

**Original Research Article****A Retrospective Study: Aetiology and Presentation of Acute Intestinal Obstruction in Adults at Tertiary Care Centre**

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Abstract

Background: Acute intestinal obstruction is one of common abdominal emergency and is associated with significant morbidity and mortality, especially if it progresses to bowel ischemia. The aims of this study was to analyse aetiology and various modes of presentation of acute intestinal obstruction in adults at tertiary care centre.

Methods: 50 consecutive patients of 18 years and above presenting with acute intestinal obstruction were taken randomly and managed between January 2018 to December 2019. Out of these 50 cases, 31 were male, 19 were female, patients with subacute intestinal obstruction and patients with paralytic ileus were excluded in this study. Plain X-ray erect abdomen was done in all cases. Ultrasonography was done only in those patients whose X-ray finding was inconclusive. CT as a modality also included for work up.

Results: The most common age group affected was 51-60 years.. Incidence in male (31) was more as compared to female population (19). Pain abdomen was found in all (100%) patients, vomiting in 39(78%) patients, distension abdomen in 43 (86%) patients and constipation in 36 (72%) patients. Many patients had coincidence of symptoms. Commonest cause of acute intestinal obstruction noted was obstructed hernia.

Conclusions: Obstructed hernia was the commonest cause of obstruction. Pain abdomen is the most common presentation of acute intestinal obstruction. Earlier the presentation, the better the outcome was found.

Keyword: IO-Intestinal obstruction, SBO-Small bowel obstruction, LBO-Large bowel obstruction.

Introduction

Intestinal obstruction is one of the most common surgical emergencies in all age groups which requires a quick and correct diagnosis as well as immediate, rational and effective therapy. It is defined as an obstruction in forward propulsion of

the contents of the intestine either due to dynamic, adynamic or pseudo-obstruction. Intestinal obstruction can be of either small bowel or large bowel; small bowel obstruction accounts for majority of cases⁽¹⁾.

Mode of presentation varies with underlying etiology. Common causes of intestinal obstruction are obstructed hernias, postoperative or tuberculous adhesions, neoplasms, foreign bodies, inflammatory bowel disease, faecal impaction and volvulus. The aetiological factors of IO vary due to geographical location with dependence on staple diets, lifestyle, genetic factors and health seeking behaviour of a people of a region or country^(2,3). In advanced surgical healthcare systems like in the USA the leading cause of obstruction is adhesions (74%) followed by Crohn's disease, neoplasm and hernias⁽⁴⁾ and this is similarly reflected in Greece where adhesions (64.8%), hernias (14.8%) and large bowel tumours were common aetiologies with 76% of the patients having small bowel obstruction while 24% had large bowel obstruction⁽⁵⁾. In low resource settings the trend consists of hernias, malignancies, adhesions and the unique presence of tuberculosis strictures at a frequency of 14.7% in India⁽⁶⁾, while in West Africa the leading aetiological factor noted was obstructed inguinal hernia (45.7%) with an increased proportion of obstruction due to tumours⁽⁷⁾. Mortality varies widely according to cause and any associated complications, being 100% in patients with untreated strangulated obstructions⁽⁸⁾. In earlier part of century mortality and morbidity was very high. Although mortality has reduced with better understanding of pathophysiology, improvement in diagnostic techniques, potent antibiotics, introduction of new surgical techniques and improvement in the field of anaesthesia, still mortality ranges from 3 % for simple obstruction to 30% when there is perforation of obstructed bowel or vascular compromise. This is further influenced by clinical setting and related comorbidities⁽⁹⁾. Success in treatment of patients with acute intestinal obstruction depends largely upon early diagnosis, timely fluid resuscitation, skillful operative management, proper surgical technique and intensive postoperative management.

Materials and Methods

A total number of 50 cases of acute intestinal obstruction have been studied from January 2018 to December 2019. Study was done in selected patients aged 18 years and above who attended emergency department at Nalanda Medical College & Hospital, Patna, Bihar.

Inclusion Criteria: All patients between the age of 18-80 years regardless of gender, presented with dynamic intestinal obstruction and undergone exploratory laparotomy were included.

Exclusion Criteria: Patients below 18 years of age and patients with paralytic ileus, subacute intestinal obstruction and those responded to conservative measures were excluded.

Soon after the admission, detailed history & thorough clinical examination was performed. The data regarding age, sex, duration of symptoms, associated diseases were documented. The diagnosis of intestinal obstruction was made on the basis of detailed history, clinical findings, plain abdominal radiograph, and ultra sound examination of abdomen. CT scan of abdomen was done in selected cases. Laboratory investigations like CBC, blood sugar, blood urea, serum creatinine, serum electrolytes, blood grouping and typing and viral markers were done. Immediately after admission, resuscitation with IV fluids done till hydration and urine output become normal. Nasogastric decompression with Ryle's tube carried out and IV antibiotics started. After resuscitation all patients who did not improve with conservative management were subjected to exploratory laparotomy. Appropriate surgical procedure was carried out. Operative details like cause of obstruction, site of obstruction and operative procedure performed were recorded. Whenever required, specimen was sent for histopathological examination for definitive diagnosis. Postoperatively patients were followed up for first 6 months for detection of early as well as late complications. The results were tabulated according to age, sex, symptoms, signs and causative factors. On the basis of

observation, results were drawn and compared with other relevant literatures.

