

ETIOLOGICAL SPECTRUM OF DYNAMIC INTESTINAL OBSTRUCTION

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ABSTRACT

Background: Intestinal obstruction is a common and potentially dangerous surgical emergency with high morbidity and mortality if managed inappropriately. It is essential to distinguish between its various types. The aim of this study was to determine the frequency of various causes of mechanical intestinal obstruction in our practice.

Material and Methods: This was a prospective cohort study carried out at Isra University Hospital and three major private hospitals of Hyderabad from January 2002 to December 2006. All adult patients presenting with symptoms suggestive of intestinal obstruction were included in the study. Patient with adynamic obstruction and those having definite peritonitis were excluded from the study. Various causes of dynamic intestinal obstruction were noted and this data was compared with the local and international studies.

Results: Out of 171 patients operated for dynamic intestinal obstruction, tuberculosis was found in 70 (41%) patients making it the most common cause followed by adhesions in 56 (33%) and obstructed inguinal hernia in 21 (12%) patients. Other less common causes of intestinal obstruction reported in this study included intussusception, colorectal cancer, volvulus, and pelvic abscess.

Conclusion: The causes of intestinal obstruction are variable in different parts of the world. Tuberculosis is still the leading cause of intestinal obstruction in this part of the world.

Key words: Intestinal obstruction, Dynamic intestinal obstruction, Tuberculosis.

INTRODUCTION

Intestinal obstruction is a common and potentially dangerous surgical emergency associated with high morbidity and mortality if managed inappropriately. The clinical features are vomiting, constipation, abdominal distension and pain, with difference in magnitude according to the cause and the site of intestinal obstruction. Early diagnosis is the key to success as the mortality rate rises with each passing hour from the onset of disease. It is usually classified as dynamic or mechanical obstruction, in which peristalsis works against an obstructing agent like adhesions, volvulus, intussusception, inflammatory stricture, etc. The other variety is called adynamic obstruction in which peristalsis ceases and no true propulsive waves occur as in paralytic ileus or mesenteric vascular occlusion. Absolute constipation, which was considered to be one of the cardinal features, should be excluded from the features as it takes at least 24 hours to develop. It is essential to distinguish between simple and strangulating obstruction. Failure to diagnose strangulation at an early stage increases the mortality. To diagnose the right type of obstruction is more important than to be

certain of the cause. Consequently when there is any doubt about the distinction, it is better to operate.¹

Clinically, intestinal obstruction is classified as small bowel and large bowel obstruction. Small bowel obstruction is partial or complete interference with the distal passage of the contents in the small intestine. It is one of the more common acute abdominal emergencies and is associated with significant mortality and morbidity, especially if it progresses to bowel ischemia.² Large bowel becomes obstructed 3-4 times less frequently than the small bowel. The main causes of large bowel obstruction are cancer (primary or recurrent) and sigmoid volvulus, the prevalence being subject to a wide geographical variation.³

The aim of this study was to determine the frequency of the various causes of mechanical or dynamic intestinal obstruction in this region.

PATIENTS AND METHODS

This prospective cohort study was carried out at Isra University Hospital and three major pri-

vate hospitals of Hyderabad from January 2002 to December 2006.

All adult (12 years and above) patients presenting to emergency room with symptoms suggestive of intestinal obstruction and subsequently operated, were included in the study. Patients with adynamic intestinal obstruction were excluded from the study. Detailed history and physical examination of patients was performed in the emergency room. Abdominal (erect and supine films) and chest radiographs were taken in all patients.

Initially, the conservative treatment was started in all patients. Those responding and not requiring exploratory laparotomy were excluded from the study. Patients with features suggestive of definitive peritonitis were also excluded from the study.

Patients who underwent exploratory laparotomy for the relief of intestinal obstruction were further studied. Operative findings and surgical procedures were noted in all these patients and the necessary specimens were sent for histopathological confirmation of the final diagnosis.

RESULTS

In all, there were 171 patients with mechanical intestinal obstruction fulfilling the selection criteria during the above mentioned study period. The gender distribution was predominantly male (n=103) making up to 60.23% of the total patients. All these underwent exploratory laparotomy for the relief of obstruction.

Out of these 171 patients, tuberculosis was found in 70 (41%) patients making it the most common cause. The diagnosis of tuberculosis was confirmed by histopathological examination of the tissue taken at the time of operation. These patients were given anti-tuberculous therapy.

