



RETROSPECTIVE STUDY OF INTESTINAL OBSTRUCTION IN 50 CASES IN A TEACHING HOSPITAL

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ABSTRACT

Mechanical bowel obstruction is a frequently encountered surgical emergency and continues to remain a challenge to surgeons despite advances in field of medicine, pathophysiology, surgical technique and conservative management. This retrospective study in patients operated for acute mechanical bowel obstruction in our department, was intended to highlight the common causes of intestinal obstruction in this geographical location of the study which had suggested measures for treatment of the condition. 50 patients who underwent exploratory laparotomy for intestinal obstruction were compared in terms of age, sex, symptoms, etiology of intestinal obstruction, site of obstruction, operative procedure performed and post operative complications.

KEYWORDS : Pain, Vomiting, Distension, Intestinal obstruction.

INTRODUCTION:

Mechanical bowel obstruction is a common surgical emergency and a frequently encountered problem in abdominal surgery^[1, 2]. It remains a challenge to surgeons despite advances in field of medicine, pathophysiology, surgical technique and conservative management. Intestinal obstruction is the significant cause of morbidity and mortality especially when the findings are associated with bowel gangrene or perforation^[3]. Early recognition of intestinal strangulation in patients with mechanical bowel obstruction is important to decide whether to perform an emergency surgery or to allow safe non-operative management of carefully selected patients^[1-4]. A preoperative diagnosis of bowel strangulation cannot be made or excluded reliably by any known parameter, combinations of parameters, or by experienced clinical judgement^[4-6]. Charles V. Mann (1994) has given, the classical clinical advice that 'sun should not both rise and set' on a case of unrelieved intestinal obstruction, unless there are positive reasons for delay^[7]. We, therefore, conducted this retrospective study in patients operated for acute mechanical bowel obstruction in our department to highlight the common causes of intestinal obstruction in this rural area of Andhra Pradesh which had suggested measures for treatment and outcome

AIMS AND OBJECTIVES

- To study the incidence and causes of intestinal obstruction
- To study the mode of presentation and various clinical features of intestinal obstruction
- To study the role of imaging studies in determining the site of obstruction
- To study the morbidity and mortality rates in acute intestinal obstruction.

MATERIALS AND METHODS:

The materials for the clinical study of intestinal obstruction and its surgical management were collected from surgical wards in Government General Hospital, Kadapa, Andhra

Pradesh admitted during the period from June 2021 to May 2022. 50 cases of intestinal obstruction have been studied with age groups ranging from 11 years to 70 years.

Inclusion Criteria:

- Patients presenting with features of intestinal obstruction and in whom surgical management was done.
- Age group from 11 years to 70 years

Exclusion Criteria:

- Patients with subacute intestinal obstruction treated conservatively.

This retrospective study was carried out on data obtained from 50 patients, who underwent exploratory laparotomy for intestinal obstruction were compared in terms of age, sex, symptoms, etiology of intestinal obstruction, site of obstruction either small bowel or large bowel, operative procedure done and post operative complications. Data collection included - a detailed record of the patient's history, physical examination, and necessary investigations like routine blood investigations, X-ray abdomen erect and supine in all cases, ultrasound abdomen and CT Abdomen were recorded based on the requirement for each case. A proforma was recorded of each patient with age, sex, symptom duration, past surgical and medical history, diagnostic workup, etiology of obstruction, operative information, morbidity and mortality and the final outcome of the patients.

RESULTS:

The study of 50 cases of intestinal obstruction is as follows

Table 1: Age And Sex Distribution Of Cases

Age group	Male	Female	Total	Percentage
11-20	1	1	2	4%
21-30	4	2	6	12%
31-40	4	4	8	16%

41-50	7	5	12	24%
51-60	7	5	12	24%
61-70	6	4	10	20%
Total	29	21	50	100

There were 29 male and 21 female in present study cases. The male and female are nearly in equal ratio. Case distribution is more between 41-60 years of age groups

Table 2: Presenting Symptoms And Signs

S NO.	Clinical features	No. of Cases	Percentage
1	Pain abdomen	50	100%
2	Vomiting	40	80%
3	Distension of abdomen	50	100%
4	Constipation	41	82%
5	Dehydration	35	70%
6	Fever	8	16%
7	Tenderness	43	86%
8	Palpable mass	10	20%
9	Increased bowel sounds	32	64%
10	Absent bowel sounds	18	36%
11	Visible peristalsis	4	8%

Main mode of presentation was in terms of pain abdomen, vomiting and constipation. Distension of abdomen, tenderness and hyperperistaltic sounds were common finding in the cases.

Site Of Obstruction:

Amongst operated cases, small bowel was the site of obstruction in 36 cases and large bowel obstruction in 14 cases. Thus small bowel: large bowel obstruction ratio was 2.57:1.

Table 3: Etiology Of Intestinal Obstruction

Etiology of Intestinal Obstruction		Number of patients (n=30)	Percentage
1. Adhesion and bands		20	40%
2. Hernia		9	18%
3. Malignancy	Adenocarcinoma of colon	12	24%
	Ovarian tumor with peritoneal metastasis with adhesions between ileal loops	1	
	Stomach carcinoma infiltrating transverse colon	2	
4. TB stricture		4	8%
5. Volvulus		5	10%

Adhesions and bands are the most common cause of intestinal obstruction followed by malignancy and hernia. Few other causes included TB strictures and volvulus.

