



ORIGINAL RESEARCH PAPER

General Surgery

STUDY OF ACUTE INTESTINAL OBSTRUCTION IN ADULTS

KEY WORDS: Intestinal obstruction, etiology, management

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ABSTRACT

Introduction: Acute intestinal obstruction is one of the commonest and potentially dangerous surgical emergencies in all age groups associated with high frequency of morbidity and mortality if managed inappropriately. Recent studies have shed light upon the non operative management of acute intestinal obstruction. **Methodology:** A prospective observational study of 76 patients with acute intestinal obstruction was carried out from November 2020 to November 2022 in the Department of Surgery at a Tertiary Care Hospital. **Results:** The most common presenting symptom was pain in abdomen (85%). The most common sign elicited in patients with intestinal obstruction was Tenderness (81.5%), distension (57.8%), increased bowel sounds (31.5%), absent bowel sounds (30.2%). The most common etiology was adhesions and bands (39.4%). Followed by Obstructed Hernia (14.4%), Malignancy (11.8%). 34.3% patients were managed conservatively and 65.7% patients underwent surgical procedure. The highest mortality was seen in patients presenting between 6-10 days (46.42%). **Conclusion:** In patients with intestinal obstruction, early diagnosis, good preoperative hydration, rapid tests and early operating intervention are proven to improve survival.

INTRODUCTION:

Acute intestinal obstruction is one of the commonest and potentially dangerous surgical emergencies in all age groups associated with high frequency of morbidity and mortality if managed inappropriately. Early diagnosis is the key to success as the mortality rate rises with each passing hour from the onset of disease.

Acute Intestinal Obstruction can be either due to small bowel or large bowel obstruction. Small Bowel Obstruction is more common and most commonly caused by adhesions. Whereas large bowel obstruction is most often the result of malignancies.[2] In 80% of cases the obstructions occur in the small bowel while 20% in the large bowel.[3]

There are four cardinal features of intestinal obstruction: colicky abdominal pain, abdominal distension, vomiting, and constipation. The presentation of these symptoms is affected by the site and type of obstruction. [13]

During the last few decades, a change in the etiology of acute intestinal obstruction has been noted in the developing countries and this makes it essential that the studies should be conducted periodically in every region to define the local causes with idea of improving surgical health services.

The dictum of “**Never let the sun set or rise in small bowel obstruction**” has made early surgical intervention for intestinal obstruction. Recent studies have shed light upon the non operative management of acute intestinal obstruction.

Although the mortality due to acute intestinal obstruction is decreasing with better understanding of pathophysiology, improvement in radiological diagnostic techniques, fluid and electrolyte correction, much potent antimicrobials, surgical management, and improvement in field of anesthesia. This is further influenced by the clinical setting and related comorbidities.

Therefore in this prospective study we are focusing on various

aspects of acute intestinal obstruction, its etiology, common modes of presentation, management-whether conservative or operative and its complications like surgical site infection, burst abdomen, enterocutaneous fistula formation, post operative lung atelectasis, post operative paralytic ileus, sepsis and death.

MATERIAL AND METHODS:

A prospective observational study of 76 patients with acute intestinal obstruction was carried out from November 2020 to November 2022 in the Department of Surgery at a Tertiary Care Hospital.

The following variables were studied - age, sex, previous history of surgery, comorbid condition, clinical features, management- whether conservative or operative, types of surgical procedures with intraoperative findings, etiological factors for intestinal obstruction and complications. The outcome was studied in terms of morbidity.

All the patients were examined thoroughly, baseline findings were recorded. Signs and symptoms noted. All routine blood investigations were done. X ray abdomen erect, ultrasound abdomen pelvis was done. CT abdomen was done in cases with clinic-radiological dilemma.

All patients were resuscitated with IV fluids, Nasogastric decompression. Broad spectrum antibiotics given.

Patients who were improving were given trial of conservative management for 24 hours.

Patients not improving by conservative management were considered for surgical intervention. Exploratory laparotomy was performed by midline incision and intraoperative findings were noted. The cause of intestinal obstruction was noted and accordingly operative procedure was carried out.

