

Descriptive Study of Small Bowel Obstruction in Khot Postgraduate Hospital

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Abstract

Introduction: Small bowel obstruction is the most common life-threatening surgical condition and emergency, which is characterized by impaired passage of stool and gases. If small bowel obstruction is not diagnosed and treated promptly, then lead to ischemia, necrosis and intestinal perforation. Signs and symptoms include crampy abdominal pain, nausea, vomiting, abdominal distension and complete cessation of flatus and bowel movements. Diagnosis is based on full clinical examination and radiological imaging of abdomen especially abdomen plain X-ray and CT scan. Management of small bowel obstruction belong to causes and severity of obstruction, which ranges from supportive treatment to conservative measures and emergency surgical procedure. Treatment aims to restore transit and prevent life-threatening complications.

Aim and Objectives: To evaluate the clinical features, diagnostic methods, and treatment outcomes of intestinal obstruction. To identify common causes, assess diagnostic accuracy of imaging, determine complication rates, and compare conservative versus surgical management.

Materials and Methods: This is a descriptive study that was conducted from 2024/03/20 to 2025/03/20. Related data were collected from the medical records of patients who were admitted and diagnosed with small bowel obstruction based on patient demographics, clinical presentation, etiology, diagnostic imaging, types of treatment and complications. Patients of all ages and both genders were included with a confirmed diagnosis of in small bowel obstruction, and those with incomplete medical records were excluded from our study.

Results: in our study in our study, the analysis of patients according to age revealed that 4 (12%) of the patients were younger than 30 years, 7 (22%) were between 30 and 50 years of age, 20 (63%) were between 51 and 70 years of age, and 1 (3%) were older than 70 years. According to sex 20 patients (62%) were male, while 12 patients (38%) were female. From site of causes 10 (32%) of the patients developed intestinal obstruction due to postoperative adhesions, 7 (21%) due to obstructed hernia, 6 (18%) due to Ascaris infestation and fecaliths, 3 (10%) due to tuberculosis, 3(10%) due to intussusception, 2 (6%) due to diverticular bands, and 1 (3%) due to mesenteric ischemia. According to treatment 15 (47%) of the patients underwent adhesiolysis, 6 (29%) underwent resection and anastomosis, 4 (12%) underwent herniotomy, and 6(19%) underwent resection with stoma formation. according to complications showed that 15 (47%) of the patients developed hypovolemia, 7 (22%) presented with shock, 4 (12%) developed peritonitis, and 6 (19%) developed renal failure.

Conclusion: The majority of cases small bowel obstruction happened in male. Most were observed during the fifth and sixth decades. Common etiological factors were previous abdominal surgery and Ascaris. Common complications were hypovolemia and shock.

Keywords: Small bowel obstruction, Treatment, Khost, Complications.

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Introduction

small bowel obstruction is a major problem on healthcare facilities and causes important mortality and morbidity around the world. It also effected on economic impact on healthcare systems due to long hospital stays and surgical procedures. Research has found that small bowel obstruction accounts for approximately 15–20% of all surgical admissions, with a mortality rate of 5–10% in uncomplicated cases and up to 30% in cases with strangulation or perforation.^[1,2] It is defined as a partial or complete blockage of the intestinal lumen that prevents the normal passage of Gas and stool,

which may be mechanical (e.g., adhesions, hernias, tumors, volvulus) or functional (ileus).^[3] this situation might develop urgently due to acute events such as volvulus, intussusception, or slowly due to chronic conditions like colorectal carcinoma or inflammatory strictures. Early diagnosis and on time management are the key of improving outcomes in patients with small bowel obstruction. Diagnosis is primarily based on clinical examination, laboratory investigation and radiological imaging, including plain abdominal X-ray and computed tomography scans. Management options range from conservative such as application of NG-tube

for decompression and fluid replacement up to emergency surgical intervention, depending on underlying cause and severity of disease.^[4,5] late diagnosis and treatment can lead to sever complications, including ischemia, necrosis, perforation, peritonitis, and septic shock.^[6,7] So on time diagnosis and appropriate intervention are essential to reduce morbidity and mortality. According to date that is related to small bowel obstruction in our region, the present study was planned to describe the clinical presentations, etiological patterns, diagnostic findings, complication and management approaches in patients with small bowel obstruction.^[10,9]

Materials and Methods:

This is a descriptive study that was conducted from 2024/03/20 to 2025/03/20. We gathered information on all patients who had been diagnosed with small bowel obstruction, focusing on their age, gender, symptoms, causes, imaging results, type of treatment given, and any complications that happened before or after treatment. Both children and adults, male and female, were included in our research as long as the diagnosis was clearly confirmed. However, we left out any cases where the medical files did not have enough complete information or not agree with admission.

Inclusion Criteria

- All patients of any age and gender who were diagnosed with small bowel obstruction during the study period.
- Cases with a confirmed diagnosis based on clinical examination and imaging (Xray or CT scan).
- Patients whose medical records contained sufficient information for data extraction.
- Medical records containing complete demographic, clinical, and treatment-related data.

Exclusion Criteria

- Patients with incomplete or missing medical records.
- Cases where intestinal obstruction was suspected but not definitively confirmed by imaging or surgery.
- Patients who did not agree with the treatment protocol.
- Patients who refused and rejected surgical agreement.
- Individuals with chronic intestinal pseudoobstruction or functional ileus without a clear mechanical cause (if your study focuses only on mechanical obstruction, you can add this).

