



CLINICO - EPIDEMIOLOGICAL STUDY OF ACUTE SMALL INTESTINAL OBSTRUCTION IN ADULTS AT MARATHWADA REGION

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ABSTRACT Acute Intestinal obstruction is a common surgical emergency, both small and large intestine can be affected. Obstructed hernias are the commonest cause of intestinal obstruction. A clinico -epidemiological study was conducted on 50 patients for a period of one year on patients with acute intestinal obstruction. In our study small bowel obstruction was more common than large bowel obstruction. External hernia either obstructed or strangulated was commonest cause of intestinal obstruction. There was low operative mortality in the hernia group despite the highest rate of associated strangulation. Early diagnosis of obstruction, careful selection of cases for surgery, skillful operative management, proper technique during surgery and intensive post operative treatment yielded great results.

KEYWORDS : Acute Intestinal obstruction, Hernia, Small Intestine , Large Intestine

INTRODUCTION

Acute mechanical bowel obstruction is common surgical emergency and a major cause of admission of patients to emergency surgical department. It constitutes a major cause of morbidity and financial expenditure in hospitals. Acute Intestinal obstruction belongs to highly severe conditions requiring a quick and correct diagnosis as well as immediate, rational and effective therapy. Detailed history and thorough clinical examination are helpful to make a working diagnosis and planning treatment.

Intestinal obstruction may be classified clinically into two types¹¹-

- Small bowel Obstruction (high or low)
- Large bowel Obstruction
- Adynamic or paralytic in which there is no mechanical obstruction

The nature of presentation will also be influenced whether the presentation is-

- Acute (hours)
- Subacute (days)
- Acute on chronic
- Chronic (weeks)

Acute intestinal obstruction usually occurs in small bowel obstruction with sudden onset of severe colicky central abdominal pain, distension, early vomiting and constipation.

The early diagnosis of small bowel obstruction is critical in preventing complications particularly strangulation.

Traditionally the clinical diagnosis of small bowel obstruction has dependent on plain abdominal radiographs. Unfortunately, findings on plain abdominal radiograph may not be confirmed in 20-52% of cases. The sensitivity of abdominal radiographs in the detection of small bowel obstruction ranges from 70 to 80 % , CT Scan is 80-90 % sensitive and 70-90% specific in detection of small bowel obstruction.

Purpose of this study is to determine the presentation, etiological factors, postoperative complications, management and outcome of dynamic intestinal obstruction in adults in our set up.

MATERIALS AND METHODS

A prospective study was conducted for duration of two years at Anantshree Hospital, Aurangabad ,Maharashtra. By using universal sampling method 50 patients were included in the study. Patients above 20 years of age with signs and symptoms of acute intestinal obstruction were included in the study after obtaining consent.

Detailed history was taken as per the predesigned proforma. General condition of the patient was assessed and if the patient was in shock then adequate resuscitation was carried out. Once the patient was haemodynamically stable the patient was shifted for radiological investigations. Diagnosis was done preoperatively as acute intestinal obstruction with guidance of clinical, radiological and laboratory parameters. Depending on the suspected disease and clinical status of patient, decision was taken regarding management. Patients with adhesive intestinal obstruction were initially given a trial of conservative treatment which was continued for 48 to 72 hours. If there

was no spontaneous resolution then laparotomy was done. Data regarding post treatment progress of the patient was maintained. Complications if any were identified and treated. Patients were followed in OPD for one month or longer after discharge.

RESULTS

Table 1- Distribution of patterns according to etiology of obstruction-

SR. No	Causes	Number of Patients	Percentage
1	External Hernias		50%
	Inguinal	14	
	Umbilical	4	
	Incisional	4	
	Femoral	2	
	Spigelian	1	
2	Adhesions & Bands	15	30%
3	Malignancies		8%
	Carcinoma of Caecum	1	
	Carcinoma of Ascending Colon	2	
	Carcinoma of Sigmoid Colon	1	
4	Volvulus		6%
	Small Bowel Volvulus	1	
	Sigmoid Colon Volvulus	1	
	Splenic Flexure Volvulus	1	
5	Tuberculosis	1	2%
6	Intussusception	1	2%
	Meckel's Diverticulum	1	2%
	Total	50	100%

Table 2- Distribution of patients according to the operative procedure performed-

Operative procedure performed	Number of patients	Percentage
Reduction of hernia with herniorrhaphy	17	34%
Release of bands and adhesions	15	30%
Bowel resection and anastomosis	15	30%
Resection and colostomy	1	2%
Laparotomy done and only biopsy taken	1	2%
Diverticulectomy	1	2%

In our prospective study, 50 adult patients of acute intestinal obstruction were studied. There were 31 males and 19 females. Out of 50 patients, 44 had small bowel obstruction and 6 had large bowel obstruction. Majority of patients were from 40 to 60 age group. The male to female ratio in our study was 1.63 : 1 . Incidence of small bowel obstruction in our study was 88 % while that of large bowel obstruction was 12 % . The average hospital stay in our study was 17 days. In our

study 30 % patients presented within 48 hours from the onset of symptoms. 56 % patients on 4th and 5th day while 14 % patients after 5th day . Overall mortality rate in our study was 12 % . Postoperative complications were observed in 30 % patients in our study.

