

Original Research Article

A retrospective study of acute intestinal obstruction and its management in our institution

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Abstract

Background: Intestinal obstruction is one of the most frequently encountered problems in surgical emergency. Intestinal obstruction is one of the major causes of morbidity and mortality

Aim: Acute intestinal obstruction is one of the most common surgical emergencies. The objective of this paper was to identify various causes of intestinal obstruction, mode of presentation, hemodynamic status, importance of early intervention and importance of viral markers in emergency procedures. Influence of factors like age, sex, previous surgeries in the pathogenesis of intestinal obstruction and complications in acute intestinal obstruction were also discussed.

Materials and methods: The materials for our retrospective study of acute intestinal obstruction were collected from the medical record department of various surgical units in department of general surgery, Stanley medical college. Totally 50 cases were taken for this study with exclusion of age less than 12 years (Pediatric age group). The study was divided into clinical presentation, investigation, management and complications. The results were analyzed based on the following factors like age, sex, symptoms, signs, investigation, probable causative factor, operative findings, procedure and complications.

Results: The study group consists of 50 cases of acute intestinal obstruction in adult age group from 12 years. The common age group was 31-40, common sex was female, commonest cause of acute intestinal obstruction in this study was post operative adhesions (48%) followed by obstructed hernia (18%). The other causes are malignancy (10%), ileo-caecal tuberculosis (8%), intussusception(6%), volvulus (4%), mesenteric ischemia (4%), meckel's band obstruction (2%).

Conclusion: Our study observed still post operative adhesions is the most common cause of acute intestinal obstruction followed by obstructed hernia. The success in the treatment of intestinal

obstruction depends upon early diagnosis and early intervention as well as the patients' hemodynamic status. Lastly this study highlights the importance of using universal precaution in the emergency setting because of the ever increasing number of HIV and HBsAg in our country.

Key words

Acute intestinal obstruction, Gangrene, Hernia, Adhesive band, Ostomy.

Introduction

Acute intestinal obstruction is one of the most frequently encountered problems in surgical emergency. Intestinal obstruction is one of the major causes of morbidity and mortality [1]. It accounts for 10-17% of surgical emergency. Manifestations may range from abdominal distension, constipation, vomiting, and sepsis. Present study was done to identify and analyze the clinical presentation, management and outcome of patient with acute intestinal obstruction along with its etiology and causes of bowel ischemia, necrosis, and perforation [2]. Mortality is decreased because of early intervention and increasing diagnostic technologies like contrast CT. Most of the mortality is seen in older patients, diabetes, respiratory infection and presenting with sepsis. Early diagnosis of intestinal obstruction, skill full operative management, good surgical techniques and intensive post operative care gives very good results. Most of the surgical emergency cases were viral markers positive. Hence this study was undertaken to have details on the above mentioned subjects.

Materials and methods

The materials for our retrospective study of acute intestinal obstruction was collected from the medical record department of various surgical units in department of general surgery, Stanley medical college during the period from 1st January 2015 to 1st January 2016. Totally 50 cases were taken for this study with exclusion of age less than 12 yrs (Pediatric age group). The study was divided into clinical presentation, investigation, management and complications. The results were analyzed based on the following factors like age, sex, symptoms, signs,

investigation, probable causative factor, operative findings, procedure and complications. The patients who are all having sub acute intestinal obstructions managed conservatively were excluded from the study. And only who are all having acute intestinal obstruction which are all managed surgically were studied to establish the pathology of obstruction with the aim to know the mode of presentation, physical findings, radiological findings, operative findings and outcome of acute intestinal obstruction with viral markers. The details of the study were collected from the medical record department.

Results

Incidence of acute intestinal obstruction in adult age group was studied from department of general surgery Stanley medical college, Chennai during the period of 1st January 2015 from 1st January 2016. During the period of 12 months the total admission of acute intestinal obstruction was 82. 50 cases were randomly selected for this study.

As per the table number one, the maximum incidence was seen in age group 31-40 with 19 cases out of 50 cases (**Table – 1**).