Histopathological examination of the specimen of resection/

biopsy was done wherever necessary to further confirm the diagnosis. In the postoperative period they were monitored and observed for post operative complications like surgical site infection, respiratory complications, enterocutaneous fistula, burst abdomen and managed accordingly. Patients' morbidity and mortality was recorded and were followed up till discharge, death and till 2 weeks after discharge.

OBSERVATION & RESULTS:

Table 1 – Presenting Symptoms

Presenting complaints	No. of patients	Percentage
Abdominal pain	65	85.5
Vomiting	52	68.4
Abdominal distension	36	47.3
Constipation	51	67.1

Similar findings were seen in *Priscilla S B et al, Nasiruddin et al, Shivakumar CR et al and Deolekar et al*

Table 2 – History Of Operative Procedure

History of Operative Procedure	Number	Percentage
Yes	27	35.52
No	49	64.47

Similar findings were seen in *Tiwari et al*

Table 3 – Etiology Of Obstruction

Etiology	Number	Percentage
Adhesions and bands	30	39.4
Obstructed Hernia	11	14.4
Neoplastic	9	11.8
Paralytic Ileus	9	11.8
Volvulus	8	10.5
Mesenteric Ischemia	5	6.5
Intussusception	2	2.6
Fecal Impaction	1	1.3
Stricture	1	1.3
Total	76	100

Similar findings were seen in *Tiwari et al, Nasiruddin et al, Shivakumar CR et al and Deolekar et al*

Table 4 – Management

Management	Number	Percentage
Conservative	26	34.3
Operative	50	65.7
Total	76	100

Similar findings were seen in *Deolekar et al, Tiwari et al and Sharif et al*

Table 5 – Operative Procedure Done

Procedure	Number	Percentage
Resection with stoma	12	30
Hernia Repair	6	12
Adhesiolysis	14	28
Resection Anastomosis	8	16
Stoma without resection	5	4
Excision of Band	2	4
Excision of Submucous lipoma	1	2
Meckel's Diverticulectomy	1	2

Similar findings were seen in *Shivakumar CR et al and Deolekar et al*

Table 6 – Complications

Complication	Number	Percentage
Suture Line Gape	8	38.0
Burst Abdomen	5	23.8
Enterocutaneous fistula	4	19.0
Ileus	2	9.5
Respiratory Complications	1	4.76
Reexploration	1	4.76

Similar findings were seen in *Tiwari et al, Shivakumar CR et al*

and *Valarmathi et al*

Table 7 - Mortality

Duration of Symptoms	Death	Percentage
< 1 day	00	00
2-5 days	04	46.42
6-10 days	01	10.71
>10days	03	42.85
Total	08	100

DISCUSSION:

1. Age and sex incidence

19.72% belongs to 41-50 followed by 18.70% in 50-60 years age group and mean age was 48.6 yrs. Male preponderance was seen in the ratio of 2.45. It was similar in other studies

3. Symptoms:

The most common presenting symptom was pain in abdomen (85%) followed by vomiting and constipation and then least common was distension of abdomen.

Similar findings were seen in *Priscilla S B et al, Nasiruddin et al, Shivakumar CR et al, and Deolekar et al.*

On the other hand, *Sharma et al*, in their study found that most patients presented with abdominal distension (88%) followed by obstipation (87%), abdominal pain and nausea/vomiting.[14].

According to *Tiwari et al*, pain abdomen was present in 53.33% of cases, whereas vomiting in 78.33% cases. Distension was present in 90% and constipation in 86.6 % of the cases.[7]

4. Signs:

Most common sign elicited in patients with intestinal obstruction was Tenderness, which was seen in 81.5%, distension in 57.8%, increased bowel sounds in 31.5%, absent bowel sounds in 30.2% patients.

Nasiruddin et al found that the most common signs were tachycardia (68%) followed by visible intestinal peristalsis (44%) and the least common signs is rigidity (28%) and mass per abdomen (24%) [4]

Deolekar et al found that tenderness (44%) was seen in most patients, f/b increased bowel sounds (38%). Mass was seen in per rectal examination in 3% patients. [6]

Chitumalla P K et al found that most common sign was tenderness (100%), followed by increased bowel sound 50%, absent bowel sound (50 %), guarding and rigidity 22%, visible peristalsis 16%. [18]

Results of this study are in correlation with above studies.