Results

A total number of 50 cases with symptoms, signs and radiological finding suggestive of intestinal obstruction were studied. In our study maximum incidence was seen in the age group 51 to 60 years (26%). 62% of cases were males and 38% were females. Thus males outnumbered females. Age and Sex distribution of Cases have been summarized in Table I. The most common symptom was pain abdomen which was present in all 50 cases (100%). On examination, groin

swelling was detected in 13 cases (26%) and tenderness in 42 cases (84%). Presenting Symptoms and Signs have been summarized in Table II.

In our study small bowel was the most common site of obstruction, documented in 42 cases (84%). Levels of intestinal obstruction have been summarized in Table III.

Obstructed hernia (38%) was the most common cause of intestinal obstruction followed by adhesions and bands (34%). Different causes of intestinal obstruction have been summarized in Table IV.

Table I: Age and Sex Distribution of Cases with Intestinal Obstruction

Sl.No.	Age Group (Years)	Male	Female	Total	Percentage
1	18-20	2	1	3	6 %
2	21-30	4	2	6	12 %
3	31-40	7	3	10	20 %
4	41-50	4	3	7	14 %
5	51-60	8	5	13	26 %
6	61-70	5	3	8	16 %
7	71-80	1	2	3	6 %
	Total	31	19	50	100 %

Table II: Presenting Symptoms and Signs

Sl. No.	Symptoms and Signs	No. of Cases	Percentage
1	Pain abdomen	50	100 %
2	Vomiting	39	78 %
3	Abdominal Distension	43	86 %
4	Constipation	36	72 %
5	Groin Swelling	13	26 %
6	Tenderness	42	84 %
7	Guarding and Rigidity	26	52 %
8	Absent Bowel Sound	22	44 %

Table III: Levels of Intestinal Obstruction

Sl. No.	Level of Obstruction	No. of Cases	Percentage
1	Small Bowel Obstruction	42	84 %
2	Large Bowel Obstruction	08	16 %
	Total	50	100 %

Table IV: Aetiology of Intestinal Obstruction

Sl. No.	Aetiology	Male	Female	No. of Cases	Percentage
1	Obstructed Hernia	15	4	19	38 %
2	Adhesions and Bands	8	9	17	34 %
3	Abdominal TB	2	3	5	10 %
4	Volvulus	3	1	4	8 %
5	Malignancy	2	2	4	8 %
6	Intussusception	1	-	1	2 %
	Total	31	19	50	

Discussion

Acute intestinal obstruction is a common life threatening surgical emergency all over the world presenting as acute abdomen and requiring surgical intervention. It occurs in all age groups. Most commonly affected age group in our study was 51 to 60 years (26%), followed by 31-40 years (20%) and 61-70 years(16%) age group. Similar observation was reported in the study conducted by Gill SS et al⁽⁸⁾. In the studies conducted by Adhikari S et al⁽⁹⁾, most commonly affected age group was 41 to 50 years. While in the studies by Singh H⁽¹⁰⁾ and Cole GJ et al⁽¹¹⁾. The most commonly affected age group was 31 to 40 years. In a study conducted by Deshmukh SN and Maske AN⁽¹²⁾, peak incidence was seen in the age group 51-60 years (22%) followed by 61-70 years (18%) of age which is similar to our study. Male to female ratio in our study was 1.6:1. Similar observations were reported by Hadi et al⁽¹³⁾, Mehmood Z et al⁽¹⁴⁾ and Ismail et al⁽¹⁵⁾ in their studies.

Incidence of small bowel obstruction (84%) was more than large bowel obstruction (16%) in our study. Similar observations are reported by various other studies^(13,16,17). While in the study conducted by Ullah S et al⁽¹⁸⁾, the incidence of large bowel obstruction was more than small bowel obstruction.

Abdominal pain (100%) and distension (86%) were the predominant symptoms of presentation in our study. These findings are almost consistent with the other studies^(9,15,19). Obstructed hernia (38%) was the commonest cause of intestinal obstruction in our study followed by adhesions (34%). Similar findings are also reported by various national and international studies^(9,19).

Conclusion

Obstructed hernia was the leading cause of intestinal obstruction in our study followed by adhesions and bands with pain abdomen as the most common presenting symptom. Increasing awareness among the people about the complications of hernia and insisting them for

early repair may reduce the incidence of intestinal obstruction. Old age, delayed presentation to hospital, associated comorbid conditions increases the morbidity and mortality in these patients. Early diagnosis and timely surgical intervention may decrease morbidity and mortality of this condition

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