As per **Graph – 1**, the incidence was slightly higher in patients due to previous surgeries like LSCS and puerperal sterilization. As per the **Graph – 2**, still adhesive intestinal obstruction 48% due to previous surgeries were the most common cause of acute intestinal obstruction followed by obstructed hernia 18% and malignancy 10%. As per **Graph – 3**, adhesiolysis and herniorraphy was done commonly. Ostomy was commonly done for all malignancy cases with acute intestinal obstruction.

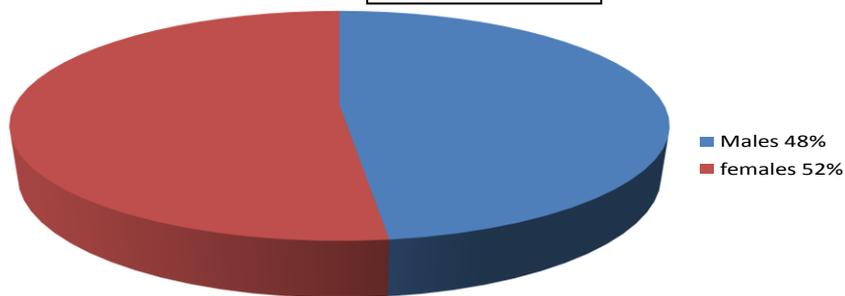
AGE GROUP DISTRIBUTION

table 1

AGE GROUP	TOTAL	MALE	FEMALE
12 - 20	4	2	2
21-30	5	4	1
31-40	19	8	11
41-50	14	4	10
51-60	3	1	2
61-70	4	4	0
71- 80	1	1	0
	50	24	26