5. Previous history of operative procedures:

Around 35% patients had a previous history of operative procedure.

According to *Tiwari et al*, 40 (66.66%) patients had no previous history of abdominal surgery.[7]

In *Malik et al*, it was found that Maximum numbers of patients with adhesive obstruction (60%, n= 57) had a history of appendectomy and other abdominal operations during the last six months to one year. [17]

6. Bowel Involved:

It was observed in this study that small bowel was more commonly involved than large bowel.

Most of the cases of small bowel obstruction were due to adhesions and most of the cases of large bowel obstruction

were due to malignant growths.

Similar findings were seen in other studies

7. Etiology:

The most common etiology was adhesions and bands seen in 30 cases (39.4%) . 2nd most common was Obstructed Hernia 14.4%. Malignancy seen in 11.8% cases confirmed histopathologically (adenocarcinoma). Other causes - Paralytic ileus (11.8%), Volvulus (10.5%) SMA thrombosis (6.5%). 2 patients had intussusception (lead point- Meckel's diverticulum and submucous lipoma).

Deolekar et al suggested that the most common cause of intestinal obstruction encountered in our study was postoperative adhesions followed by paralytic ileus, carcinoma, intestinal tuberculosis and obstructed hernia in descending order of frequency. [6]

In *Priscilla et al* obstructed inguinal hernia was the most common cause followed by adhesive obstruction. [8]

In *Shivakumar CR et al*, most common case of obstruction was post-operative adhesions(40%) followed by obstructed hernia (22%). [5]

Our study was in concordance with above study

8. Management:

In our study, 34.3% patients were managed conservatively and 65.7% patients underwent surgical procedure.

In *Deolekar et al*, surgical intervention was required in 62.5% cases. [6]

In *Tiwari et al*, 41% cases were managed conservatively. [7]

9. Type of Operative Intervention:

In our study, Adhesiolysis was the most common procedure done.

In *Shivakumar CR et al* most common procedure done was Adhesiolysis(38%) followed by resection and anastomosis (34%). [5]

In *Deolekar et al*, Adhesiolysis and resection anastomosis were the most common surgical procedures performed. [6]

In *Tiwari et al* Resection anastomosis was the most common 45.7%), followed by adhesiolysis, (14%) and band excision (11.42%). [7]

In *Daddenawar et al* most common procedure for small bowel was adhesiolysis and large bowel was resection anastomosis. [11]

10. Complications:

The results of this study showed that surgical site infection with suture line gape was most common complication 38% followed by burst abdomen 23.8%. Enterocutaneous fistula was seen in 4 cases (19%). 1 patient required re exploration due to anastomotic leak.

In *Deolekar et al*, most common complication was septicemia, respiratory tract infection and wound infection. [6]

In *Tiwari et al* observed that wound infection, burst abdomen, bowel fistula and death due to respiratory tract infection, septicaemia were a few common complications encountered. [7]

In *Shivakumar CR et al* Surgical site infection was most common complication encountered (16%) followed by Septicemia, (8 %). [5]

In *Valarmathi et al* most common complication was surgical site infection [12]

11. Duration of symptoms in relation to mortality:

Hussain F et al reported that most patients presented (71%) within less than 10 days while patients with acute onset of symptoms were 72%.

In our study the highest mortality was seen in patients presenting between 6-10 days (46.42%).

CONCLUSION.:

Earlier diagnosis and timely intervention are associated with excellent prognosis.

The poor outcome of the disease was due to late presentation to the hospital.

In conclusion, in patients with intestinal obstruction, early diagnosis, good preoperative hydration, rapid tests and early operating intervention are proven to improve survival.



Obstructed Incisional Hernia



Xray Abdomen Erect - coffee bean sign - Sigmoid volvulus



Xray Abdomen erect - multiple air fluid levels suggestive of intestinal obstruction



Gangrenous small bowel due to Superior mesenteric artery thrombosis



Gangrenous ileal segment in an obstructed incisional hernia



Suture line gape

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