# SPECTRUM OF DISEASES IN ACUTE INTESTINAL OBSTRUCTION

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## ABSTRACT

***Objective:*** To determine the etiological spectrum of acute intestinal obstruction in our clinical setup Military Hospital Rawalpindi.

***Study Design:*** Descriptive study.

***Place and Duration of Study:*** Surgical department of Military Hospital, Rawalpindi from Jul 2012 to Jul 2013, over a period of about 1 year.

***Material and Methods:*** A total of 120 patients with acute mechanical intestinal obstruction who underwent laparotomy were included in our study while those with non-mechanical intestinal obstruction like history of trauma and paralytic ileus were excluded from the study. All the patients were selected by non-probability purposive sampling technique. Emergency laparotomy was done and operative findings were recorded.

***Results:*** A total of 120 patients with mechanical intestinal obstruction were included in this study out of which 93 (69.17%) were female and remaining 27 (30.83%) were males. Male to female ratio was 1:2.24. Age range of patients was 22-85 years. Out of 120 patients operated for acute intestinal obstruction post-op adhesions were found in 37 (30.83%) patients followed by intestinal tuberculosis in 23 (19.17%) patients, obstructed inguinal hernias in 13 (10.83%), gut malignancies in 15 (12.5%) , Meckel's diverticulum with bands in 7 (5.83%), volvulus in 7 (5.83%), perforated appendix in 6 (5%), intussusception in 2 (1.7%), inflammatory bands in 5 (4.17%), trichobezoar and faecal impaction in 2 (1.7%) while in 3 (2.5%) patients no definite cause was found.

***Conclusion:*** Post-op adhesions are the commonest cause of mechanical intestinal obstruction in our setup followed by intestinal tuberculosis as second most common clinical pattern of presentation.

**Keywords:** Intestinal obstruction (mechanical), Intestinal TB, Post-op adhesions.

## INTRODUCTION

Acute bowel obstruction is a global issue on surgical floor and requires special attention of surgeons today. Though a lot of work has been done on this antiquity, it still dares the clinical judgment and diagnostic abilities of the surgeons to a limit.

Acute mechanical intestinal obstruction is mechanical blockage arising from a structural abnormality that presents a physical barrier to the progression of gut contents[1]. It is the most commonly encountered surgical emergency and is associated with high mortality[2]. About 15% of the patients admitted for acute abdomen have intestinal obstruction and small bowel obstruction accounts for 80% of these cases worldwide[3]. The severity of the disease depends on duration and site of obstruction. When occurring in the upper gastrointestinal tract such as in the esophagus, stomach or duodenum, it tends to have a less urgent presentation, whereas in the small bowel and colon it often presents as a medical emergency[4]. Classically there are four cardinal features of mechanical intestinal obstruction i.e. acute abdomen, distension, vomiting and constipation[5]. A dreadful outcome of intestinal obstruction is strangulation leading to bowel ischemia, necrosis and ultimately perforation. Early diagnosis of strangulation can reduce mortality rate. 6 2 Mechanical intestinal obstruction is caused by a number of external and internal processes including intestinal tuberculosis, adhesions, neoplasms, inflammatory bowel disease, internal hernias, volvulus bowel strictures, diverticulitis, fecal impaction[7]. Intestinal obstruction can be mechanical (dynamic) or non-mechanical (adynamic) obstruction in which there is

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absence of true peristalsis[8]. Intestinal obstruction can also be classified as partial or complete, simple or complicated. Partial obstruction allows the passage of some liquid contents and gas whereas complete obstruction does not allow any bowel contents to pass through point of obstruction. Unlike simple obstruction, in complicated obstruction blood circulation to a segment of bowel is compromised that results in ischemia, infarction, and perforation[9]. The regional and timely fluctuation in the spectrum of disease causing intestinal obstruction emphasizes on regular studies to evaluate the causes that will be helpful in diagnosis and therapeutics. The morbidity and mortality by intestinal obstruction can be reduced by early diagnosis and prompt treatment. Now a days laproscopy has revolutionized surgical field and aids in early diagnosis and treatment of this condition.

## MATERIAL AND METHODS

This descriptive study was carried out at surgical department of Military Hospital, Rawalpindi from Aug 2012 to Aug 2013, over a period of about 1 year. A total of 120 patients with various patterns of presentation who were admitted to surgical unit or referred to surgical department with acute mechanical intestinal obstruction and underwent laparotomy were included in our study while those with non-mechanical intestinal obstruction like history of trauma and paralytic ileus were excluded from the study. The diagnosis of intestinal obstruction was made on the basis of detailed clinical history, physical examination, x-ray abdomen and ultrasound abdomen. Exploratory laparotomy was planned. Other pre-op investigations for fitness for anesthesia was carried out i.e complete blood picture, electrolyte, urea, creatinine, x-ray chest and ECG. Informed written consent was taken from each patient and was asked about their condition and prognosis.

