

Intestinal Obstruction Changing Etiological Trends

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Abstract

Background: To describe clinical presentation, etiology, and management of patients presenting with intestinal obstruction.

Method: From 6th September 2004 to 6 September 2005, 50 patients with provisional diagnosis of intestinal obstruction were admitted from emergency room of Rawalpindi General Hospital. All patients were initially assessed after resuscitation in emergency room. The decision, to operate or manage conservatively, was taken by a consultant. The clinical diagnosis was matched with per-operative findings and histopathology reports.

Results: Of the total 50 patients, 42 were males and 8 were female. The age distribution varied from 15 years to 70 years. Mean age was 41.7 ± 13.6 . Commonest symptom with which the patients presented was generalized abdominal pain. Most common sign was tachycardia, present in 49 patients. Most common etiology leading to intestinal obstruction was obstructed inguinal hernia in 22 followed by post operative adhesions in 12 patients.

Conclusion: Obstructed inguinal hernia is the most common etiology of intestinal obstruction. Early diagnosis and surgical intervention is required to decrease gut ischemia leading to increased morbidity in patients

Key words: Obstruction, Inguinal hernia, Adhesions

patients having a previous laparotomy is the formation of adhesions¹. Small bowel obstruction is a major cause of morbidity and financial expenditure around the world². Common causes of intestinal obstruction are obstructed hernias, post operative or tuberculous adhesions, tumors, foreign bodies, inflammatory bowel disease, fecal impaction and volvulus³. Tuberculosis in various forms remains a very important cause of morbidity and mortality in developing countries⁴. Intestinal tuberculosis is one of the major causes of stricture formation in small intestine. Abdominal wall hernias are common in developing countries and are one of the major causes of intestinal obstruction in this region. In western countries where abdominal operations are common, the most frequent etiological factor is postoperative adhesions. These patients have a greater recurrence rate than those with other etiologies^{2, 5, 6}. In small bowel obstruction incarcerated abdominal hernia is still a major cause of obstruction which can be diagnosed clinically⁷.

The purpose of this study was to determine the clinical presentation, etiology and specific management, of patients with intestinal obstruction

Introduction

Complete arrest or serious impairment of passage of intestinal content is termed as intestinal obstruction. From the surgical point of view abdominal pain, vomiting, distension and constipation are the cardinal symptoms of acute intestinal obstruction.

The term intestinal obstruction has generally carried the connotation of a surgically treatable intra abdominal process; however, many processes of a non-surgical nature both inside and outside the abdomen can result in acute abdominal symptoms of obstruction. The syndrome of intestinal obstruction generates a large number of hospital visits and may affect the very young, the very old, either sex and all socioeconomic groups.

The cause of the small intestine obstruction in

Patients and Methods

All patients aged 15 or above, presenting with signs and symptoms of intestinal obstruction in Emergency Room or OPD of Surgical unit (I) of Rawalpindi General Hospital over a one year period were included. Exclusion criteria comprised patients treated conservatively who were relieved and patients presenting with intestinal obstruction due to obstructed inguinal hernia, which reduced spontaneously.

Patients were admitted in emergency. Complete history was taken especially eliciting cardinal features of intestinal obstruction, abdominal distension, pain, vomiting, and absolute constipation along with history of previous surgery. Signs of dehydration, hemodynamic stability, abdominal hernial orifices, palpable masses; scars of previous operations and bowel sounds were looked for.

Investigations performed included routine investigations of blood and urine, serum electrolytes and erect x-rays of abdomen to assess the level of obstruction from air fluid levels. Where required, ultrasound was also performed. If the patient was not haemodynamically stable, immediate resuscitation was carried out. A nasogastric tube was passed to decompress the intestines. Continuous monitoring of the patient was done to assess nasogastric output abdominal distension (improving or otherwise), bowel sounds (audible or otherwise) and hemodynamic stability. Where obstructive features persisted or worsened, immediate operation was done. Third generation cephalosporins with metronidazole were given to all cases who underwent operation.

Obstructed/strangulated hernias were approached through inguinoscrotal incision. Other cases of intestinal obstruction were approached through mid line laparotomy incision.