Radiology Findings

The most common radiology finding is multiple air fluid levels followed by dilated bowel loops.

Table 4: Types Of Operation

Types of operation	No. of patients (n=50)	Percentage
A. Resection and end-to-end ileo-ileal anastomosis	8	16%
B. Release of adhesions and bands	12	24%
C. Hernia Repair	9	18%

D. Hemicolectomy	9	18%
E. Untwisting of volvulus	5	10%
F. Resection and end-to-end jejuno- jejunal anastomosis	1	2%
G. Resection and a. loop ileostomy b. loop colostomy	4 2	8% 4%

Table 5: Post Operative Complications

Postoperative complications	Number of patients (n=50)	Percentage
A. Wound infection and dehiscence	12	24%
B. Respiratory infection	6	12%
C. Entero cutaneous fistula	3	6%
D. Paralytic ileus (dys-electrolytemia)	5	10%
E. Septicemia	5	10%

Wound infection and dehiscence is the most commonly seen complication in post operative period.

FINAL OUTCOME Most of the cases recovered without any complications (64%).

Mortality:

In present study 4 persons died following surgery for acute intestinal obstruction (8%). due to following causes

1. Septicemia due to peritonitis
2. Multiple organ failure due to septicemia
3. ARDS due to respiratory infections

DISCUSSION

Age Incidence:

Here the youngest patient was 15 years and oldest patient was 70 years. In this study, 24% belongs to 50-60 years age group & 64% belongs to 30-60 years age group. Studies by Gill Eggleston⁵, has reported 17% of cases in the age group of 50-60 years and 60% of the cases of intestinal obstruction occur in the age group of 30-60 years. Their studies almost correlate with the present study.

However Harban Singh⁶ and C. S. Ramachandran⁷ say that the maximum number of cases occurs in the age group of 21-40 years, of these the etiological factors were obstructed hernia.

Table 6: Age Wise Incidence Of Intestinal Obstruction In Different Studies

Age group	Harban Singh ⁶	Playforth ⁹	S.S. Gill ⁵	Present Study
11-20	10	4	12	4%
21-30	16	5	12	12%
31-40	18	13	13	16%
41-50	15	18	13	24%
51-60	10	14	16	24%
>60	20	40	13	20%

Sex Incidence:

In present study, there are 29 male and 21 females. Male and female are nearly in equal ratio. Among previous studies, Budharaja et al¹³ and Harban Singh et al⁶, reported 4:1 and Shakeed¹⁰ found equal incidence.

Table 7: Comparison Of Sex Incidence In Different Studies

Studies	Male : Female ratio
Budharaja et al ¹³	4:1
Harban Singh et al ⁶	4:1
Shakeed ¹⁰	1:1
Present study	1.38:1

Etiology:

The etiology of intestinal obstruction varies from one country to other and from one part of the country to another part. The comparative study of previous report is as follows:

Table 8: Comparison Of Causes Of Intestinal Obstruction In Different Studies

Cause	Present Study	Playforth 1970	C. S. Ramachandran 1982	Brooks and Butler 1996	Biarj et al 1999
Adhesion	40%	10%	23%	23%	53%
Hernia	18%	35%	13.6%	25%	26%
Intussusception	-	12%	7.4%	18%	-
Tuberculosis	8%	3%	8.6%	-	-
Malignancy	24%	4%	9.3%	5%	-
Volvulus	10%	4%	26.6%	1%	3%
Mesenteric vascular thrombosis	-	-	-	-	26%

In the present study, 40% of the cases of obstruction are due to adhesions and bands. On review of the earlier Indian studies, 10% of intestinal obstructions were related to adhesion and more recent studies in 1982 reports 23%. The rise in the incidence of adhesion related obstructions are attributed to increased number of abdomino-pelvic surgeries. In the Western studies, the adhesion related obstruction range from 40-60%. Developing countries like India also reported 40% of the obstructions related to adhesions.

Operations:

Most common operation performed was release of adhesions and bands - 24%, hernia repair in 18%, hemicolectomy in 18% cases, resection of ileal segment and end to end ileo-ileal primary anastomosis - 16%, reduction and untwisting of volvulus in 10%, resection of jejunal segment and end to end jejuno-jejunal primary anastomosis 2%, loop ileostomy in 8% and loop colostomy in 4% cases.

Mortality:

Table 9: Mortality Comparison With Other World Series

Author	Year	No. of cases studied	Mortality(%)
Sufian and Matsumoto	1975	171	19.0
C. S. Ramachandran	1982	417	12.7
Cheadle et al	1998	300	9.0
Present study	2021-2022	50	8.0

In our study we had mortality rate of 8%. The decrease in overall mortality is due to better understanding of pathophysiology, aggressive surgical therapy.

The mortality in intestinal obstruction is high in individuals who develop strangulation and gangrene of the bowel, those present beyond 72 hours and in those are having pre-existing associated diseases and elderly people.

CONCLUSION

- In our scenario, post operative adhesions are the most common cause followed by malignancy and hernia
- Though obstruction was more common in small bowel, malignancies were common in large bowel
- Success in the management of acute intestinal obstruction depends upon high index of suspicion, prompt diagnosis, adequate resuscitation and skillful management

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