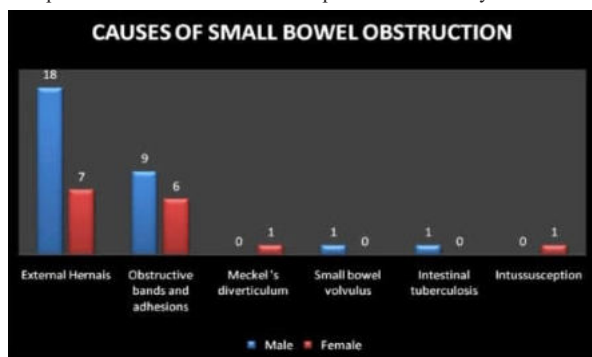


Figure 1-Distribution of patients according to etiology of small bowel intestinal obstruction-

Small bowel obstruction was more common than large bowel obstruction in our study. External hernia either obstructed or strangulated is the commonest cause of intestinal obstruction observed in our present prospective study.

Abdominal pain, vomiting , distension and constipation were the four cardinal features of intestinal obstruction, present in most of the cases. Tenderness, guarding, rigidity , rebound tenderness and shock were the cardinal features of strangulated intestinal obstruction .

Plain X-ray abdomen taken in erect posture is the important investigation required for the patients, followed by ultrasonography , and in doubtful cases CT scan help in further diagnosis.

The patients were managed depending upon the underlying cause (Table 2). There was very low operative mortality in the hernia group despite the highest rate of associated strangulation in this study .

DISCUSSION

In this present prospective study youngest patient was 18 years old and oldest patient was 78 years. In this study, 22% patients belong to 50-60 years age group and 54% belong to 30-60 years age group. Study by Souvik Adhikari et al 2008 has reported 52% cases of intestinal obstruction occur in the age group of 30-60 years.^[2] This study almost correlate with our present study. In our present prospective study mean age of patient is 49.52 years which is high as compared to other studies.^{[3][4]}

In present study, there are 31 males and 19 females. Male to female ratio is 1.6:1. Among previous studies, Adesunkamini AR, et al study reported male to female ratios 1.7 :1 which is nearly similar to that reported in our study.^[5] In contrast to other studies, Hadi A et al study, Ismail et al study, Mehmood Z, Manzoor A, Alvi AR, et al, the M:F ratio is 2:1.72, 1.03 : 7, 1.25:1.3:1 and 4.84:1 respectively.^{[6][7][8]} The gender discrepancy in our patients with males outnumbering females can be possible accounted for , as a large number of our patients had obstructed inguinal hernia, and in our country we mostly have males who suffer from this condition.

The incidence of small bowel obstruction in our study is 88%. The incidence reported in other studies, Hadi A et al study, Malik AM et al study, Ullah S et al study, Markogiannakis H et al study is 75.27% ,85%, 33.33%,76%, respectively. Incidence of small bowel obstruction in our study is comparable with Malik AM et al study^[7] But as compared to other studies it is higher. The incidence of large bowel obstruction in our study is 12%. The incidence reported in other studies, Hadi A et al study, Malik AM et al study, Ullah S et al study, Markogiannakis H et al study is 24.73%, 15%,68.88%,24%, respectively. The incidence of large bowel obstruction in our study is low as compared to other studies . The incidence of large bowel obstruction in our study is 12%.

The most common cause of intestinal obstruction in our present prospective study is external hernias (50%) which included, inguinal, femoral, umbilical, incisional and one case of spiglian hernia either obstructed or stangulated. Second most common cause of intestinal

obstruction in our study is adhesion (30%). Similar finding is reported by other international studies .^{[9][10]}

The average hospital stay of patients in our study is 17 days may be due to more number of patients with postoperative complications in our study. The overall incidence of post operative complications in our study is 30%. As compared to other studies it is high. Also majority of patients in our study are old patients, many patients presented late to the hospital leading to delayed diagnosis and treatment.

Overall mortality rate in our study is 12%. Old age of the patients, delayed presentation of patients to the hospital leading to delayed diagnosis and treatment, associated systemic co-morbid conditions may have led to a higher mortality rate in our study. Mortality rate in our study is comparable with Ohene-Yeboah M et al study 2001 and Lawal OO, et al study 1994.^[10] Mortality rate in patients with small bowel obstruction in our study is 6.81% while that reported in Markogiannakis H et al study 2007 is 0.8% Mortality rate in patients with large bowel obstruction in our study is 50% while that reported in Markogiannakis H et al study 2007 is 2.7%. Mortality rate is higher in our study, this may be because majority of patients in our were from age group 51-60 most of the patient presented late to the hospital which resulted in delayed diagnosis and treatment.

CONCLUSION

Acute intestinal obstruction is a common surgical emergency and can arise from a wide range of etiologies. It is important to diagnose early so that active management and resuscitation can be commenced . The patients which are managed non operatively need close ongoing assessment. The operative management continues to evolve towards single stage procedures.

Early diagnosis, aggressive resuscitation and timely definitive treatment is essential in order to decrease the incidence of bowel ischemia, necrosis, and perforation and the morbidity and mortality associated with acute intestinal obstruction.

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