	-	-	02	0.99
Large bowel perforation	-	-	-	01	-	-	-	-	01	0.49
Growth in colon & rectum	-	-	-	-	-	-	01	-	01	0.49
TOTAL									202	99.9

Table 4. The outcome of surgical procedures performed in various cases of abdominal emergencies

Surgical Procedure	Cured (%)	Expired (%)	Total	%
Simple closure with omental patching	39 (82.9%)	8 (17.1%)	47	23.3
Resection with end to end anastomosis	35 (83.3%)	7 (16.7%)	42	20.8
Resection with ileotransverse Anastomosis	5 (71.4%)	2 (28.6%)	7	3.5
Appendicectomy	14 (100%)	-	14	6.9
Laprotomy with peritoneal Lavage and placement of abdominal drain	21 (95.5%)	1 (4.5%)	22	10.9
Ileostomy	18 (85.7%)	3 (14.3%)	21	10.4
Adhesion removal	16 (100%)	-	16	7.9
Transverse colostomy	5 (83.3%)	1 (16.7%)	6	2.9
Colostomy	5 (62.5%)	3 (37.5%)	8	3.9

2nd decades of life, obstruction due to band and adhesion (9.40%) more in 4th and 5th decades of life. Closed injury of abdomen (8.41%) almost same in all age groups and volvulus (7.92%) was more common in 6th & 7th decades of life. Duodenal ulcer perforation and typhoid ulcer perforation was present in 77.4% and 72.4% in males respectively. Acute appendicitis was present in 61.5% in males while obstruction due to band and adhesion was present in 78.9% in females. Volvulus was present in 68.7% in males while acute cholecystitis was present in 66.7% in females. Strangulated inguinal hernia was exclusively present in males.

Table 3 showing the incidence of different abdominal emergencies with preoperative diagnosis in various age groups. In the present series total 26 patients had abdominal trauma out of which penetrating/open injury accounted for 42.3% (n= 11) while blunt trauma/ closed injury accounted for 65.38% (n=17). There were visceral injuries present in 06 cases of open and 13 cases of closed abdominal injuries and 03 cases were died during resuscitation. Out of 19 cases of visceral injury the no. of viscera injured were 26 and small intestine was injured in 36.8% (n = 7) followed by mesentery in 31.6% (n =6) cases. In our study various surgical procedure were done in which simple closure with omental patching 23.3% (n = 47) was most encouraged procedure followed by resection anastomosis 20.8% (n =42) (Table 4)

Wound infections 13.8% (n = 28), wound dehiscence 7.91% (n= 16) and burst abdomen 6.43% (n= 13) were the main post operative complication. Wound infection was polymicrobial in which E. coli 80.2% (n = 162) was dominating organism founded. A total of 25 deaths were recorded with overall mortality rate of 12.3% in which maximum no. of death was encountered in duodenal and typhoid ulcer perforation and maximum mortality present in extreme of age. Table 5 showing mortality rate in different types of abdominal emergencies In our study out of 202 cases 40.6% (n = 82) cases recovered early and without complication, about 47.1% (n = 95) cases had delayed due to either local and systemic complication and about 12.3% (n=25) died pre and post operatively due to shock, dehydration, electrolyte imbalance, renal failure etc.

DISCUSSION

The patients affected our study are relatively younger with mean age group 35.5 years than the study of other authors like John et al. (48.8 years) and Nave et al. (49 years). The sex incidence (M:F- 2.8 :1) of present series are in agreement with study of other workers as Huttunen (1977) and Mahendra et al. (1989) also reported male preponderance in their series. Higher incidence amongst the male population is attributed to smoking, alcohol consumption, tobacco chewing and other related outdoor activities.

Table 5. Mortality rate in different types of abdominal emergencies

Types of cases	No. of death			Mortality (%)
	Pre-operative complication	Post-operative complication	Total	
Typhoid ulcer perforation	1	4	5	16.1
Duodenal ulcer perforation	2	5	7	24.1
Closed injury of abdomen	1	3	4	15.4
Volvulus	-	3	3	15.8
Obstruction d/t band & adhesion	-	-	-	-
Acute appendicitis	-	-	-	-
Open injury of abdomen	-	2	2	18.1
Ruptured liver abscess	-	-	-	-
Strangulated ing. Hernia	1	-	1	14.3
Acute cholecystitis	-	-	-	-
Imperforated anus	-	-	-	-
Gastric ulcer perforation	-	1	1	20
Intussusception	-	1	1	20
Obstruction d/t stricture of SI	-	-	-	-
Acute pancreatitis	-	-	-	-
Large bowel perforation	-	1	1	100
Growth in colon & rectum	-	-	-	-

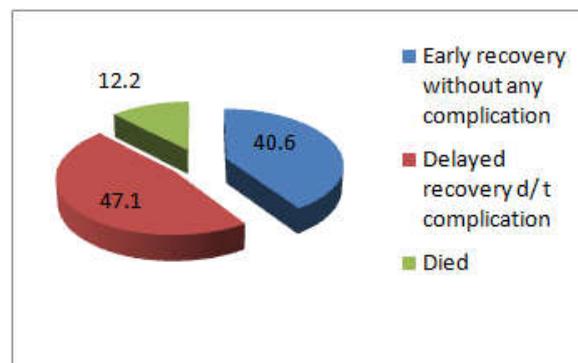


Diagram Showing morbidity and mortality in different cases of abdominal emergencies

Results of our study showed that duodenal ulcer perforation was the most common abdominal emergency accounting for 15.3% (n = 31) cases but typhoid ulcer perforation was not far behind with 14.3% (n = 29) cases followed by acute appendicitis 12.8% (n= 260) cases. Most published series shows similar trend. Navez et al (190-95) stated almost similar results, 35.5% and 30.3% cases of duodenal and typhoid ulcer perforation respectively. However, post operative adhesion is the chief cause of intestinal obstruction in developed countries. Blunt abdominal injuries was high in our study (8.41%) compared to penetrating abdominal injuries (5.44%) This might be due to higher rate of assault and violent clashes in our society followed by road traffic accident. Peritoneal diagnostic tapping and plain x- ray abdomen in erect posture along with USG abdomen, were ideal tool in confirmation of hollow viscus perforation in our study. Presence of gas under right dome of diaphragm in duodenal and typhoid ulcer perforation in present series is a consistent radiological finding and this is similar to the findings of other worker (Russel RCG, Norman NS 2004). Operative procedure performed for all cases of peptic ulcer perforation was simple closure with omental reinforcement yielded excellent results with 90% survival in present series while simple closure, resection anastomosis & stoma exteriorised in ileal perforation. In our study most common complication was wound infection 13.8% (n=28) followed by wound dehiscence in 7.91% (n=16) and burst abdomen in 6.43% (n=13). Most dreaded complication was GI fistula in 2.97% (n=6) cases. In the present study mortality rate was 12.37% (n=25) which was due to pre operative complication such as shock, electrolyte imbalance, dehydration, renal failure and post operative complication. Maximum mortality recorded in duodenal ulcer perforation i.e. 24.1% (n=7) followed by typhoid ulcer perforation 16.1% (n=5) which is almost similar to other workers.

Conclusion

Duodenal ulcer perforation was leading cause of abdominal emergencies with mean age group of 31-40 years and male preponderance (M:F- 2.8:1). Patients who presented late with poor general condition and shock, undergoing delayed surgery increased the morbidity and mortality. From the present 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 abdominal emergencies to reduce mortality.

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