

ANALYSIS OF DIFFERENT CAUSES OF MECHANICAL INTESTINAL OBSTRUCTION

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ABSTRACT

Objective: To find out the frequency of different causes of Mechanical Intestinal Obstruction, presenting at CMH Rawalpindi.

Study Design: None random convenient sampling

Place and Duration of Study: The study was done in CMH Rawalpindi from July 2003 to Dec 2003.

Patients and Method: Hundred Patients fulfilling the inclusion criteria were included in the study. Most of the patients were soldiers and their families. Data was collected on the patient proforma.

Results: A total of 100 patients were treated for mechanical bowel obstruction during the study period (83 male and 17 female). Seventy-nine (79%) patients had obstruction of the small intestine and twenty-one (21%) had obstruction of the large intestine

Adhesions and External hernia accounted for almost more than half the causes of mechanical intestinal obstruction in our patients. The adhesions represent leading cause of intestinal obstruction. There were 38 cases of intestinal obstruction due to adhesions in all these cases the plain abdominal x-rays revealed the typical features of small bowel obstruction with air fluid levels and dilated loops of bowel. In 35 of these patients there was a history of previous abdominal surgery including 9 females and 26 males. The initial treatment was conservative by keeping the patients nil orally, nasogastric decompression and intravenous fluids.

Conclusion: Intestinal obstruction is one of the common clinical conditions in Pakistan. Mechanical intestinal obstruction due limited to adhesions, is the most common cause, followed by strangulated/obstructed external hernia, malignancy and tuberculosis.

Keywords: Etiology, Mechanical intestinal obstruction

INTRODUCTION

Acute mechanical bowel obstruction is a common surgical emergency and a frequently encountered problem in abdominal surgery [1, 2]. It constitutes a major cause of morbidity and financial expenditure in hospitals around the world [3]. Intestinal obstruction belongs to severe conditions requiring a quick diagnosis as well as immediate, rational and effective therapy [4]. Accurate early recognition of intestinal strangulation in patients with mechanical bowel obstruction is important to decide on emergency surgery or to allow safe non-operative management of carefully selected patients. Although close and careful clinical evaluation in conjunction with laboratory and radiological studies, is essential for decision of proper management

of patients with acute mechanical intestinal obstruction [1].

Mechanical bowel obstruction is an old and common surgical emergency [1, 2]. Immediate and corrective diagnosis of this condition and etiology is essential and appropriate treatment is of utmost importance [4]. The clinical picture, however, of these patients along with etiology of obstruction and strangulation prevalence or variable, while appropriate management remains controversial [5, 6]. We, therefore conducted this study to identify and analyze different causes of mechanical intestinal obstruction in our department, etiology of presentation as well as management of these patients.

PATIENTS AND METHODS

The study was carried out in the Surgical Department of Combined Military Hospital Rawalpindi; 100 Patients fulfilling the

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inclusion criteria were included in the study. Most of the patients were soldiers and their families. Data was collected on the patient Proforma.

Setting: Hospitalized patients in surgical department C.M.H Rawalpindi.

Duration: July 2003 to Dec 2003.

Sample Size: First hundred cases in Emergency department C.M.H Rawalpindi.

Sampling Technique: Non - random convenient sampling.

Inclusion Criteria: All cases of Mechanical Intestinal Obstruction confirmed per operatively.

Exclusion Criteria:

- Children below 12 years of age.
- Ulcerative colitis.
- Crohn's disease.

Data Analysis: Data were analyzed with the help of computer SPSS software.

Study Design: Descriptive study.

RESULTS

A total of 100 patients were treated for mechanical bowel obstruction during the study period. There were 83 males and 17 female. Male to female ratio was 5:1.

The patients ranged in age from 20-70 years. The large numbers of patients were in the 35-45 years of age (Table-1).

Seventy-nine (79%) patients had obstruction of the small intestine and twenty-one (21%) had obstruction of the large intestine. Majority of the patients of the patients presented with Abdominal pain, vomiting, abdominal distention.

Etiology

The etiological factors included Adhesions and bands 38. External hernias 24 (24%), malignancy 14, tuberculosis 8, Volvulus 6, Intussusceptions 3, internal hernia 3, mesenteric fibrosis 2, Band of Ladd and Bolus obstruction in one case each.

Adhesions and External hernia accounted for almost more than half the causes of mechanical intestinal obstruction. Among the

38 patients there were 9 females and 29 males. In 35 of these patients there was a history of previous abdominal surgery including 9 females and 26 males.

Out of 24 cases of External hernia, there were only three cases of obstructed Para umbilical hernia. The history was more than twenty-four hours with intestinal obstruction. Another interesting observation was on the incidence of strangulation irrespective of the age of the patient. Hernias can become strangulated at any age. All of the patients had noticed the hernia for at least more than one year.

Intra abdominal malignant disease caused obstruction in 14 patients (14%). In all of these 14 cases obstruction was due to primary. All of the patients in this group were above 60 years of age including 12 males and 2 females.

There were 8 cases (8%) of intestinal obstruction in the series caused by stricture in the ileum, 5 female and 3 males. Tuberculosis was the cause in all of them. Pulmonary tuberculosis was associated in three females.

