

**Original Research article:**

## **Study of incidence and Etiology of Intestinal Obstruction**

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### **Abstract:**

**Introduction:** Acute intestinal obstruction is the commonest life threatening emergencies all around the world requiring emergency management. It occurs when there is interruption in the forward flow of the intestinal contents. This interruption can occur at any point along the length of the gastrointestinal tract i.e. small bowel or large bowel obstruction.

**Materials and Methods:** It was prospective study of patients admitted to our hospital during the period January2012 to December 2012, with a diagnosis of acute intestinal obstruction. The sample size was estimated with the help of expert using random sampling technique. All patients, including those who did not require surgical intervention, were closely monitored.

**Results:** Complication in the post-operative period occurred in 10 patients (28.58%). Of these,6 patients(17.14%) had single complications while the remaining 4 (11.43%) encountered more than one complication. The most common complication was wound infection, occurring in 7 patients and all of this required closure by secondary suturing. Prolonged ileus(more than 72h) was noted in 4 patients. Basal atelectasis was noted in 6 patients, most of them were elderly aged patients. In this case series, the mortality rate was 5.71% (2 patients). Of these, none of the patients died while on conservative management.

**Conclusion:** Acute intestinal obstruction is a major cause of mortality with adhesions being the most common cause.

### **Introduction**

Acute intestinal obstruction is the commonest life threatening emergencies all around the world requiring emergency management. It occurs when there is interruption in the forward flow of the intestinal contents. This interruption can occur at any point along the length of the gastrointestinal tract i.e. small bowel or large bowel obstruction.<sup>1</sup> Based on nature, severity, location and aetiology several terms are used to describe bowel obstruction e.g. functional or dynamic (due to abnormal intestinal pathology) and mechanical or adynamic (acute or chronic). Bowel obstruction occurs when the normal propulsion and passage of intestinal contents cannot occur for a variety of reasons. This obstruction can involve the small intestine or the large intestine. It can occur due to systemic alterations in metabolism, electrolyte balance, or neuroregulatory mechanisms involving both small and large intestine.<sup>1</sup> Intestinal obstruction is the most common surgical emergency and accounts for about 20%; and 80% of these cases will have small bowel obstruction. <sup>2</sup> The aim of our study is to provide complete etiological description of acute intestinal obstruction at a tertiary care hospital in Maharashtra.

### **Materials and Methods**

It was prospective study of patients admitted to our hospital during the period January2012 to December 2012, with a diagnosis of acute intestinal obstruction. The sample size was estimated with the help of expert using random sampling technique.

All patients, including those who did not require surgical intervention, were closely monitored.

### **Inclusion criteria:**

Patients presenting with acute pain abdomen, vomiting, constipation, abdominal distension, or irreducible abdominal swelling were included in the study.

Diagnosis was made keeping in mind these above symptoms, along with radiological findings, clinical examination and per rectal examination.

**Exclusion criteria:**

The non willing patients were excluded from present work .

**Ethical Considerations:** Informed and written consent was obtained from all patients before the start of the study.

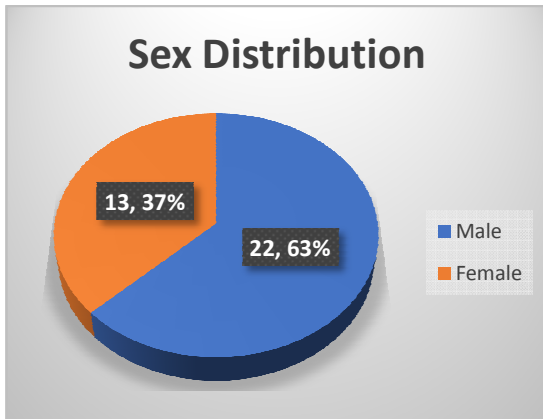
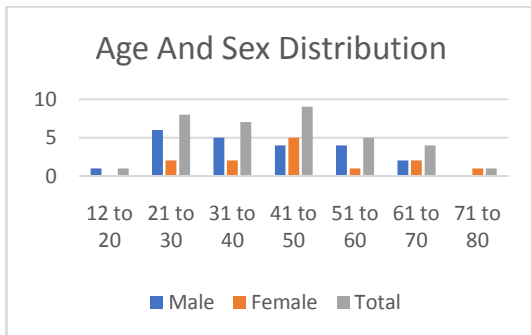
**Results**

Incidence:

Out of 720 patients admitted in the hospital on specific days of the week, over 1 year (January 2013 to December 2013), acute intestinal obstruction was diagnosed in 35 patients (4.86%).

