



CLINICAL STUDY OF INTESTINAL OBSTRUCTION IN ADULTS PRESENTING AT PBM HOSPITAL BIKANER IN NORTH WESTERN RAJASTHAN

Surgery

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ABSTRACT

Introduction: Acute intestinal obstruction is a common surgical emergency and occurs in all age groups. It is associated with significant morbidity and mortality, especially if it progresses to bowel ischemia. The treatment of intestinal obstruction is varied, and has changed greatly during the past two centuries. Early diagnosis of obstruction, skill full operative management, proper technique during surgery and intensive postoperative treatment carries a grateful result. Regional as well as worldwide variations in the patterns of intestinal obstruction are well documented in the literature. Periodic studies are needed to evaluate the etiological factors as well as changing pattern of disease. **Aim:** To study the incidence and prevalence, modes of presentation, surgical management options and complications of cases of intestinal obstruction. **Methods:** This was a hospital based observational study, by convenience sampling recruited 100 patients of acute intestinal obstruction eligible as per inclusion criteria within study duration of one year reported at Department of Surgery, S.P. Medical College, PBM Hospital, Bikaner. **Results:** mean age was 50.3 years 64% were male, External hernia (34%) is the commonest cause of Intestinal obstruction. Average hospital stay of patients in our study is 9.3 days. Wound infection, septicemia and wound dehiscence were most common complication. The overall survival rate and mortality rate in our study is 88% and 12%, respectively.

KEYWORDS

Acute intestinal obstruction, Bowel gangrene, Regional variation in clinical presentation

INTRODUCTION

Bowel obstruction remains one of the most common intra-abdominal problems faced by general surgeons in their practice.¹ In intestinal obstruction there is failure of passage of the intestinal contents.² Intestinal obstruction may be dynamic or adynamic, complete or incomplete, strangulating or non-strangulating.^{3,4} It is associated with significant morbidity and mortality, especially if it progresses to bowel ischemia.

Though intestinal obstruction can be diagnosed easily, the underlying cause except postoperative adhesions and external hernias are difficult to be diagnosed preoperatively.⁵ Small bowel obstruction (SBO) is more common and a challenging clinical problem. The etiology of bowel obstruction has been varied with site, small bowel obstruction commonly caused by adhesion (60%) and large bowel obstruction is frequently a result of malignancy (60%) usually in area of recto-sigmoid. There are various other notable causes for both small and large bowel obstruction like strangulated hernias, fecal impaction, volvulus and anastomotic stricture etc.^{6,7} Cardinal features of Intestinal obstruction are abdominal pain, abdominal distension, Nausea and vomiting, relative /absolute constipation (obstipation), dehydration and fever. The past medical history of patient may key in making diagnosis and establishing the cause. Patients with intestinal obstruction are extremely ill and require prompt assessment and resuscitation. It requires quick and correct diagnosis as well as immediate, rational and effective therapy. The treatment of intestinal obstruction is varied, and has changed greatly during the past two centuries. Early diagnosis of obstruction, skill full operative management, proper technique during surgery and intensive postoperative treatment carries a grateful result. Untreated bowel obstruction or delay in diagnosis and treatment can lead to gangrene of bowel which will eventually result into sepsis, multi-organ failure and death of patient. Regional as well as worldwide variations in the patterns of intestinal obstruction are well documented in the literature. Periodic studies are needed to evaluate the etiological factors as well as changing pattern of disease.⁸

Aim

Aim of the present study is to determine the incidence, etiology, clinical presentation, post-operative complications and final outcome in patients with intestinal obstruction in our institution.

Methods

Present study was carried out in the Dept. of Surgery, S.P. Medical

College and P.B.M Hospital, Bikaner. This is a prospective descriptive study and was carried out between December 2020 to November 2021. During the study period, 100 consecutive adult patients (Patients with 18 years and above 18 years of age) admitted with clinical and radiological evidence of acute dynamic intestinal obstruction, undergoing surgical intervention, regardless of gender were included. After obtaining permission from institution research board the present study was conducted data was collected from under study population through a pretested and semi-structured schedule,

Inclusion Criteria

Patients of age 18 years and above, regardless of gender, admitted with clinical and radiological evidence of acute intestinal obstruction and undergoing surgical intervention, enrolled in the study.

Exclusion Criteria

1. Patients below 18 years of age.
2. Patients with adynamic intestinal obstruction (paralytic ileus)
3. Patients undergone conservative line of management.
4. Patients not willing for surgical intervention and subsequently discharged AMA (discharged Against Medical Advice)

RESULTS

In our present prospective study most common age group of patients presented with intestinal obstruction was 51-60 years consisting of 29% patients. Mean age of our study population is 50.3 years.

In our present study out of 100 patients, 64 were males and 36 were females. Male to female ratio is 1.7. Out of total 100 patients 78 patients presented with small bowel obstruction and 22 patients presented with large bowel obstruction. Out of 64 male patients, 47 had small bowel obstruction and remaining 17 had large bowel obstruction. Out of 36 female patients, 31 had small bowel obstruction and remaining 5 had large bowel obstruction.

