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## Non-Traumatic Abdominal Surgical Emergencies.

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### ABSTRACT

Surgical emergencies represent more than 50% of surgical admissions and constitute a major part of the surgeon's workload in most parts of the world. Proportion of non-trauma surgical emergencies is reported to be between 30% and 57% with more than half requiring surgical intervention. This is higher than 30%-50% of trauma patients who will require emergency surgery. Significant deaths occur in the emergency room from non-trauma surgical conditions as reports from centres in Nigeria showed that between 21% and 38% of deaths in the accident and emergency room are from non-trauma cases. Acute abdomen, acute urinary retention, cutaneous abscesses, non-trauma Neuro-surgical and Cardiothoracic diseases are the leading causes of non-trauma surgical emergencies in many centers worldwide. To determine the common causes of acute abdomen and their incidence in our hospital. A total of 390 patients were studied during this period. On admission a detailed history was taken and a thorough physical examination was done. Necessary emergency investigations were done for all the patient. A methodical diagnosis was arrived at and treated accordingly. Our study showed a decrease in the average age of peptic ulcer perforation with an overwhelming majority of male patients. Ileal perforation was the next commonest cause of perforations almost all being due to typhoid. Inguinal hernias were the commonest herniae to become obstructed. The age and sex incidence conferred to the previous studies. Small bowel obstruction seems to be disease of the young as shown by our series. There was almost equal incidence among both sexes. Adhesions were the first commonest cause of intestinal obstruction, only after obstructed inguinal hernias. Large bowel obstruction with an average age incidence of 50 yrs. and a male predominance seems to be a disease of the middle aged. Volvulus and malignancies accounted for all the cases.

**Keywords:** Acute abdomen, Accurate diagnosis, Urgent treatment, Acute appendicitis.

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## INTRODUCTION

An acute abdomen is best defined as a short-term occurrence of abdominal symptoms that suggest disease, which definitely or possibly threatens life, and may or may not demand immediate operative interference [1]. The majority of emergency admissions to surgical wards are patients complaining of acute abdominal pain. Acute abdominal pain continues to provide a large work load for the general surgeon and also many diagnostic and management problems [2]. Different techniques have been introduced over the past to help in the management of acute abdomen. An accurate diagnosis is essential for the correct treatment, which in many cases will prevent the death of the patient [3]. The natural history of acute abdomen depends on the pathological process involved, which in some instances may resolve spontaneously with or without treatment and at other time may progress to generalised peritonitis and death [4]. Hasty decisions are rarely necessary and if carried out may be incorrect or misleading. The history and physical examination done by an unhurried surgeon remains the cornerstones of the diagnosis, which is confirmed by laboratory data and or when necessary, by radiographic studies [5]. If this information is unnecessary, the periodic reexamination helps document the progression of the disease and often avoids unnecessary surgical intervention. Understanding the anatomy and physiology of the peritoneal cavity as well as the pathological process that occur is essential for an accurate diagnosis and treatment. Today the combination of improved diagnostic procedures, antibiotics and better anaesthesia and preoperative and post operative patient care has led to a decrease in morbidity and mortality of patients with acute abdomen [6].

## MATERIALS AND METHODS

A total of 390 patients were studied during this period. On admission a detailed history was taken and a thorough physical examination was done. Necessary emergency investigations were done for all the patient. A methodical diagnosis was arrived at and treated accordingly. All the patients presenting as acute abdomen who are taken up for surgery during the period from June 2021 to May 2022 at Government Nilgiris Medical College & Hospital, Indunagar, Mysore Road, Udhamandalam, Tamil Nadu, India were included in my study. All patients with trauma induced abdominal injuries were excluded from the study. Patients treated by conservative management were excluded from this study. For the appendicectomy in the majority of the patients, stump burial was done by either using a purse string or a Z plasty technique. Less than (7 cases) 3 of the patients necessitated a retrograde technique. For the appendicular abscess patient of cases an (extra) peritoneal drainage was done and in all cases a drain was kept. In the appendicular mass patients as there was only early mass formation, separation of the appendix with appendicectomy was easily done. The material used in burying the stump was chromic catgut. In the case of carcinoid due to the localised nature of the disease, appendicectomy was done.