Adhesions were found to be the next common cause of intestinal obstruction accounting for 56 (33%) patients. Most of these adhesions resulted from previous surgery for different reasons. Out of these 56 patients with adhesions as the cause of obstruction, adhesionolysis was performed in 42 patients, 13 patients needed resection and anastomosis, while one patient had Noble's plication procedure done for recurrent adhesive intestinal obstruction.

The next common cause of intestinal obstruction was obstructed inguinal hernia in 21 (12%) patients. In two of these, the affected bowel was found gangrenous requiring resection and anastomosis. In the remaining 19 patients, the affected bowel was found to be normal. Obstructed paraumbilical hernia was seen in 7 patients (4%). All of

these were female patients and the affected bowel was found normal. Three patients presented with intussusception and same number of patients had large bowel cancer. Other less common causes of intestinal obstruction found in this study included volvulus, rectal carcinoma and pelvic abscess. The overall list of different causes of intestinal obstruction observed in this study is shown in Table-1.

Table-1: Causes of dynamic intestinal obstruction. (n = 171)

| S. No. | Cause | No. of patients | Percentage |
|--------|----------------------------------|-----------------|------------|
| 1 | Tuberculosis | 70 | 41% |
| 2 | Adhesions | 56 | 33% |
| 3 | Obstructed inguinal hernia | 21 | 12% |
| 4 | Obstructed Para umbilical hernia | 7 | 4% |
| 5 | Intussusception | 3 | 1.7% |
| 6 | Large bowel Cancer | 3 | 1.7% |
| 7 | Advance rectal cancer | 2 | 1.2% |
| 8 | Sigmoid Volvulus | 2 | 1.2% |
| 9 | Pelvic abscess | 2 | 1.2% |
| 10 | Caecal Volvulus | 1 | 0.6% |
| 11 | Gall Stone ileus | 1 | 0.6% |
| 12 | Meckle's diverticulum | 1 | 0.6% |
| 13 | Amoeboma | 1 | 0.6% |
| 14 | Internal hernia | 1 | 0.6% |

DISCUSSION

In contrast to Western literature, abdominal tuberculosis is still a common cause of intestinal obstruction in this part of the world. Three different local studies have revealed tuberculosis as the commonest cause.^{7,8,9} Zahid et al in their study of 357 patients found tuberculosis as the leading cause, accounting for 38.13% of all the cases followed by obstructed /strangulated hernia in 26.84% of patients.⁷ Ismail et al in their study of 75 cases, found tuberculosis in 36% patients, as the main cause of dynamic intestinal obstruction followed

by carcinoma of large gut and postoperative adhesions.⁸ In a similar study of 116 cases, Naseer et al also found abdominal tuberculosis as the commonest cause of dynamic intestinal obstruction followed by obstructed /strangulated external hernia in 27.5% of patients.⁹ This data showing abdominal tuberculosis as a leading cause of intestinal obstruction is consistent with our study, showing 41% patients having abdominal tuberculosis as the leading cause. The wide spectrum of presentation makes abdominal tuberculosis a difficult disease to recognize.¹⁰ Intestinal tuberculosis is one of the commonest problems faced by surgeons in the developing world commonly affecting the younger age group.¹¹ Poverty and overcrowding are making the situation worse in underdeveloped countries and are responsible for the spread of disease. The incidence of tuberculosis is also increasing in the West due to an increase in the immigrant population, aging population and HIV infection.¹² The operative findings of tuberculous abdomen in cases of intestinal obstruction are due to single or multiple strictures which are managed by stricturoplasty or resection and anastomosis if multiple strictures are found in a short segment.^{13,14} Obstructed ileocaecal tuberculosis is managed by ileotransverse bypass or extensive resection (right hemicolectomy).

The obstructed inguinal hernia was found to be the commonest (45.7%) cause of mechanical obstruction in a study of 232 patients. However this incidence seems to be declining nowadays.⁴ In another study of 139 patients, Muyembe et al found sigmoid volvulus, external hernia, adhesions or bands and ileo-colic intussusception being the commonest cause of bowel obstruction.⁵ Adhesions are the commonest cause of intestinal obstruction especially small bowel. Approximately 4-5% of patients with a previous laparotomy will develop small bowel obstruction and this figure varies according to the type of operation. The common causes of adhesive small bowel obstruction are previous appendectomy, gynaecological surgery and operations for colorectal cancers. Adhesions are the consequence of injury which may be traumatic, thermal, ischaemic, inflammatory or due to foreign body.⁶

CONCLUSION

The causes of intestinal obstruction are variable in different parts of the world. Tuberculosis is still the leading cause of intestinal obstruction in Pakistan.

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