Table 1

Sr. No	Age group	Number of patients	Percentage	Mean Age
1	>18-20	7	7%	50.3 Years
2	21-30	8	8%	
3	31-40	16	16%	
4	41-50	14	14%	
5	51-60	29	29%	
6	61-70	17	17%	

7	71-80	8	8%	
8	≥ 81	1	1%	
	Total	100	100%	

Chart no. 1: Sex wise distribution of patients of intestinal obstruction

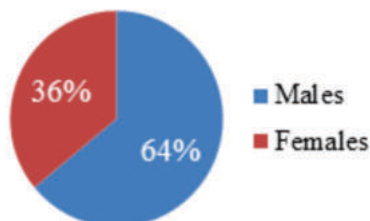


Chart 1

Chart No. 2 : Distribution of patients according to type of obstruction

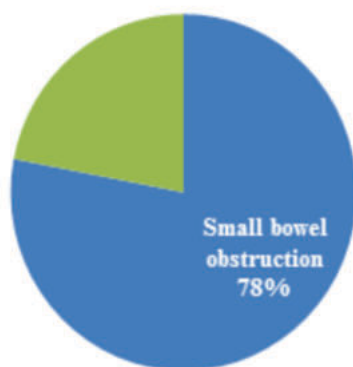


Chart 2

Table No. 2: Sex-wise And Site Wise Distribution Of Patients Of Obstruction.

Sr.No	Sex	Small bowel obstruction	Large bowel obstruction	Total Patients	Percentage
1	Male	47	17	64	64%
2	Female	31	5	36	36%

In this present study abdominal pain was presenting symptom in most of the patients (96%), followed by abdominal distension (94%). Vomiting was present in (92%) patients and constipation was present in (78%) patients.

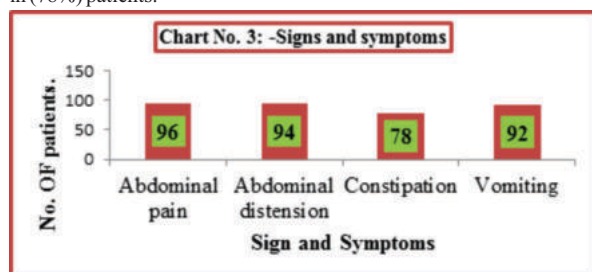


Chart 3

External hernia (34%) is the commonest cause of Intestinal obstruction in our study followed by adhesions and bands (33%), malignancies (17%).

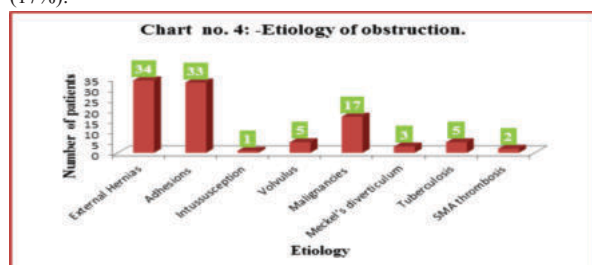


Chart 4

Table 3 :- Distribution Of Patients According To Etiology Of Small Intestinal Obstruction.

Sr. No	Cause of small intestinal obstruction	Total Number of patients (n=78)		Total patients	Percentage
		Male	Female		
1	External hernias	22	12	34	43.58%
2	Adhesions	18	15	33	42.30%
3	Meckel's diverticulum	2	1	3	3.85%
4	Tuberculosis	3	2	5	6.42%
5	Intussusception	0	1	1	1.28%
6	S M A Thombosis	2	0	2	2.57%

Table-4: Distribution Of Patients According To The Etiology Of Large Bowel Obstruction.

Cause of large bowel obstruction	Number of Patients (n=22)		Total patients	Percentage
	Male	Female		
Carcinoma of colon	13	4	17	77.27%
Volvulus	4	1	5	22.73%

In present study out of 34 cases of obstructed hernias 29 cases managed with reduction of hernias with respective repair, while remaining 5 cases managed with bowel resection and anastomosis with repair of hernia. Obstructive bands and adhesions were managed with division of bands and adhesiolysis respectively. 5 out of 17 cases of malignancy were managed with resection and anastomosis of segment involved with or without proximal diversion stoma. In 3 cases of malignancy only biopsy with ileostomy done and 8 cases were managed by biopsy with diversion colostomy and in 1 case only biopsy was taken without any resection or diversion stoma.

Table No. 5: - Duration Of Hospital Stay.

Sr. no.	Hospital stay (in days)	Number of patients (n=100)	Average hospital Stay
1.	0-7 days	37	9.3 days
2.	8-14 days	38	
3.	15-21 days	22	
4.	>21 days	3	

Average hospital stay of patients in our study is 9.3 days. Majority of patients in our study population had duration of hospital stay of 8-14 days and 0-7 days respectively. Average hospital stay of patients in our study is 9.3 days. Wound infection, septicemia and wound dehiscence were most common complication. Post-operative wound infection which was treated by daily dressing of the wound and IV antibiotics according to culture and sensitivity. The overall survival rate and mortality rate in our study is 88% and 12%, respectively.