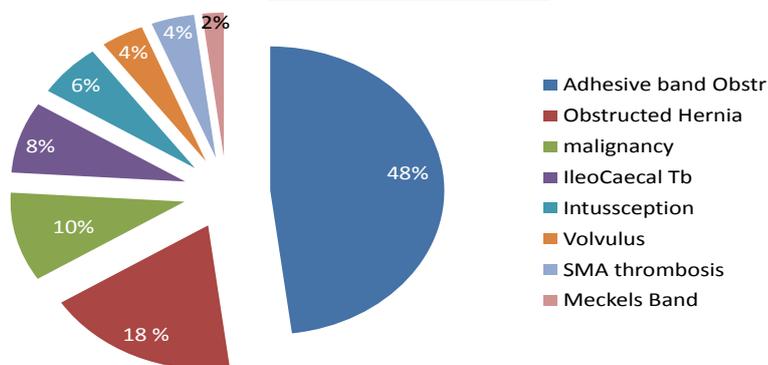
SEX DISTRIBUTION

Graph - 1

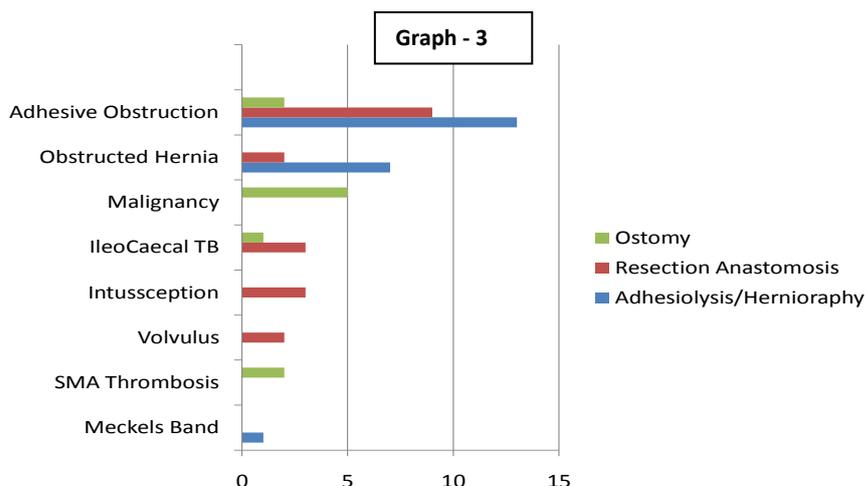


DIAGNOSIS CHART

Graph - 2



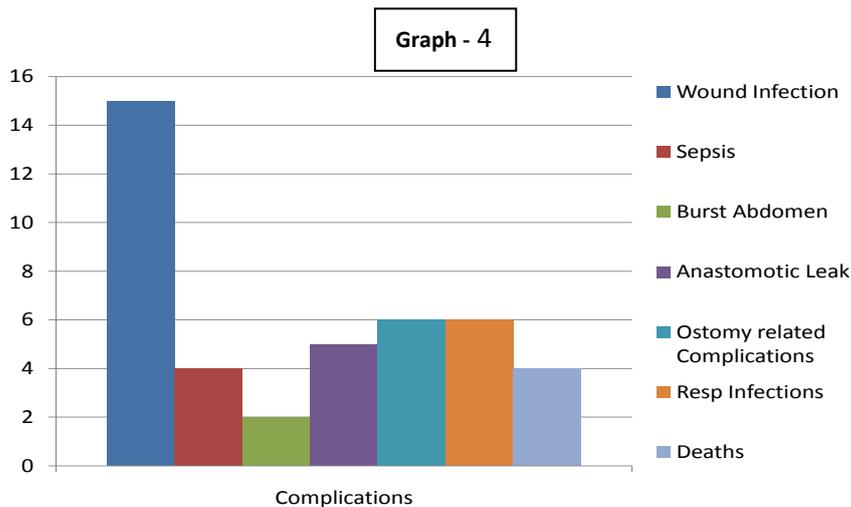
MANAGEMENT



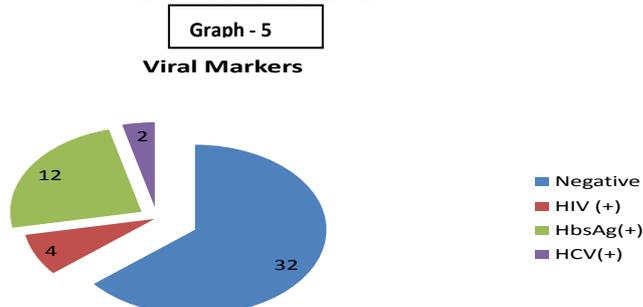
As per **Graph – 4**, wound infection still remains the common post operative complication followed by ostomy related complications like skin excoriation followed by respiratory infections.

As per **Graph – 5**, eighteen cases were positive for viral markers. Four cases were positive for HIV, twelve cases were positive for HBsAg antigen, two cases were positive for HCV.

COMPLICATIONS



Viral Markers



Discussion

Acute Intestinal obstruction continues to be most common surgical emergency. In our study, 50 patients were taken who were admitted in the general surgery dept, Govt. Stanley Medical College during 1st January, 2015 to 1st January, 2016.

Age incidence

In the below mentioned comparison **Table – 2**, the most common age incidence was 41-50 but in our study it was between 31-40 years.

Etiology

In the present study, post operative adhesive intestinal obstruction is the most common cause of intestinal obstruction 48% which is compared with others studyies which were showed

malik[10] 41%, playforth [9] 54%. Although obstructed hernias were 2nd most common cause of intestinal obstruction. So public awareness should be conducted regarding early repair of hernia to prevent the intestinal obstruction as per **Table – 3**.

Clinical features

The clinical features of intestinal obstructions were variable starting from pain abdomen, vomiting, abdominal distension and constipation. In our study pain abdomen was the most common clinical feature 80% followed by abdominal distension 78%, constipation 72% and vomiting 60%. Vomiting is present only in 60% of the patients because of the early approach of the patient to the hospital (**Table – 4**).