Among tuberculosis cases, one patient presented with perforation, which is quite rare. In six patients there were multiple strictures and two patients had ileocaecal tuberculosis and presented with mass in the right iliac fossa. Diagnosis was usually straightforward because majority of them had associated peritoneal or serosal nodules. Strictureplasty was done in 4 cases, while resection of stricture and end-to-end anastomosis was done in 2 cases and right hemicolectomy was also done in 2 cases. Postoperative antituberculous chemotherapy was started in all cases.

There were 6 cases of Volvulus in this series. All patients were between 50-65 years of age. Volvulus of sigmoid colon was the cause of intestinal obstruction in all the cases.

There were 3 (3%) cases of intussusceptions in this series and all were adult 16-44 years, although intestinal obstruction caused by intussusceptions primarily is a disease of children. A few cases

Table-1: Age Distribution.

Age	No. of patients	Percentage
0-12	Not included	—
13 -25	12	12
26 -35	25	25
36-45	25	25
46-55	20	20
56-65	15	15
66-above	18	18

Table-2: Causes of Intestinal obstruction in 100 patients

Nature of obstruction	No. of patients	%
Adhesions and bands	38	38
Obstructed/Strangulated hernia	24	24
Malignancy	14	14
Tuberculosis	8	8
Volvulus	6	6
Intussusception	3	3
Internal hernia	3	3
Mesenteric Fibrosis	2	2
Band of Lad	1	1
Bolus obstruction	1	1
Total	100	100

were of internal hernia, mesenteric fibrosis band Lad, and bolus obstruction.

DISCUSSION

Intestinal obstruction is one of the most common surgical emergencies. This study analyzes the age and sex incidence, frequency of various causes and evaluates the associated problems of management. Only patients with acute mechanical obstruction have been considered in this study. Maximum percentage of patients (23%) was in the group between 36-45 years of age in this series. While most of the studies reported high age groups, yet, due to the fact that the average life span in our country is shorter than that in western societies. Male to female ratio in our series is 4:1 while Fuzum [7] reported male and female ratio of 1:2 in Turkey. In our series adhesions is the most common cause (38%) followed by obstructed hernia. The pattern of mechanical intestinal obstruction shows diversity in the observations in some other studies carried out in Pakistan [8-13]. Ahmed [11] reported intestinal tuberculosis 38% as a most common cause.

The series also demonstrates that significant proportion of intestinal obstruction still occurs due to tuberculosis. Maximum incidence was in adults and five were females and three males. In all reported series the incidence of tuberculosis is higher in females [14], although tuberculosis has been eradicated to a great deal in the West. It is not surprising that tuberculosis is the fourth leading cause of obstruction in the series, since this is a disease still prevailing in the Asian countries. Tuberculosis affects almost every organ in the body. Tuberculosis of the gastrointestinal tract is the next common lesion to pulmonary Koch's.

The series was also notable for the very low incidence of obstruction due to Volvulus and intussusceptions comprising of 6 (6%) and 3 (3%) respectively. No definite cause has been found in the cases of intussusceptions except in one case, where multiple polyps were present in small and large gut Idiopathic intussusceptions in adults are extremely rare.

Urgent surgery was performed in all patients within 12-24 hours of admission. In most surgical series, acute intestinal obstruction is the presenting symptoms of colon carcinoma in 20% of cases. In our series carcinoma of colon was cause of intestinal obstruction in 14 (14%) of cases. All of the patients were above 55 years of age.

Emergency resection followed by primary ileocolic anastomosis is generally accepted as the treatment of choice for obstructing tumours of the right colon, even in the presence of small bowel distension and peritonitis [15].

In our series right hemicolectomy was done in six cases with no mortality. Primary resection and end-to-end anastomosis was done for left colon obstruction in two patients both died with in early postoperative period, one due to bronchopneumonia and other due to congestive cardiac failure. One patient of ileotransverse anastomosis also died on 3rd postoperative day.

There were 4 (4%) deaths in our series of 100 patients. The operative mortality for

intestinal obstruction varies considerably, depending upon the age of the patient and associated illness, state of the intestine either simple or gangrenous. McEntee [16] reported mortality of 11% in his series.

Pain [17] Reported 15% mortality in strangulated non-viable bowel obstruction. The operative mortality for simple mechanical obstruction requiring operation is approximately 1%, while operative mortality for strangulated intestinal obstruction varies, depending on the age of the patient and associated illness and may be 30% or higher [18, 19].

The highest mortality in our series was found in patients in the 6th and 7th decades of life. So the patient age has got important bearing related to mortality.

It has been experienced that when surgical relief of intestinal obstruction is to be provided as early and as efficiently as possible. Sufficient time should be devoted to correct the depleted fluid volume and imbalanced serum electrolytes. It is not possible to correct the dehydration and electrolyte disorder completely within a couple of hours. The fluid and electrolyte imbalance carries high operative risk and mortality and should be corrected, as completely as possible preoperatively.

CONCLUSION

Etiological factors of mechanical intestinal obstruction have been limited to adhesions, as the most common cause, followed by strangulated/obstructed external hernia, malignancy and tuberculosis. Abdominal pain, vomiting and constipation were the presenting symptoms almost in all cases.

A more aggressive policy aimed at earlier detection and elective treatment of both inguinal hernia and large bowel cancer in elderly patients is likely to reduce the incidence of intestinal obstruction. With increasing numbers of major elective abdominal operations, it is also likely that the

problem of adhesive obstruction will assume even greater proportion

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