

Original Article

Presentation and Outcome of Acute Abdomen in a Tertiary Care Unit

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Objective: To evaluate the outcome of patients with acute abdomen presenting in a tertiary care unit.

Study Design: Descriptive Case series.

Place and Duration of Study: From July 01,2010 to 31st December 2010, Surgical Unit III, Pakistan Institute of Medical Sciences, Islamabad.

Materials and Methods: All adult patients of either gender admitted for acute abdomen were included in the study. Their demographics like age, sex, clinical presentation, diagnosis, management, complications and follow up were recorded on detailed proforma.

Results: Out of 127 patients, 64 had acute appendicitis and 17 had acute pancreatitis, while other causes included perforated duodenal ulcer (n=13), acute intestinal obstruction (n=11), acute cholecystitis (n=9), abdominal tuberculosis (n=8), enteric perforations, diaphragmatic hernia, obstructive jaundice, psoas abscess, strangulated umbilical hernia, carcinoma of rectum (with intestinal obstruction) and pelvic abscess. All cases were managed conservatively or surgically according to the set protocol. Wound infection was the most common complication (n=10%) followed by chest infection (n=7%). Mortality rate was 10%.

Conclusion: Acute appendicitis is the most common condition in patients presenting with acute abdomen. Lack of health education, improper health services and late presentations are common factors for increased morbidity. Sepsis is the major cause of morbidity and mortality in acute abdomen.

Key words: Acute abdomen, Abdominal pain, Appendicitis.

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Introduction

Acute abdomen is a common condition encountered in emergency surgical practice.^{1,2} A careful and methodical approach is needed in order to reach a correct diagnosis. The causes of acute abdominal pain have a wide spectrum and a detailed history, thorough clinical examination and organized investigations will lead to correct management.

The clinical course that may develop over a variable time period is a result of a wide range of intra and extra abdominal pathologies.³ Pain is the predominant symptom of the acute abdomen and the knowledge of anatomy and pathophysiology is important in assessment. The common causes of acute abdominal pain necessitating admission to a surgical ward include acute appendicitis⁴ and nonspecific abdominal pain,⁵ while other serious pathologies may be a reflection of

infection, mechanical obstruction, biliary disease, malignancy, cardiac problems, and GI ischemia.^{1,6} The symptom complex of acute abdomen commonly results from luminal obstruction, inflammation and peritonitis. Recently, abdominal tuberculosis is becoming a major surgical emergency in our set up.⁷

Assessment of such patients and decision making for their management is crucial, since some of them will have life threatening conditions that require immediate surgery which improves outcome; others may need a trial of conservative management that may require intervention if the condition fails to settle. A detailed history, full clinical examination and carefully selected investigations will lead to correct diagnosis and management.¹

As it provides an immediate feedback on accuracy and adequacy of the preoperative assessment and decision making, a patient with an acute abdomen

is an important part of surgical training.⁸

We evaluated in detail the presentation and outcome of cases with acute abdomen presenting to our unit.

Materials and Methods

This descriptive study includes all adult cases that were managed as acute abdomen in the Surgical Unit III at the Pakistan Institute of Medical Sciences Islamabad, over a period of six months (From July 1st to December 2010). All these patients were admitted through emergency with the diagnosis of acute abdomen. Investigations varied according to individual patient's condition, and consisted of full blood count, urine analysis, urea, creatinine, electrolytes, blood sugar, x-rays of chest and abdomen (erect and supine) and ultrasonography. Other investigations were performed where indicated. A provisional diagnosis and treatment plan was charted and patients were managed accordingly.

Parameters noted were detailed history, clinical findings, investigations, type of management, and outcome. The patients were followed in out patients department for one month for any complications such as wound infection, recurrence of the condition, and further treatment if required.

Results were reported as percentages for categorical variables. The variables were compared using the Chi-square test. P values of 0.05 or less were considered statistically significant. All the statistical analyses were performed using the SPSS version 16.

Results

A total of 127 cases were included in the study. Seventy nine patients were males and 48 females; male to female ratio being 1:1.8. Majority of the patients were in third and fourth decade of age and the mean age was 33 years (range 13 to 80 years). (**Figure I**)

The commonest site of onset of pain was epigastrium in 57 (45%) cases followed by right ileac fossa in 25 (20%). The other sites were paraumbilical (13%), diffuse (11%), right hypochondrium (10%) and lower abdomen (1%). The pain radiation was found in 33 cases; to the back in 19 cases and to lumbar region in 10 patients. Other sites were paraumbilical in 3 cases, and loin in one case. Three patients experienced generalized pain.