## RESULTS

Of the total of 390 cases studied, i.e cases needed emergency surgical intervention. The remaining patients were managed conservatively. The adhesive obstruction and the pancreatitis patients were reviewed periodically and observed for pulse rate, BP and progressive distension of abdomen. Any gross alteration in these parameters, the patients were taken up for surgery. Acute appendicitis was the commonest accounting for 62.8% of all the cases. This was followed by hollow viscus perforation 14% and obstructed hernias 13%.

**Table 1: Total cases studied**

Type	Total No.	Percentage
Appendicitis	245	62.8
Perforations	54	13.8
Obstructed hernias	50	12.8
Intestinal obstruction	23	5.8
Other cases	18	4.6

**Table 2: Appendicitis**

Age in years	Total No.	Percentage
0-10	2	0.8
11-20	93	38
21-30	96	39
31-40	37	15
41-50	14	5.7
>50	3	1.2

Table 2: Comparing the age incidence there was a maximum incidence of cases in 11-20 and 21-30 age group, which accounted for almost 77% of all cases. In contrast to general studies and western studies the age incidence is maximum in the 0-10 age group, we had <2% such cases in our study. In our study as in other studies the male incidence (56%) predominated over the female incidence 44%. Regarding the position of the appendix 89.7% of our cases were retrocaecal as compared to western series 75% to 80%. Also 3.2% of our cases had preileal position. Compared to the usual 1-2%. There was a reduced incidence of pelvic appendix 4-5% as compared to the western series 20-25%. Our study thus showed an increase in the frequency of retrocaecal position with a sharp drop in the pelvic type. There was 1 case of appendicular carcinoid. As the patient had no evidences of any metastatic disease, no further surgery was done. All other appendix specimen was negative for carcinoid. The oldest patient was a 57 yrs. old male. The mortality in our series was 0% as compared to the usual 3-57. There was one patient who developed a faecal fistula post operatively.

**Table 3: Position**

Position	No.	Incidence
Retrocaecal	220	89.7
Preileal	8	3.2
Post ileal	3	1.2
Para caecal	1	0.4
Sub caecal	1	0.4
Pelvic	12	5

**Perforation of the follow viscus**

As expected, duodenal perforations contributed for more than 65% of our cases followed by ileal perforation 20%.

**Duodenal perforations**

There was a maximum incidence in the 21-30 age groups (28%) and in the 31-40 age group 15%. This was in contrast to the general studies which showed the maximum incidence in the old age group. The younger age group can probably be attributed to the stress and life style, all our patients belonging to the low socio economic groups. Our study showed a 95% incidences of male compared to western studies which shows only a 50% incidence. This again reflects our culture, with for fewer women in working jobs and exposed to less stress. In our series of peptic ulcer perforations, 68.5% were duodenal and only 18.5% were gastric perforations as compared to the normal 50-60% for duodenal perforations. All there were on the anterior wall of duodenum.

**Gastric perforations**

Out of the 10 gastric perforations 8 were on the antrum area, 2 in the pylorus. 10 cases of gastric ulcer which had perforated, a simple perforation closure and Biopsy was done. Histopathology came as adenocarcinoma in one patient. A subtotal gastrectomy was done after 1 month due to poor general condition of the patients.

**Ileal perforations**

Of the ileal perforations, 2 were proven beyond doubt to be due to typhoid as confirmed by widal tests. There were no deaths in the immediate post operative period. An interesting case of jejunal perforation was managed where the patient had multiple strictures in the small bowel, ascites and serosal nodules. The resected specimen showed features of TB. Another case simple closure done with vicryl and silk.

