



A CLINICAL STUDY OF ACUTE INTESTINAL OBSTRUCTION IN ADULTS

Dr. Archna Shyam	PG Resident, Department of Surgery, Gajra Raja Medical College & J.A.Group of Hospitals, Gwalior, MP
Dr. Himanshu Chandel	Associate Professor, Department of Surgery, Gajra Raja Medical College & J.A.Group of Hospitals, Gwalior, MP
Dr. Rajesh Baghel	Associate Professor, Department of Radiodiagnosis, Gajra Raja Medical College, & J.A Group of Hospitals, Gwalior, MP
Dr Rakesh Darbar*	Associate professor , Department of surgery Sunderlal patwa Government medical college Mandsaur MP *Corresponding Author

ABSTRACT

Background & Methods: The aim of the study is to Clinical Study of Acute Intestinal Obstruction in Adults. On admission detailed history regarding age and sex, onset, duration and progress of the symptoms were recorded from the patients. If patient is not in a condition to give history then it was recorded from the relatives or from accompanying persons. **Results:** The causes of small bowel obstructions show a diverse range of etiologies among male and female patients. Obstructive inguinal hernia was a cause exclusively in males, with 7 cases reported and none in females. Meckel's diverticulitis was equally distributed, affecting 2 males and 2 females. Adhesions were a common cause for both genders, affecting 7 males and 6 females. BAND (Bands) was reported only in females, with 4 cases. **Conclusion:** In the present study, 86.2% had abdominal pain, 81.9% had abdominal distension, 65.3% had vomiting, 61.72% had obstipation were majority of symptoms observed during the study. In the present study, 44.2% had abdominal tenderness, 43.10% had decreased bowel sound, 30.3% had increased bowel sound were majority of sign observed during the study. 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, skilful management and treating the pathological effects of the obstruction just as much as the cause itself **Study Design:** Observational Study.

KEYWORDS : Clinical, Acute, Intestinal, Obstruction & Adults.

INTRODUCTION

Bowel obstruction is a serious surgical condition that occurs when the normal flow of intestinal contents is blocked, preventing the passage of food, fluids, and gas. Intestinal blockage can occur in various parts of the digestive tract, including the small intestine (resulting in small bowel obstruction), large intestine (leading to large bowel obstruction), or simultaneously affecting both segments (resulting in generalized ileus).[1] Acute intestinal obstruction is classified based on multiple factors, including the time of presentation, duration of obstruction (acute or chronic), extent of obstruction (partial or complete), and the type of obstruction (simple, closed-loop, or strangulation). [2] The symptoms of bowel obstruction vary widely, ranging from mild abdominal discomfort, distension and constipation to severe pain, vomiting and life-threatening complications like hypovolemic or septic shock.[3] The etiology of small bowel obstruction varies from adhesions which are seen in maximum number of cases followed by strangulated hernia. Other causes of small bowel obstruction are malignancy, volvulus.[4] The treatment plan is established based on a combination of clinical evaluation, biochemical tests, and radiological imaging, such as USG-WA, Abdominal X-ray and computed tomography (CT) scans, which are integral to the initial diagnostic process due to their accessibility and affordability.[5] The majority of mortality occur among the elderly who receive delayed treatment and have underlying health conditions such as diabetes mellitus, chronic obstructive pulmonary disease (COPD), and cardiovascular disease.[6]The introduction of antibiotics, improved gastrointestinal decompression techniques, and advanced surgical principles has led to a significant shift in treatment strategies, resulting in shorter hospital stays and a move away from staged procedures towards more comprehensive and effective care.

Diagnosing bowel obstruction is relatively straightforward, but identifying the underlying cause can be challenging, except in cases of obvious causes like postoperative

adhesions or external hernias.[7] The treatment of intestinal obstruction has undergone significant advancements over the past two centuries, with a concerted approach involving timely diagnosis, skilled surgical intervention, precise technique, and comprehensive postoperative care leading to improved outcomes. Additionally, an erect abdominal X-ray is a valuable diagnostic tool for identifying acute intestinal blockage, as evidenced by various studies. [8]

MATERIAL AND METHODS

Present study was carried out in the department of General Surgery, GRMC Gwalior, a tertiary care teaching institute and Hospital. This is a prospective study. The present study was conducted over a period of 18 months.

During the study period, 86 consecutive adult patients (Patients aged between 15 and 50 years) admitted with clinical and radiological evidence of acute intestinal obstruction, undergoing surgical intervention, regardless of gender were included. Patients who met inclusion criteria were requested to sign a written informed consent form before being enrolled into the study.