The pain was aggravated by movement (43%), food (23%), or cough (16%). It improved with lying still in 56 (44%) patients, by analgesics in 5 (4%), and by vomiting in other 4 (3%). The pain became worse with time in 81% of cases while there was no change in 19%

of cases. There were 102 patients (80%) who had severe pain, 24 (19%) had moderate pain while one patient had mild pain. It was steady and constant in 71 (56%) cases, sharp in 27 (21%), colicky in 18 (14%), and intermittent in 11 (9%) cases.

Anorexia was present in 126 (99%) patients, nausea in 124 (98%), and vomiting in 108 (85%). Fifty one (40%) patients were constipated, three (2%) had loose motions while rest had normal bowel movement. Thirteen (10%) patients had urinary symptoms in the form of burning micturation, dysuria, frequency or urgency. Ten (8%) cases had history of weight loss. Abdominal distention was present in 41 (32%) cases. Bowel sounds were absent in 9 (7%) cases, decreased in 39 (31%) cases, and aggravated in 5 (4%) cases. Seventy five (59%) patients looked anxious, 13 (10%) had distress while rest had normal appearance. Pallor was observed in 52 (41%) cases, 3 (2%) had flushed face while 3 (2%) were jaundiced.

Thirty seven (29%) cases had previous history of similar pain, while five (5%) had history of previous abdominal surgery.

Acute appendicitis was the most common disease (n=64, 50%) followed by acute pancreatitis (n=17, 13%). (**Table-I**)

Table I: Causes of Acute Abdomen (n = 127)

Diagnosis	No. of cases	Percentage
Appendicitis	64	51%
Acute appendicitis	53	
Appendicular Mass	08	
Appendicular Abscess	03	
Hepatobiliary	27	21%
Acute cholecystitis	09	
Acute Pancreatitis	17	
Obstructive Jaundice	01	
Peritonitis	19	15%
Perforated Duodenal Ulcer	13	
Enteric Perforation	06	
Abdominal Tuberculosis	08	6%
Ascitic	01	
Intestinal Obstruction	05	
Perforation	02	
Miscellaneous	09	7%
Diaphragmatic Hernia	01	
Obstructed/Strangulated	03	
Hernia	01	
Meckel's diverticulum	02	
Carcinoma Colon	01	
Psoas abscess	01	
Pelvic abscess		

One hundred and four (82%) cases were managed surgically, while 23 (18%) were managed conservatively.

All the patients were later followed in the out patient clinic. Eight (6%) cases had recurrence of symptoms; 4 (3%) of them had sub acute intestinal obstruction due to abdominal tuberculosis while 3 (2%) had acute pancreatitis (that developed pseudocyst requiring cystogastrostomy), and one case that had pelvic abscess later presented with an abscess in the thigh that it required drainage.

Wound infection was the most common complication, and was seen in 13 (10%) cases, followed by chest infection in 9 (7%), anastomotic leak, pseudocyst formation and DVT one each (%)(**Figure I**)

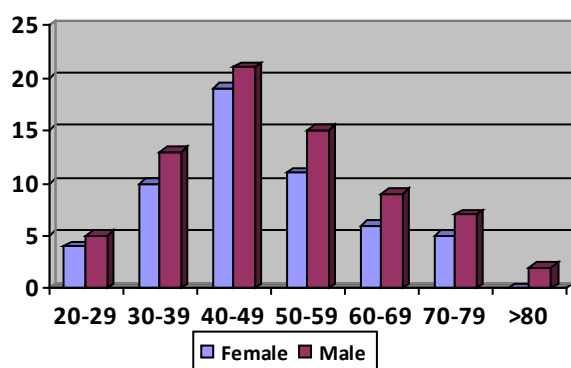


Figure I: Age Distribution of the patient (n=127)

Thirteen patients (10%) died in this study. Four cases had severe necrotizing pancreatitis and died of multi organ failure and sepsis. Three cases had abdominal tuberculosis. One of them had presented with intestinal obstruction and underwent exploratory laparotomy and strictureplasty. He developed anastomotic leakage and was re-explored, and a loop of ileum was exteriorized. He was discharged home, and was readmitted with enterocutaneous fistula leading to gross sepsis and fluid and electrolyte imbalance that he could not survive. The other patient collapsed suddenly and expired; she was suspected to have acute myocardial infarction. Two patients died of respiratory failure due to chest infection and sepsis; they had perforated duodenal ulcer and had presented late in their illness. One patient had advanced malignancy and died of sepsis. Another patient developed multiple liver abscesses after ERCP for obstructive jaundice. She died of respiratory failure. Last patient died of renal failure.

Discussion

Acute abdomen is a common presentation in emergency department, because serious and benign intra-abdominal conditions share many relatively nonspecific symptoms, it is often difficult to identify patients who have life-threatening problems early in the course of their disease. Apart from relieving the patient's symptoms, the emergency surgeon's primary role is to detect and stabilize life-threatening conditions in a rapid and cost-effective manner.

