Original Article

Spectrum of Diseases in Patients with Non-Traumatic Acute Abdomen

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ABSTRACT

OBJECTIVE: To identify the spectrum of diseases leading to acute abdomen in local population, presenting in a surgical unit.
DESIGN: Retrospective study.
SETTING: Department of Surgery Unit-II Chandka Medical College Teaching Hospital Larkana.
DURATION: A period of three years, from July 2004 to June 2007.
PATIENTS AND METHODS: All patients presenting with non-traumatic acute abdominal pain were included in the study. Patients presenting with gynecological and urological causes were excluded. Their presentation, diagnosis and management were recorded from their case files and OT registers.
RESULTS: During the period under review, a total of 586 patients presented with non-traumatic acute abdomen; of which there were 412 (70.30%) males and 174 (29.69%) females, with a male to female ratio of 2.3:1. The highest incidence of acute abdomen 163 (27.81%) was found in patients of 21-30 years age group, followed by under 20 age group 150 (25.59%) and 30-40 years age group 101 (17.23%). The most common cause of acute abdomen was acute appendicitis accounting for 205 (35%) admissions. These patients were mostly young males in teens and twenties. Intestinal obstruction was second leading cause accounting for 167 (28.5%) cases and this affected more commonly the middle aged persons. Five hundred and twelve (87.37%) patients were treated successfully and discharged home while 3% left against medical advice. Mortality was 9.55% and it was highest in patients presenting with perforation peritonitis.
CONCLUSION: The most common cause of acute abdomen in this study was acute appendicitis affecting young population. This was followed by intestinal obstruction and gut perforation. Acute cholecystitis commonly affects the middle aged, post-menopausal women. Pancreatitis is a rare cause of acute abdomen in this area.

KEY WORDS: Acute abdomen. Non-traumatic. Acute appendicectomy. Intestinal obstruction.

INTRODUCTION

Acute abdomen is a term used to encompass a spectrum of surgical, medical and gynecological conditions ranging from trivial to life threatening conditions, which require hospital admission, investigations and treatment.[1] This is the most common physical complaint accounting for 5-10% of all emergency department visits [2] and is leading cause of hospital admissions in US.[3] Acute abdomen has a sudden onset, can persist for several hours to days and is associated with wide variety of clinical features specific to underlying condition or disease. The list of possible causes of acute abdomen is long ranging from aortic dissection to psychogenic pain and including almost anything in between. The presenting signs and symptoms of two patients with same underlying pathology may look totally different or they may be similar even though the disease entities are distinct. Challenging as it is, it requires careful history taking and thorough evaluation of symptoms, head to toe physical examination and judicious use of laboratory investigations which can simplify the evaluation of this disease entity.[2] But despite its frequent occurrence, it is difficult to manage because no matter how thorough the work up is, specific diagnosis is not possible in 30% cases.[4] The aim of this study was to identify the spectrum of disease causing non-traumatic surgical acute abdomen in local population.

PATIENTS AND METHODS

This retrospective study was carried out at the department of Surgery Unit II Chandka Medical College Teaching Hospital Larkana, during July 2004 to June 2007. All patients presenting with non-traumatic acute abdominal pain were included in the study. Patients presenting with gynecological and urological causes were excluded. All cases were studied in terms of pa-

tient's particulars, clinical presentation, radiological and other investigations performed, modalities of treatment, operative findings, postoperative course, morbidity and mortality. Patient case files and operation theatre record provided all useful information. All patients following a clinical diagnosis of acute abdomen were initially adequately resuscitated and investigated. A plain abdominal radiograph was first and foremost investigation performed. Ultrasound and laboratory investigations further aided to evaluation and management. The decision whether the patient requires emergency or elective surgical procedure was based on clinical presentation and diagnosis. The patients presenting with perforation peritonitis underwent explorative laparotomy under emergency setting while patients with appendicular mass, acute cholecystitis, pancreatitis and hepatic abscess were managed conservatively initially and operated subsequently when indicated.