DISCUSSION:

A hospital based observational study conducted on 100 patients acute intestinal obstruction recruited through convenient sampling within study duration and eligible as per inclusion criteria reported to Department of Surgery, S.P. Medical College, PBM Hospital, Bikaner. In our study, maximum patients were in 51-60 years age group mean age of 50.3 years. Study by Suvendu Shekhar Jena et al 2021⁽⁹⁾ has reported 35 % of cases of intestinal obstruction occur in the age group of 41-60 years with mean age of 50.1 years.

In our study, 36% were- female whereas 64% were male Among previous studies, Suvendu Shekhar Jena et al 2021⁽⁹⁾ study, reported male to female ration of 1.36:1. Adesunkamni AR, et al study 1996⁽¹⁰⁾ reported male to female ratio as 1.7:1 which is similar to that reported in our study.

In our study incidence of small bowel obstruction in our is study 78%. The incidence reported in other studies, 75.27% by Hadi A et al 2010⁽¹¹⁾ study, 85% by Malik AM et al 1991 study⁽¹²⁾, 76% by Markogiannakis H et al 2007⁽¹³⁾. Incidence of small bowel obstruction in our study is comparable with other studies. The incidence of large bowel obstruction in our study is 22%. The incidence reported in other studies, 24.73% by Hadi A et al 2010 study⁽¹¹⁾, 15% by Malik AM et al 1991 study⁽¹²⁾, 68.88% by Ullah S et al 2009⁽¹⁴⁾ study, 24%. By Markogiannakis H et al 2007 study⁽¹³⁾. The incidence of large bowel obstruction in our study is comparable to other studies but low as compared to Ullah S et al 2009⁽¹⁴⁾ study this may be because of small sample size in our study.

The most common cause of intestinal obstruction in our present prospective study is obstructed or strangulated external hernias (34%)

which included (inguinal, femoral, umbilical, Incisional) Second most common cause of intestinal obstruction in our study is Adhesions (33%). In Suwendu Shekhar Jena et al study 2021⁽⁹⁾ the most common cause of intestinal obstruction was adhesions(36.70%) followed by malignancy (17.5%). In Study by B. kirubagaran et al 2019⁽¹⁵⁾ the most common cause of intestinal obstruction was adhesions (26.67%) followed by hernias (23.33%). In Sinha S et al study 2002⁽¹⁶⁾ the most common cause of intestinal obstruction was adhesions(44%) followed by hernias (22%). In Souvik Adhikari et al study 2008⁽¹⁷⁾ the most common cause of intestinal obstruction was hernia (35.96%) followed by malignancy (16.62) and adhesions(15.53%) was the third most common cause in that study.

The average hospital stay of patients in our study is 9.3 days which is comparable with study Suwendu Shekhar Jena et al 2021⁽⁹⁾ with average duration of stay in hospital 9.6 days and Giannopoulos P et al 2007⁽¹⁸⁾ with average duration of stay in hospital 10.4 days.

The overall incidence of post-operative complications in our study is 38%. As compared to other studies it is high, this may be because of small sample size in our study. Also majority of patients in our study are old patients, many patients presented late to the hospital leading to delayed diagnosis and treatment.

Wound infection rate reported in our study is 12% while that reported 12% by Souvik Adhikari et al study 2008,⁽¹⁷⁾ 10% by Bhange S.R.et al study⁽⁹⁾. 12% by Jahangir sarwar khan et al study 2003⁽¹⁹⁾ is 10%, and 12% respectively. Wound infection rate in our study is comparable with other study.

Incidence of septicaemia in our study is 11% while that reported in in 13% Souvik Adhikari et al study 2008⁽¹⁷⁾; 9% by Bhange S.R.et al study⁽²⁰⁾; 4% by Jahangir sarwar khan et al study 2003⁽¹⁹⁾.

Overall mortality rate in our study is 12%. As compared to studies like Suwendu Shekhar Jena et al 2021⁽⁹⁾, Baloch NA et al study⁽²¹⁾ 2009, Malik AM et al study⁽¹²⁾ 2009, Souvik Adhikari et al study⁽¹⁷⁾ 2008, Markogiannakis H et al study⁽¹³⁾ 2002 the mortality rate is higher in our study this may be because of small sample size in our study. Also, most of our patients were from a poor socioeconomic status with a high prevalence of malnutrition; therefore, the morbidity and mortality are likely to be higher. Old age of the patients, delayed presentation of patients to the hospital leading to delayed diagnosis and treatment, associated systemic co-morbid conditions, led to a higher mortality rate in our study.

CONCLUSION

- Early diagnosis of obstruction, careful selection of cases for surgery, skillful operative management, proper technique during surgery and intensive post- operative treatment yield grateful results.
- Poor socioeconomic status, malnutrition, old age, delayed presentation of patients leading to delayed diagnosis and treatment, associated systemic co- morbid conditions adversely affects the final surgical outcome of the patients.

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