**Table 4: Perforation**

Type	Total No.	Percentage
Duodenal	37	68.5
Gastric	10	18.5
Ileal	2	3.7
Others	5	9.2

**Table 5: Duodenal perforation**

Age in years	Total No.	Percentage
10-20	5	13.5
21-30	15	40.5
31-40	8	21.6
41-50	8	21.6
51-60	0	0
61-70	1	2.7

**Obstructed Hernias**

Of the 50 cases, (33 cases) (66%) were obstructed inguinal hernias. Though femoral hernias are the commonest to get obstructed, we had no cases in our series. The age incidence showed a preponderance to those above 45 yrs. There was a preponderance of male patients. There were 2 sliding hernias which got obstructed there was one case of recurrent inguinal hernia with obstruction. Only 2 cases needed resection of small bowel. In the incisional hernias in all the 4 cases, the previous surgery had been an abdominal hysterectomy. 6 cases had caecostomy 2 cases other surgeries. Anatomical repair was done in all these cases.

**Table 6: Obstructed hernias**

Type	Total No.	Percentage
Inguinal	33	66
Incisional	12	24
Umbilical	5	10
Femoral	0	0

**Intestinal obstructions**

Small bowel obstruction. There were more than 50% incidence of patients between 20 and 40 in our series. The average was 25 years. Pointing to the fact that small bowel obstruction was more a disease of the young. 53.3% were male and 46.6% were females. The commonest case was post operative adhesions forming 40% of the cases studied. This confirmed the general view that adhesions were the commonest cases of intestinal obstruction next common cases were the stricture obstruction forming 20% of cases. No cases were due to worm bolus. Due to the nearer paediatric referral centre.

**Table 7: Small bowel obstruction**

Type	Total No.	Percentage
Adhesions	6	40
Strictures	3	20
Internal herniation	0	0
Band	6	40

**Large bowel obstruction**

Of the 8 cases in our series the average age was 20-30 yrs. This again points to the fact that large bowel obstructions 62.5% cases were male patients. The commonest cases was sigmoid volvulus followed by carcinoma rectum and sigmoid.

**Table 8: Large bowel obstruction**

Causes	Total No.	Percentage
Sigmoid volvulus	4	50
Recto sigmoid carcinoma	1	12.5
Others Adhesive obstruction	3	37.5

**Gynaecological emergencies (Landing in surgical side)**

A total of 2 cases were seen, these included 2 cases of ruptured ectopic pregnancies. A salpingo oophorectomy was done in the case of ectopic pregnancy. All the specimen were sent for HPE.

**Other Cases**

Our series had 4 cases of ruptured amoebic liver abscess, the patients confirmed to the classical picture of the middle age malnourished alcoholic patients 1 case of meckel's diverticulum were found in our entire series. These formed only 0.25% of our case as compared to the western literature of 2%. They were found incidentally and did not present as a complication. In line with the recent trends towards more early GB surgery, no emergency cholecystectomies were done. Patient presented with features of peritonitis. Laparotomy showed a picture of acute pancreatitis, a lavage was done, patient recovered well and was discharged without any complications.