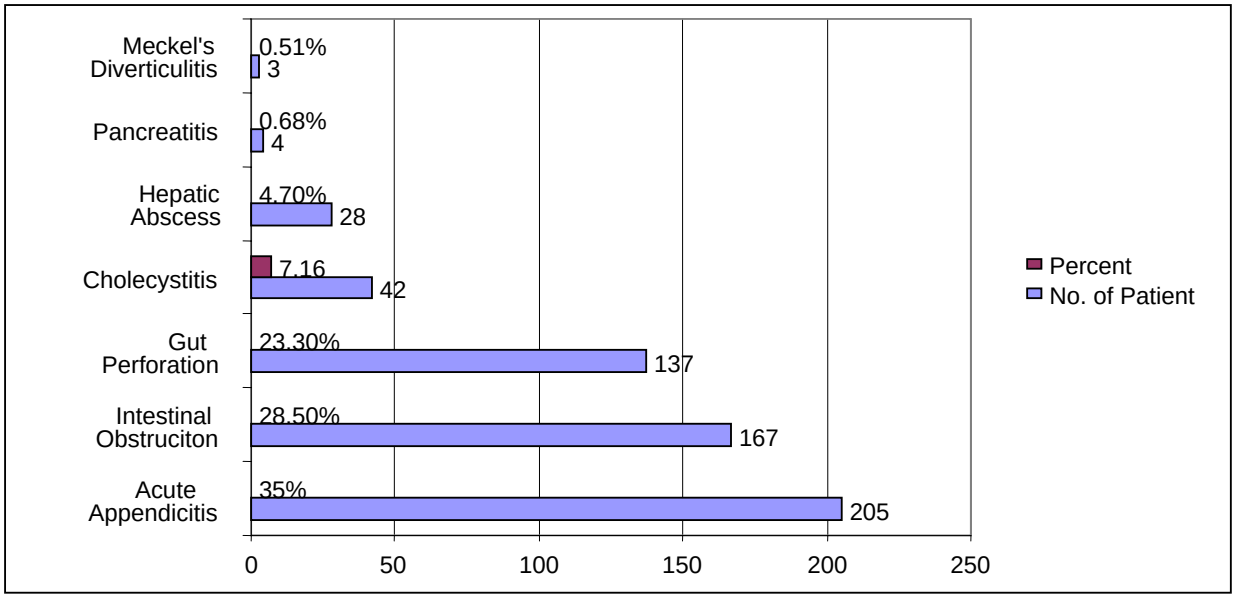
RESULTS

Out of 586 patients, 412 (70.30%) were males and 172 (29.69%) females with a male to female ratio of 2.3:1. Highest incidence of acute abdomen i.e. 163 (27.81%), was found in patients of 21-30 years age group, followed by under 20 age group i.e. 150 (25.59%) and 30-39 age group 101 (17.23%). There were 88 (15.01%) cases in forties and 58 (9.89%) cases in fifties. The age and sex distribution is shown in **Table I**. The youngest patient was 13 years of age presenting with acute appendicitis and eldest was 87 female presenting with intestinal obstruction. Acute appendicitis was the most common cause of acute abdomen, accounting 205 (35%) admissions. These patients presented with migratory pain in right iliac fossa and were diagnosed as the case of acute appendicitis on Alvarado's score and confirmed on ultrasonography. Forty-four patients were diagnosed with appendicular mass and were managed conservatively. One hundred and sixty-one patients underwent emergency appendectomy. One-hundred and three patients had simple inflamed/friable appendix, 49 patients had perforated appendix, 6 had appendicular abscess and 3 had gangrenous appendix. Intestinal obstruction was second leading cause of acute abdomen. It affected mostly males above 40 years of age. One hundred and sixty-seven patients were diagnosed with intestinal obstruction and included, acute, sub-acute and chronic obstruction. Most common cause was intestinal bands and adhesions, followed by tuberculous strictures. Six patients had carcinoma of colon, and only two had carcinoma of rectum. One hundred thirty-seven (23.33%) patients presented with gut perforation. Eighty-six patients had peptic ulcer perforation, 66 in antrum of stomach, 2 in body, 2 in pylorus and 6 in duodenal bulb. Ten patients were managed conservatively and remainder underwent repair and omentopexy. Sixteen patients had perforation in jejunum and 35 had ileal perforations, of which 18 occurred as complication of typhoid fever, 6 followed longstanding obstructions and remaining were rendered non-specific as no cause could be identified for the inflammatory process. Forty-two (7.15%) presented with acute cholecystitis and were managed conservatively initially and majority underwent laparoscopic cholecystectomy as elective procedure later on. Twenty-eight (4.77%) patients were diagnosed with hepatic abscess; 4 had burst at the time of presentation. Eleven patients with hepatic abscess were managed conservatively, while 7 were drained under ultrasound guidance and 11 on laparotomy. There were only 4 cases of pancreatitis, while only 3 patients were diagnosed with Meckel's diverticuliltis on laparotomy. The causes and their percentages are shown in **Chart I**. Five hundred and twelve (87.37 %) were treated successfully and discharged home, 18 (3.07%) left against medical advice, while 56 expired giving a mortality of 9.59%. Mortality was found to be highest in patients with gut perforation i.e. 32 patients, followed by intestinal obstruction in 21 patients, while 3 patients had burst hepatic abscess leading to peritonitis as cause of death.