Adhesions were treated by adhenolysis avoiding iatrogenic injuries. Where adhenolysis was difficult the segment was mobilized and then exteriorized to decompress proximal segment. Otherwise simply passing a Foley's catheter (Tube Enterostomy) and treating underlying pathology like tuberculosis confirmed by histopathology of mesenteric lymph nodes was enough. Strictures were treated by stricturoplasty unless multiple strictures were present in short segment of gut. Then resection and end to end anastomosis was done in patients who were haemodynamically stable. Otherwise simple resection with exteriorization was carried out. Sigmoid volvulus was treated by resection and exteriorizing of both segments. All information regarding etiology of intestinal obstruction and operative management was recorded.

Data was stored in SPSS version 14 and analyzed. Descriptive statistics like frequency and proportions were used for qualitative data. As it was a descriptive study and no comparisons done, a test of significance was not applied.

Results

Of the 50 patients requiring operative management. 42 were male and only 8 were female, with a male to female ratio of 5:1. The age ranged from 15 years to 70 years. Mean age was 41.70 ± 13.6 (Fig 1).

Commonest symptom at presentation was pain which was present in all patients. Other symptoms included absolute constipation in 98%

abdominal distention in 96% and vomiting in 82% (Table 1). Signs that were present in patients are shown in Fig: 2. The most common was tachycardia present in 98% of patients, followed by tenderness in 90%.

Table I: Common Symptoms

Symptoms	No. Of patients	% age
Pain	50	100
Vomiting	41	82
Abdominal distention	48	96
Absolute constipation	49	98

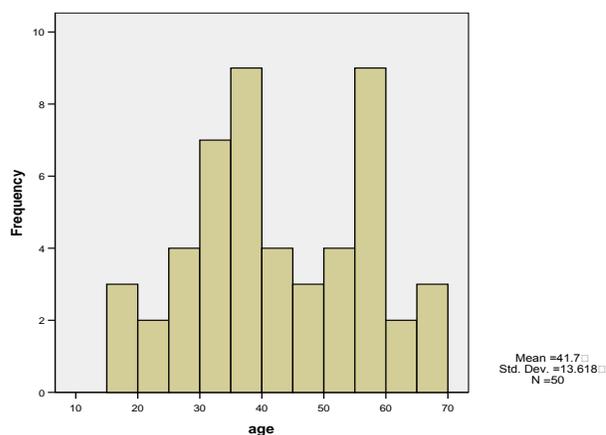


Fig.1: Age distribution

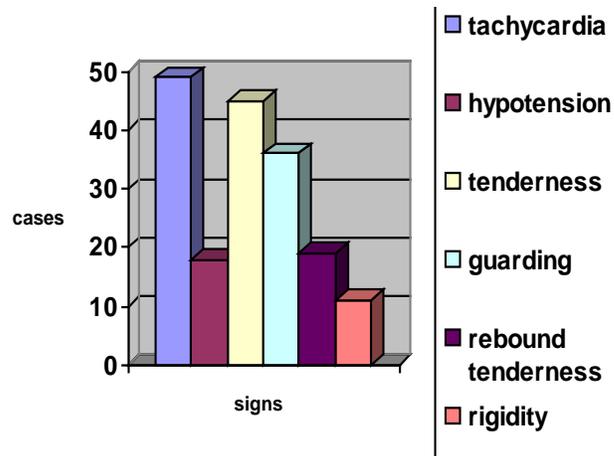


Fig.2 Common Signs

Based on clinical examination, investigations and operative findings, the most common cause of intestinal obstruction was obstructed inguinal hernia followed by post operative adhesions (Fig.3).

Mortality rate in our study was 6%. Out of these three cases, 2 were of carcinoma colon presenting late with intestinal obstruction. The third patient had intestinal tuberculosis and presented with dense adhesions and fistula formation in postoperative period.