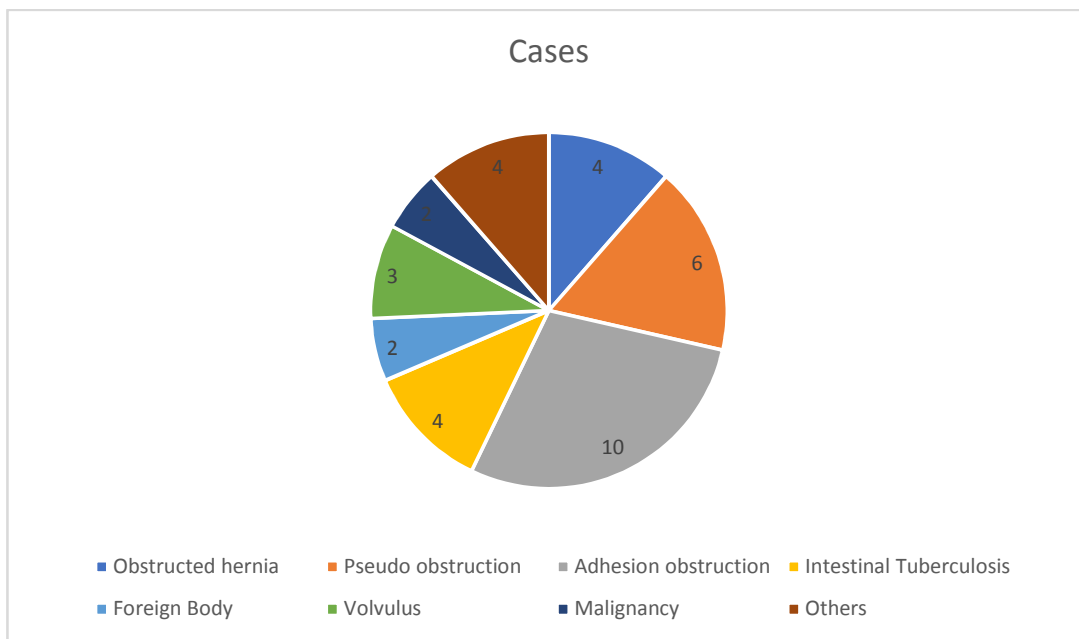
Sex and Age Distribution

Age Range (years)	No. of patients
12-20	1 (M:1; F:0)
21-30	8 (M:6; F:2)
31-40	7 (M:5; F:2)
41-50	9 (M:4; F:5)
51-60	5 (M:4; F:1)
61-70	4 (M:2; F:2)
71-80	1 (M:0; F:1)



Etiology

Etiology	No. of patients	Percentage
Obstructed Hernia	4	11.43
Pseudo-obstruction	6	17.14
Adhesion obstruction	10	28.58
Intestinal Tuberculosis	4	11.43
Foreign Body	2	5.71
Volvulus	3	8.57
Malignancy	2	5.71
Others	4	11.43



**Management**

Patients were either conservatively managed (7 patients; 20%) or operated on an emergency basis (28; 80%)

Patients were taken up for surgery if the following criteria was fulfilled:

Tachycardia, Hypotension, Abdominal Distension, along with increasing tenderness, features of toxicity like Fever, leukocystosis, and if conservative management was not effective.

Etiology	Management		Outcome	
	Conservative	Surgery	Complications	Death
Obstructed Hernia	0	4	2	0
Pseudo-obstruction due to Hyponatremia	5	1	1	0
Adhesion Obstruction	0	10	3	0
Intestinal Tuberculosis	2	2	0	1
Foreign Body	2	2	0	0
Volvulus	0	3	2	1
Malignancy	1	1	1	0
Miscellaneous	3	2	1	0

#### Morbidity

Complication in the post-operative period occurred in 10 patients(28.58%). Of these,6patients(17.14%) had single complications while the remaining 4 (11.43%) encountered more than one complication. The most common complication was wound infection, occurring in 7 patients and all of these required closure by secondary suturing. Prolonged ileus(more than 72h) was noted in 4 patients. Basal atelectasis was noted in 6 patients, most of them were elderly aged patients.

#### Mortality

In this case series, the mortality rate was 5.71% (2 patients). Of these, none of the patients died while on conservative management.

2 patients developed sepsis in the post-operative period , and died due to multi-organ failure.

#### Discussion

Acute intestinal obstruction is the most common surgical emergency worldwide. Of these, adhesions appear to be the most common cause of acute intestinal obstruction in Western world as well as parts of Asia and Middle East. <sup>3</sup> Similarly, in our study, adhesions appeared to be the most common cause of intestinal obstruction. The second most common cause was pseudo-obstruction, followed by obstructedhernias. Pain abdomen, vomiting, distension and constipation are the four cardinal features of intestinal obstruction, present in most of the cases.

Tenderness, guarding, rigidity, rebound tenderness and shock are the cardinal features of strangulated intestinal obstruction. Intravenous fluids and electrolytes, gastrointestinal aspiration, antibiotics and then appropriate surgery are still the main stay of the treatment. Early operation is mandatory to avoid the development of peritonitis and systemic sepsis associated with multi-system organ failure.<sup>4,5</sup>

Arshad M. Mallick et al. (2010) & Foster N.M (2006) also found the similar results in their study. In this series 65.9% of cases were male, with a male to female ratio 2:1 approximately. Arshad M. Mallick also found that male constitute 74%. Maximum number of cases belonged to low socio economic group (68.3%).<sup>6</sup>This may be

due to the fact that these people were either underfed or malnourished. Majority of patients were non-vegetarian (65.9%) & (41.5%) had the habit of chewing tobacco.<sup>7,8</sup> Remarkably 21.9% of cases had no addiction. Vomiting and abdominal distension (95.1%) were the most common complaint on presentation, followed by abdominal pain (92.7%) and constipation (90.2%).

Arshad M. Mallick (2010) in his study also found that the most common features on presentation was distention of abdomen (87%), vomiting (73%) and absolute constipation(88%). Dehydration and abdominal tenderness were recorded in most of the cases (95.1%) followed by features of shock (68.2%) and emaciation (60.1%).

Arshad M. Mallick also noted pain in abdomen in 75% of cases and dehydration in 67% of the cases. Most of the patients presented between 2nd to 4th day (65.8%). There were 4 deaths in this group. With delayed presentation the mortality and morbidity is expected to be high. The site of obstruction in majority of cases was in small intestine(85.4%).<sup>9</sup>

Adhesion was the most common aetiological factor (65.9%). Similar findings were noted by Ellis. H & Arshad m mallik. In most of the case obstruction was simple 68.3%).<sup>10</sup>

Gangrene was noted in 19.5% of cases. While perforation and peritonitis were seen in only 12.2% of cases.

### **Conclusion**

Acute intestinal obstruction is a major cause of mortality with adhesions being the most common cause.

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