TABLE I:
AGE AND SEX DISTRIBUTION IN PATIENTS PRESENTING WITH ACUTE ABDOMEN

Age Ranges	Male	Female	Total	Percentage
< 21	113	37	150	25.59 %
21-30	121	42	163	27.81 %
31-40	59	42	101	17.23 %
41-50	53	35	88	15.01 %
51-60	46	12	58	9.89 %
61-70	12	03	15	2.55 %
> 70	08	03	11	1.87 %
Total	**412**	**174**	**586**	**100%**

CHART I:
SPECTRUM OF DISEASE IN ACUTE ABDOMEN (NON-TRAUMATIC)



DISCUSSION

Acute abdominal pain constitutes a significant percentage of emergency admissions worldwide and comprises the largest group (non-traumatic) of people presenting as general surgical emergency [5]. The term encompasses within it a long list of differential diagnoses and poses a greatest challenge to clinicians[6]. Pattern of disease vary according to age, sex, geography, social class, genetic and environmental factors. Very few local studies are available on the topic of spectrum of disease in patients presenting with acute abdomen. This study attempts to highlight the causes of non-traumatic acute abdomen in local population. In this study, the highest incidence of acute abdomen was found in patients of age group twenties, followed by teens, which is in contrast to studies conducted in west where the incidence was found to be highest in 45-60 years age groups. [7] Male predominance noticed in this study is similar to the studies conducted locally and in west. Appendicitis was the most common cause of acute abdomen in this study, consistent with other studies carried in England and locally,[8-10] which also stated it to be more common between ages 10 and 20 years, as in this study but no age is exempted. Most patients in our study presented with migratory pain in RIF, with pyrexia and rebound tenderness in RIF on examination, but none of these are specific for appendicitis. Similar to a meta-analysis of signs and symptoms associated with acute appendicitis, which was unable to identify any one diagnostic finding but showed that migration of pain was associated with diagnosis of appendicitis.[11]

Intestinal obstruction was found to be the second most common cause of acute abdomen in our study. It was more common in patients above 40 years of age and predominantly in males. Perforation peritonitis was another common cause. Perforation of bowel is a serious complication and remains a significant surgical problem in developing nations and is associated with high morbidity and mortality.[10] In our study, 86 patients had peptic ulcer perforation, seventy in stomach and six in duodenum; it was more common in elderly in 4th and 5th decade of life, predominantly in males. This is consistent with previous studies [7,12]. Ten patients were managed conservatively, 76 underwent laparatomy and omentopexy was the common procedure performed as in any other setting. Thirty-four (24%) patients had perforation in ileum, 14 (10.2%) had jejunal and 3 (2.1%) had colonic perforations. The most common cause of illeal perforation was typhoid accounting for 67% of total ileal perforation. This is consistent with a local study which stated the typhoid as cause for 62% of total ileal perforations [13]. Non-specific perforation was found to be the second leading cause. In these cases, operative findings were similar to that of typhoid fever but no laboratory investigations supported typhoid. Only three patients had tuberculous perforations. These causes are extremely rare in west, where Crohn's disease, foreign bodies, perforated diverticulae and radiation enteritis are usual causes [13]. Simple debridement and closure of perforation followed by ileostomy were most commonly employed procedure. Seventy-four (12.6%) patients reported hepatobilliary diseases; forty-two (7.15%) cases of these had cholecystitis, of which

only three were males and thirty nine females. But unlike mentioned in textbooks it was found in women above 50, and laparoscopic cholecystectomy was the procedure of choice. Twenty-eight (4.77%) patients were diagnosed with hepatic abscess, only four with pancreatitis and three with Meckel's diverticulitis. Mortality was found to be 9.55 % in our study.

CONCLUSIONS

1. The most common cause of acute abdomen in this study was acute appendicitis affecting young population.
2. The second common cause was intestinal obstruction affecting middle aged and elderly, followed by gut perforation particularly peptic ulcer perforation.
3. Acute cholecystitis commonly affects the middle aged, post-menopausal women.
4. Pancreatitis is a rare cause of acute abdomen in this area.

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