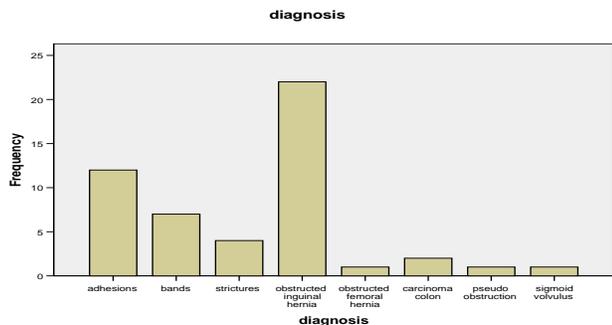


Fig 3: Causes of Intestinal Obstruction (n=50).

Discussion

Intestinal obstruction is a common surgical emergency, which should be diagnosed urgently and promptly treated.⁸ It is sometimes difficult to manage even in experienced hands. It has a number of underlying causes ranging from external hernias to adhesions.⁹ Our male to female ratio was 5:1 whereas Muyembe et al reported a 2.8:1 ratio and Adesunkanmi et al as 1.7:1.^{10,11} In local literature the incidence is nearly same as ours with a male to female ration of 4 : 1¹², showing that in our set up there is higher incidence of intestinal obstruction among males. Reasons may be social taboos and B.P.H in later age groups.

In our study 22 patients belonged to 20 to 40-year age group followed by 18 patients in above 50-year age group. Adesunkanmi et al.¹¹ noted a similar pattern of age distribution. Second rise in incidence was related to direct inguinal hernia secondary to benign prostatic hypertrophy and chronic obstructive pulmonary disease.

Commonest symptom in our study was pain followed by absolute constipation, with abdominal distention and vomiting being the last symptoms to appear. Tachycardia and abdominal tenderness were the common signs. Similar findings were reported by a study done in Kenya.^{10,13}

Our commonest cause of intestinal obstruction was obstructed inguinal hernia (44 %), followed by adhesions (24 %). This pattern is typical of developing countries because of social taboos and lack of awareness in attending clinics for a painless swelling in the groin region. Similar incidence of 45.7% was quoted by Shittu et al. and Ti et al.^{14,15} In contrast to our findings, two studies done in Saudi Arabia revealed that adhesions after previous operations constituted the commonest cause of intestinal obstruction

Hernias still account for a large percentage amongst cases presenting with obstruction.^{16,17} However the local studies show tuberculosis as a most common cause of intestinal obstruction^{18,19}.

Regarding management of intestinal obstruction some surgeons recommend operative treatment on the basis of plain abdominal films in the setting of complete obstruction where as other suggest that operative treatment may be delayed up to 5 days after admission to the hospital on the basis of clinical and radiographic findings²⁰. Barium of upper G.I.T series has been recommended in patients with suspected small bowel obstruction that fail to improve with in 48 hours of admission and have accurately demonstrated the need for surgical intervention in 100 % of patients²¹. Abdominal ultrasonography has been evaluated in diagnosis of intestinal obstruction with a sensitivity of 88 % and specificity of 96 %²²

In the management of obstructed hernia early operative treatment is recommended as delay can lead to strangulation. The exact incidence of occurrence of strangulated inguinal hernia is difficult to establish. Attar et al reported an incidence of 9.6%.²³ Western studies variously describe an incidence of 4-5%^{24, 25} and 2.8%²⁶. Our study did not attempt to look for this incidence. Strangulation of inguinal hernia may occur throughout life. Andrews reported a sharp rise in incidence of strangulation after 60 years of age which peaked at 70-76 years²⁷.

Management options for SBO due to causes, other than obstructed hernia, should be evaluated as complete or partial. Early surgery has been treatment of choice for patients in whom complete obstruction is the diagnosis. In study by Sosa et al. on complete SBO 18 % were operated early. Of the patients left to the trial of non operative treatment, 65 % successfully had resolution²⁸. Peetz et al found a resolution rate of 25 % with complete obstruction²⁹. So even patients with complete obstruction do have fair chances of settling on conservative treatment. However patients operated late for SBO rate of gut strangulation, complications and death is high.

In conclusion, the most common cause of intestinal obstruction in developing countries is obstructed inguinal hernia. Late presentation and older age require early surgical intervention to decrease chance of strangulation leading to high post operative morbidity. Our concept that tuberculosis is the leading cause of intestinal obstruction should now change.

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