Thorough clinical examinations were done in relation to abdominal pain, abdominal distension, vomiting, constipation, obstipation, guarding, rigidity, tenderness, lump in abdomen, obstructed hernia, per rectal bleeding. Per rectal examination was done in each and every patient to rule out any anorectal pathology.

Inclusion Criteria

1. Patients in the age group of up to 50
2. Patients with diagnosis of acute intestinal obstruction
3. Patients willing to give well informed consent

Exclusion Criteria

1. Patients age group (>50 year)
2. Paediatric age < 15year
3. Patients on oral anticoagulants

RESULT

Table 1: Distribution of Acute Intestinal Obstruction According to Different Age Group

Age Group	n	%
15-20 years	5	5.8
21-25 years	9	10.5
26-30 years	11	12.8
31-35 years	8	9.3
36-40 years	16	18.6
41-45 years	14	16.3
46-50 years	23	26.7
Total	86	100.0

Breakdown of cases according to different age groups. The table categorizes the number of cases (n) and their respective percentages (%) within each age group. The age groups range from 15-20 years to 46-50 years, with a total of 86 cases overall. Among the age groups, the highest representation is seen in the 46- 50 years category, comprising 26.7% of the total cases. This is followed by the 36-40 years age group, accounting for 18.6%. The distribution gradually decreases in younger age groups, with the 15-20 years group having the lowest representation at 5.8%. This table helps in understanding the distribution of cases across different age ranges, providing insights into how certain medical conditions or diagnoses may vary with age. It highlights the diversity of the study population and can guide further analysis into age-specific factors influencing health outcomes.

Table 2: Distribution of Symptoms in Acute Intestinal Obstruction

Symptoms	N	%
Abdominal Pain	74	86.2%
Abdominal Distension	70	81%
Vomiting	56	65.3%
Obstipation	53	61.72%
Constipation	23	27%
Irreducible Hernia	7	8.3%
PR Bleeding	6	7.4%

The distribution of symptoms among the patients is detailed in Table. Abdominal pain is the most common symptom, reported by 74 patients, accounting for 86.2%% of the total symptom occurrences. Abdominal distension follows closely, affecting 70 patients (81%). Vomiting is experienced by 56 patients, making up 65.3%% of the cases, while obstipation affects 53 patients (61.7%%). Constipation is noted in 23 patients (27%%). Less common symptoms include irreducible hernia, observed in 7 patients (8.3%%), and PR bleeding, reported by 6 patients (7.14%).

Table 3: Distribution of Signs in Acute Intestinal Obstruction

Signs	N	%
Abdominal Tenderness	38	44.2%
Decreased or Absent Bowel sound	37	43.1%
Increased bowel sounds	26	30.3%
Abdominal mass/Lump	11	12.8%

Presence of Bowel sound	9	10.5%
Palpable bowel loop	8	9.5%
Groin swelling	7	8.1%
Abdominal guarding/rigidity	3	3.4%
Visible peristalsis	2	2.3%

A distribution of signs observed among cases. The most prevalent sign is Abdominal Tenderness, reported in 38 cases, which accounts for 44.24%of all cases. Decreased or Absent Bowel Sounds follows closely with 37 cases (43.10%), indicating a significant proportion of cases with altered bowel sounds. Increased Bowel Sounds are noted in 26 cases (30.3%%), suggesting a notable frequency of hyperactive bowel sounds among the studied cases.

Abdominal Mass or Lump is observed in 11 cases (12.8%%), while the Presence of Bowel Sounds and Palpable Bowel Loop are reported in 9 cases (10.5%) and 8 cases (9.5%), respectively. Groin Swelling is noted in 7 cases (8.1%), indicating another visible sign among the cases studied. Abdominal Guarding or Rigidity and Visible Peristalsis are less frequently observed signs, reported in 3 cases (3.4%%) and 2 cases (2.3%%), respectively.

Table 4: Distribution of Comorbidities in Acute Intestinal Obstruction

Comorbidities	N	%
No Comorbidities	32	37.4
Smoking/Alcohol	15	17.44
Past surgery	9	10.47
Tuberculosis	8	9.30
Diabetes Mellitus	6	6.98
NSAID User	3	3.49
Chronic liver disease	1	1.16
COPD	7	8.14
HTN	5	5.8

A significant portion of cases (43.02%) presented without any comorbidities. Smoking/alcohol use was noted in 17.44% of cases, while past surgery history was reported in 10.47% of cases. Known case of Tuberculosis (9.30%) and COPD (8.14%) were also prevalent comorbidities. Less common were diabetes mellitus (6.98%), NSAID use (3.49%), and chronic liver disease (1.16%). These findings underscore the importance of assessing comorbid conditions in the management of bowel obstructions, as these factors can impact treatment decisions and patient outcomes.