Exploratory laparotomy was done and operative findings were recorded by a checklist. Biopsy specimen was taken for histopathology where required. Data was analyzed using SPSS version 21. Descriptive statistics were used to describe the results.

## RESULTS

A total of 120 patients with mechanical intestinal obstruction were included in this study out of which 93 (69.17%) were females and remaining 27 (30.83%) were males with male to female ratio of 1:2.24. Age range of patients was 22-85 years with average age of 51.89 years (SD=12.59). Out of 120 patients operated for acute intestinal obstruction post-op adhesions were found in 37 (30.83%) patients followed by intestinal TB in 23 (19.17%) patients, obstructed inguinal hernias in 13 (10.83%), gut malignancies in 15 (12.5%) , Meckel's diverticulum with bands in 7 (5.83%), sigmoid volvulus 7(5.83%), perforated appendix in 6(5%), intussusception in 2 (1.7%), Inflammatory bands in 5 (4.17%), trichobezoar and faecal impaction in 2 (1.7%) while in 3 (2.5%) patients no definite cause was found. (Table-1)

**Table-1: Description of causes of intestinal obstruction (n=120).**

| Causes | Frequency n (%) |
|---|---|
| Post-op adhesions | 37 (30.83%) |
| Intestinal tuberculosis | 23 (19.16%) |
| Obstructed inguinal hernias | 13 (10.83%) |
| Gut malignancies | 15 (12.5%) |
| Meckel's diverticulum with bands | 7 (5.83%) |
| Sigmoid volvulus | 7 (5.83%), |
| Perforated appendix | 6(5%) |
| Inflammatory bands | 5 (4.17%) |
| Intussusception | 2 (1.7%) |
| Trichobezoar and faecal impaction | 2 (1.7%) |
| No definite cause | 3 (2.5%) |

## DISCUSSION

Intestinal obstruction is one of the commonest surgical emergencies faced by surgeons today. Though a lot of work has been done on it, still it is challenging for surgeons from diagnostic and therapeutic point of view. Patient usually presents with acute abdomen, abdominal distension, vomiting and constipation. However, causes are of diverse origin and vary from region to region. In our study post-op adhesions (38.83%) were the leading cause followed by intestinal tuberculosis (19.17%), inguinal hernias (10.83%), gut malignancies (12.5%) including CA colon and CA rectum. Choudary Azam and also has similar findings. They also reported post-op adhesions as leading cause of intestinal obstruction followed by intestinal tuberculosis[10]. Similarly in a study by Mohammad et al, post-op adhesion was the leading cause of intestinal obstruction[11]. Same spectrum of disease was observed by Lawal et al Dervisoglu et al and Markogiannakis at el in their studies[12-14]. They also found adhesions as commonest cause of intestinal obstruction.

Adhesions are fibrous bands of scar tissue that form between internal organs and tissues, joining them together abnormally. They usually form after pelvic or abdominal surgery and are a frequent cause of intestinal obstruction. Intra-abdominal adhesions between previous abdominal scar and underlying organ occur commonly as a result of laparotomy[15]. Although not commonly recognized, the incidence ranges between 55% and 95% and commonly occur after abdominal or pelvic surgery[16]. They are identified as primary cause of chronic pelvic pain in 13-26% of the females. Patients with midline abdominal incisions had more adhesions (5%) than those with Pfannestiel incisions (27%). Patients with midline incisions done for gynecological indications had more adhesions (42%) than did patients with abdominal incisions performed for obstetric indications (22%)[15]. In recent years preventive strategies including microsurgical techniques, unpowdered gloves, extensive irrigation, adhesion reducing agents such as anti-inflammatory agents, peritoneal instillates and surgical barriers are in use for prevention of adhesions[17].

Intestinal obstruction remains one of the most common surgical emergency. Most of the cases are treated conservatively, but if conservative management fails then laparotomy is done. However with the advent of minimal invasive surgery, the need for laparotomy is being challenged[18]. The type of treatment and surgical procedure depends upon the underlying cause which are of diverse origin.

## CONCLUSION

The cause of intestinal obstruction is different in different parts of the world. However, post-op adhesions and intestinal tuberculosis are still a leading cause of mechanical intestinal obstruction in our clinical setup.

## CONFLICT OF INTEREST

The authors of this study reported no conflict of interest.

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