**DISCUSSION**

Abdominal pain of sudden onset is the hallmark of most non-traumatic emergency surgical presentations, Acute abdomen defines as any serious acute intra-abdominal condition (such as appendicitis) attended by pain, tenderness, and muscular rigidity, and for which emergency surgery must be considered [7]. The causes of acute abdomen are several and their relative incidence varies in different populations, Its wide variety in presentation of symptoms and broad spectrum of associated diseases complicates the isolation of the cause of abdominal pain, which may vary from life-threatening diseases requiring emergency surgery to mild Almost similarly with study in Gondar University Hospital, abdominal pain (99.6%), vomiting (95.2%), constipation (59.3%) and abdominal distension (56.8%) were the commonest symptoms in patients with acute abdomen [8]. Acute appendicitis was found to be the leading cause of non-traumatic surgical acute abdomen leading to emergency operation in this study. The majority of the cases with acute appendicitis were from urban and in their 2nd and 3rd decades of life with male to female ratio 3:1 which agree with other studies done in TAH, ZMH, and Sina Hospital [7,9,12] but contrast to study done in Gondar University and Yirgalem Hospitals which showed that intestinal obstruction was the leading cause of acute abdomen. This may be explained by due to diet and socio-economic factors that may or may not differ in different areas [13]. Bowel obstruction was the second most common cause of nontraumatic acute abdomen with 40% of which 75(63.5%) SBO followed by LBO 43 (36.4%) which was similar with study done in TAH. Primary small bowel volvulus accounting 43(57.3%) from SBO was the leading cause. This contradicted with studies done in TAH, Gondar University Hospital which has shown that adhesion was the leading cause of small bowel obstruction. It is explained by that since adhesion is a secondary problem, (occurs in patients who has history of previous

surgery), there may be high operation rate in catchments of TAH and Gondar university. In this study hernia and adhesion were found to be 2nd and 3rd causes of SBO. Out of 75 cases of SBO, 21(28%) were nonviable and managed by resection and anastomosis [14]. This was most seen in patients who presented late, more than 3 days of duration of illness. This is because when the duration of time increases blood perfusion of bowel decreases finally to death of bowel. Similar with TAH, in this study sigmoid volvulus was found to be the leading cause of colonic obstruction (86.0%). In this study most of patients developed peritonitis at time of operation and most of them resulted from gangrenous bowel obstruction (42.5%) followed by perforated appendicitis (20.3%), perforated PUD (12.9%), typhoid perforation (10.1%) and others (10.1%) were primary peritonitis. However contrarily, study on Sina Hospital, showed that 14.4% of patients developed peritonitis, among which 5.7% resulted from PPUD, 3.5% of from perforated appendix. This may be due to late presentation of patients because of different reasons like lack of health awareness, inaccessibility of health institutions where operation is not performed and no trained health staffs who did operations in rural areas [15]. Similar to study in TAH, Peritonitis was highly seen in patient who came late (>52.3% in 2 days) and from rural areas (83.18%) and the reason for late presentation to the institution delivering the surgical treatment needs to be studied further [16]. More than 49(16.1%) surgically treated non traumatic acute abdomen patients had one or more early postoperative complications which was lower than TAH study (28%). This may be due to good service of the NRH after patients arrive at hospital. The three commonest early postoperative complications other than death were wound infection 23 (7.8%), pneumonia 9(3.0%) and sepsis 7(2.3%) which is low when compared with study done in Gondar University Hospital i.e., wound infection (20.6%), sepsis (17.6%) and pneumonia (9.9%) but almost similar study in TAH except sepsis was lower in this study [17]. In this study the mean hospital stay of expired patients was 2.2 days and the mean age of the expired patients was 53.6 years. Almost half of the patients who died were operated for bowel obstruction. All of the patients dying with large bowel obstruction had gangrenous sigmoid volvulus [18-20].

### CONCLUSION

In this study we noticed emergency surgical operation for nontraumatic acute abdomen particularly for acute appendicitis was found to be the most common surgical emergency operations performed. Non traumatic acute abdomen was more common in rural dwellers and male sex. Most of patients experienced post-operative complications were those who came late and related with developing peritonitis. Acute abdomen is a surgical condition with high rate of morbidity and mortality if not managed timely and appropriately. To alleviate this problem Oromia Regional Health Bureau, particularly NRH should create health awareness on acute abdomen to the general population in general and to all level of health care providers in particular has great importance. As most of the complicated cases with delayed presentation are from rural areas where health institutions with operation theatre and well trained health professionals are not well distributed, cases can be timely handled by properly trained emergency surgeons by assigning them with fully equipped operation theatre.

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