Table - 2

AGE INCIDENCE

Age group	Cole GJ[5]	Souvik [3]	Harban [6]	Present study
12-20	10%	9%	10%	8%
21-30	10%	11%	16%	10%
31-40	18%	15%	18%	38%
41-50	16%	24%	15%	28%
51-60	15%	13%	10%	6%
61-70	16%	20%	20%	8%
71-80	9%	8%	5%	2%
81-90	6%	4%	4%	0%

Table - 3

Etiology

Etiology	ARSHAD MALIK [10]	PLAYFORTH[9]	PRESENT STUDY
Adhesive Intestinal Obstruction	41%	54%	48%

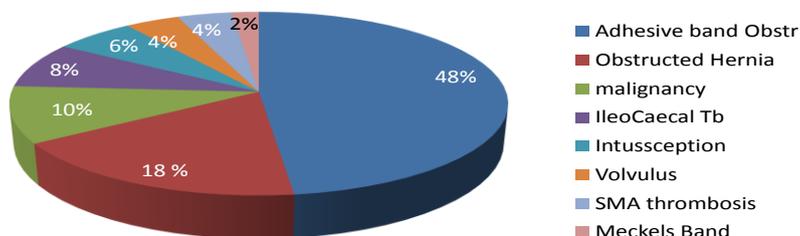
Table - 4

Clinical features

STUDY GROUP	PAIN ABDOMEN	VOMITTING	ABD DISTENSION	CONSTIPATION
PRESENT STUDY	80%	60%	78%	72%
SOUVIK[3]	72%	91%	93%	82%
SARWAR KHAN[4]	100%	92%	97%	97%

Graph - 6

DIAGNOSIS CHART



Laboratory investigation

Among the total study population 28% of the cases were having anemia especially in malignant obstruction cases. Leukocytosis was seen in 60% of patients with gangrene bowel.

Radiology

The Erect abdomen X-ray helps us in the diagnosis of intestinal obstruction as well as in differentiating the small bowel with large bowel obstruction. Multiple air fluid level can be seen

in small multiple intestinal obstruction where as only gas shadows seen in large bowel observation until the ileo-caecal valve is competent. Taneja, et al. report shows 90% of cases with multiple air fluid level and Savage, et al. reports 95% cases with significant findings. In the present study of the 50 cases, 88% of X-ray showed multiple air fluid levels. Contrast study of barium enema may help to locate the obstruction in the colon but in our study contrast study was not done (**Graph – 6**).

Surgical management

Out of 24 cases of adhesive obstruction, 13 cases adhesiolysis and band release done. 9 cases underwent resection and anastomosis, 2 cases were ostomy done due to severe sepsis. Out of 9 cases of obstructed hernia, 7 cases herniorrhaphy with constriction band release done. Only 2 cases underwent resection and anastomosis done. Out of 5 malignant intestinal obstruction all 5 cases were treated by diversion ostomy with tissue biopsy. Out of 4 cases of ileo-caecal TB, 3 cases underwent limited resection and anastomosis. 1 case was managed by resection and ostomy. Out of 3 intussusception cases, all 3 cases were managed by resection and anastomosis. Out of 2 volvulus cases, 2 were managed by resection and anastomosis. Out of 2, SMA occlusion with bowel gangrene were treated by resection and ostomy. 1 cases of meckel's band obstruction were treated by band release.

Complications

Out of 50 cases, 15 cases got wound infected mainly due to intra abdominal pathology and poor bowel preparation. Out of 4 sepsis cases 2 cases were already presented with sepsis, 6cases had respiratory tract infections which was commonly seen in hernia patients and patient with COPD.

Mortality

Frequency of mortality in our cases was 2 cases (4%), one case was SMA thrombosis and another was sigmoid volvulus. The mortality in acute intestinal obstruction was common in patients who developed strangulation and gangrene of the bowel. With all these the age of the patient presence of sepsis co morbidities and type of surgery plays a major role in mortality and also the prognosis of the patient is directly proportional to the duration of symptoms and signs.

Conclusion

Acute intestinal obstruction remains an important surgical emergency in the surgical field. Success in the treatment of acute intestinal obstruction

depends largely upon early diagnosis skillful management and treating the pathological effects of the obstruction just as much as the cause itself. Erect abdomen X-ray is valuable investigation in the diagnosis of acute intestinal obstruction.

Post-operative adhesions are the common cause to produce intestinal obstruction. Clinical radiological and operative findings put together can diagnose the intestinal obstruction. Mortality is still significantly high in acute intestinal obstruction. Lastly this study highlights the importance of using universal precaution in the emergency setting because of the ever increasing number of HIV, HBsAg and HCV in our country.

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