The most common condition encountered by emergency surgeon is acute appendicitis.^{5,9} The only way to reduce morbidity and prevent serious complications is to perform appendectomy before perforation or gangrene occurs.^{8,10} In the present study, half of all the patients with acute abdomen had appendicitis. Acute pancreatitis was next common diagnosis that was seen in 17 patients; 13 of them had gall stones which is the most common associated risk factor for this condition, as found in current study and also reported by others.^{11,12} All cases with gall stone disease later underwent cholecystectomy to prevent the recurrence of attack, as recommended in literature.¹³ Duodenal ulcer perforation was seen in 10% cases, comparable to Espinoza that has reported an incidence around 9%.¹⁴ All these cases had free gas under the diaphragm, a finding that was diagnostic. This was striking as in literature about 30% of patients with perforated DU have been reported to show no free gas in upright abdominal or chest x-rays.¹⁵ These patients were followed on conventional anti-ulcer treatment after surgery. Some workers have recommended non operative management of perforated duodenal ulcer by keeping the patient nil by mouth, and on nasogastric aspiration, parenteral fluids and antibiotics. However, this can only be safe and effective in selected cases, as reported by Rehman.¹⁶ We did not favour this approach as majority of the cases presents late, and by that time frank peritonitis was already established.

Nine cases had acute cholecystitis; six of them underwent early cholecystectomy. It has been reported to be a safe procedure associated with less hospital stay and comparatively decreased cost of treatment.¹⁷ Even laparoscopic cholecystectomy can be accomplished with minimal morbidity in acute cholecystitis.^{18,19}

Typhoid fever is a public health problem in the developing areas of the world with poor hygienic conditions.²⁰ Poorly treated patients may develop enteric perforation, usually during 2nd or 3rd week that is associated with high morbidity and mortality.²¹ The disease shows a seasonal rise during summer. We encountered six cases as the current study spanned over humid rainy season. They were diagnosed on the

basis of typical history, clinical findings and histopathology.

Acute intestinal obstruction was seen in eleven cases that were caused by intestinal tuberculosis in 8 cases, and obstructed / strangulated hernia in two cases, and band with Meckel's diverticulum & obstructed carcinoma colon (one case each). Almost similar figures are reported by Chaudhry et al.⁶ Other presentations of abdominal tuberculosis included intestinal perforation in two cases and ascites in one case. Tuberculosis is a big health problem in impoverished areas of the world.²² In developed countries a recent surge in tuberculosis has been observed that is attributed to drug resistance, large scale immigrations from developing countries with growth of economic underclass, acquired immunodeficiency syndrome (AIDS) and immunosuppressive therapy.²³ Pakistan is one of the five nations that account for more than 50% of tuberculous cases world wide.²⁴ The common presentations include intestinal obstruction, perforation and ileocecal mass. Surgical intervention is usually indicated for development of complications like mechanical obstruction and perforation, and most common site of lesion is terminal ileum and ileocaecal region.²⁵ These findings are verified by the present study as well.

We had one case of diaphragmatic hernia that was acquired after stab wound in the chest two years ago. He had presented with large bowel obstruction due to herniation of transverse colon. Traumatic diaphragmatic hernia is an often-missed entity that needs high index of suspicion for diagnosis. This is more common with blunt injuries of abdomen, and usually affect left dome of diaphragm as right side is protected by the liver.²⁶

One case presented with strangulated umbilical hernia (containing loop of ileum). He was a known case of chronic liver disease due to hepatitis C, and also had tense ascites. Raised abdominal pressure is one of the factors for progression and complication of hernias.²⁷

One patient had history of obstructive jaundice due to bile duct stones that was managed elsewhere by ERCP and sphincterotomy. She later presented to us with abdominal distension, and was found to have multiple small liver abscesses, gross ascites and pleural effusion. She died of multi organ failure and sepsis.

The major factors causing morbidity in our patients were related to wound complications, chest infection, and sepsis. Acute abdomen may be a presentation of some serious underlying pathology that may be associated with higher mortality. Thirteen of our cases died (10%), a figure comparable to that reported by Wilkins (13%).²⁸ The main cause of death was sepsis. Most of the cases that ended up with complications were middle aged or elderly, and had presented late in their illness. The reasons for late

presentation included lack of public awareness and late referrals from peripheral health care facilities.

Conclusion

Acute appendicitis is the most common condition encountered in patients presenting with acute abdomen. Most patients having acute abdomen are relatively young in the 3rd and 4th decades of life. Lack of health education, improper health care facilities and late presentations are common factors for increased morbidity. Sepsis is the major cause of morbidity and mortality in acute abdomen.

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