Table 5: Distribution of Patients According to Etiology

Type of obstruction	n	%
Adynamic Obstruction	5	5.81
Dynamic Obstruction	81	94.19

Table 6: Distribution of Patient According to the Etiology of Small Bowel Obstruction

Small bowel obstructions	Male		Female	
	n	%	n	%
Obstructive Inguinal Hernia	7	8.1	0	0.0
Meckel's Diverticulitis	2	2.3	2	2.3
Adhesions	7	8.1	6	7.0
BAND	0	0.0	4	4.7

Small Bowel Volvulus	3	3.5	1	1.2
Intussusception	0	0.0	5	5.8
Superior Mesenteric Artery Thrombosis	1	1.2	0	0.0
Jejunal Obstructions	1	1.2	0	0.0
TB	10	11.6	10	11.6

The causes of small bowel obstructions show a diverse range of etiologies among male and female patients. Obstructive inguinal hernia was a cause exclusively in males, with 7 cases reported and none in females. Meckel's diverticulitis was equally distributed, affecting 2 males and 2 females. Adhesions were a common cause for both genders, affecting 7 males and 6 females. BAND (Bands) was reported only in females, with 4 cases.

DISCUSSION

Acute intestinal obstruction is a prevalent reason for surgical hospitalizations on a global scale. The etiology of this condition might vary, but adhesions[9] are the predominant cause in the Western world, as well as in certain regions of Asia and the Middle East. The presence of intestinal tuberculosis is considered a significant contributing factor due to the high occurrence of tuberculosis in the Indian subcontinent and the increasing number of HIV cases in the Indian population.[10]

The possibility of an intestinal obstruction diagnosis is something that a clinical surgeon will likely encounter at least once per day. Surgeons continue to treat intestinal obstruction as a common emergency, accounting for 1-4 percent of all emergency procedures.[11] There will be a significant rate of death due to the treatment delay.

In the present study, 25.8% had abdominal pain, 24.4% had abdominal distension, 19.5% had vomiting, 18.5% had obstipation, 8% had constipation, 2.3% had irreducible hernia and 1.5% had PR bleeding. According to Tiwari SJ et al. study, 53.33% had abdominal pain, 78.33% had vomiting, 90% had distension and 86.6% had constipation observed during his findings.

In the present study, 17.44% had smoking habits, 10.04% had past surgery, 9.30% had tuberculosis, 6.98% had diabetes mellitus, 3.49% had NSAID user, 1.16% had chronic liver disease and 8.14 % had COPD type of comorbidity observed during the study. Throughout the trial, 26.5% of the participants experienced large bowel obstruction, whereas 73.5% experienced small intestinal obstruction. In the study conducted by Kumari N. et al.[12], it was shown that the most prevalent form of blockage was small bowel obstruction (SBO), accounting for 60% of cases. Large bowel obstruction (LBO) was observed in 20% of patients, while the other 20% exhibited a combination of both types of obstruction. Moghadam AG et al.[13] corroborated similar results, stating that small bowel obstruction was the predominant kind, accounting for 66.7% of cases. In their study, Vincenzo Neri et al.[14] found that acute mechanical small intestinal blockage was the most prevalent kind of bowel obstruction, accounting for 71.2% of cases. The study conducted by Alam J et al. found that 81.36% of participants experienced small bowel obstruction, whereas 18.63% experienced major bowel obstruction.[15]

In the present study, 15.12% had adhesions, 4.65% had band, 9.30% had external hernia, 23.26% had tuberculosis, 18.60% had carcinoma, 10.47% had volvulus, 4.65% had Meckel's diverticulum, 5.81% had intussusception and 1.16% had jejunal obstruction and adynamic obstruction 5.81%.

CONCLUSION

In the present study, 86.2% had abdominal pain, 81.9% had

abdominal distension, 65.3% had vomiting, 61.72% had obstipation were majority of symptoms observed during the study. In the present study, 44.2% had abdominal tenderness, 43.10% had decreased bowel sound, 30.3% had increased bowel sound were majority of sign observed during the study.

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, skilful management and treating the pathological effects of the obstruction just as much as the cause itself.

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