International Literature review

Turkey

This is a Retrospective descriptive study conducted in Istanbul. The age, sex, etiology, management, and survival of patients who were hospitalized for bowel obstruction between January 2014 and December 2018 were evaluated retrospectively. Adhesions, tumors, hernias and peritoneal carcinomatosis were evaluated in detail. A total of 735 patients were included in the study. The obstruction was

located in the small bowel (AMSBO) in 60% and in the large bowel (AMLBO) in 40%. The mean patient age was 59.9±16.02 years and 52.9% of the patients were male. Adhesion, tumor, and hernia were the most common etiologies of the overall AMBO group (43.3%, 26.2%, and 6%, respectively). The most common etiology for AMSBO was an adhesion (69.3%), while it was a tumor for AMLBO cases (61.6%). The most common management of AMBO patients was a conservative approach (53.2%; adhesions: 76.7%). Surgical palliation was performed in 24.9% (peritoneal carcinomatosis: 65.7%), and resection was performed in 21.9% (volvulus: 61.9%). The mortality rate in the group was 8.6%. The most common etiology was colorectal surgery (51.4%) for adhesions, colorectal cancer (93.8%) for tumors, and incisional hernia (47.7%) in cases of hernia-related AMBO.^[22]

India

This is a descriptive study conducted in India at Bangalore Medical College and Research Institute by Gridhar C.M., Preethitha Babu, and K. Seshagiri Rao in 2014, involving 60 patients, under the title "Study of Intestinal Obstruction", and published in the Journal of Clinical and Diagnostic Research, it was reported that 57% of the patients were male and 43% were female. Regarding the age distribution, 8% of the patients were between 11–30 years, 28% were between 31–50 years, 62% were between 51–70 years, and 2% were older than 70 years.

With respect to the etiology of intestinal obstruction, 42% of the patients had postoperative adhesive bands, 30% had obstructed hernias, 4% had tuberculous bands, 4% had Meckel's diverticular bands, 14% had volvulus and ascariasis, 4% had intussusception, and 2% had mesenteric ischemia (23). Regarding the clinical presentation, 88% of the patients complained of abdominal pain, 78% experienced vomiting, 65% had constipation, and 66% presented with abdominal tenderness. In terms of surgical management, 62% of the patients underwent adhesiolysis (release of adhesions), 18% underwent resection and anastomosis, 12% underwent herniotomy, and 8% underwent bowel resection with stoma formation. Concerning postoperative complications, 30% of the patients developed hypovolemia, 20% presented with shock, 2% developed renal failure, 6% had peritonitis, and 8% developed septicemia.^[23]

Swedish

This is a retrospective study of 402 patients (240 women, median age 70 years, range 18–97) who underwent surgery for SBO in the Uppsala and Gävleborg regions in 2007–2012. Patients were followed to last note in medical records or death. The cause of obstruction was a fibrous band in 56% and diffuse adhesions in 44%. Early overall postoperative morbidity was 48%, and 10% required a re-operation. Complications, intensive care and early mortality ($n = 21$, 5.2%) were related to age ($p < 0.05$) and American Society of Anesthesiologist's class ($p < 0.01$). At a median follow-up of 66 months (0–122), 72 patients (18%) had been readmitted

because of SBO; 26 of them underwent a re-operation. Previous laparotomies ($p = 0.013$), diffuse adhesions ($p = 0.050$), and difficult surgery (bowel injury, operation time and bleeding, $p = 0.034-0.003$) related to recurrent SBO. The cohort spent 6735 days in hospital due to SBO; 772 of these days were due to recurrent SBO. In all, 61% of the cohort was alive at last follow-up. Late mortality was related to malignancies, cardiovascular disease, and other chronic diseases.^[24]

Research Findings and Tables

For greater clarity and better understanding, the study findings have been organized and presented in the form of tables and graphs as follows:

In our study, the analysis of patients according to age revealed that 12% of the patients were younger than 30 years, 22% were between 30 and 50 years of age, 63% were between 51 and 70 years of age, and 3% were older than 70 years.

In our study, the analysis of patients according to gender showed that 20 patients (62%) were male, while 12 patients (38%) were female. Therefore, the majority of cases occurred among male patients.

In our study, the analysis of patients according to the etiological factors revealed that 32% of the patients developed intestinal obstruction due to postoperative adhesions, 21% due to obstructed hernia, 18% due to *Ascaris* infestation and fecaliths, 10% due to tuberculosis, 10% due to intussusception, 6% due to diverticular bands, and 3% due to mesenteric ischemia.

In our study, the analysis of patients with small bowel obstruction according to the type of surgical procedure performed showed that 47% of the patients underwent adhesiolysis, 22% underwent resection and anastomosis, 12% underwent herniotomy, and 19% underwent resection with stoma formation.

In our study, the analysis of patients with small bowel obstruction according to complications showed that 28% of the patients developed hypovolemia, 13% presented

Table 3: Distribution of patients according to causes of intestinal obstructions

Serial number	Cause of Small bowel obstruction	Number of patients	Percentage of patients
1	Postoperative adhesion	10	32%
2	Intestinal TB	3	10 %
3	Michkle's Diverticulum band	2	6 %
4	Ascariasis	6	18 %
5	Obstructed hernia	7	21 %
6	Intussusception	3	10 %
7	Mesenteric ischemia	1	3 %
8	Toal	32	100 %

Table 4: Distribution of patients according to type of procedure

Number	Procedures	Number of patients	Percentage
1	Release of adhesion	15	47 %
2	Resection and anastomosis	7	22 %
3	Herniotomy	4	12 %
3	Resection and stoma	6	19 %
	Total	32	100 %

Table 5: Distribution of patients according to complications after operation

Number	Complications	Number of patients	Percentage
1	Hypovolemia	15	47 %
2	Shock	7	22 %
3	Peritonitis	4	12 %
4	Renal failure	6	19 %
5	Total	32	100 %

with shock, 6% developed peritonitis, and 3% developed renal failure.

Discussion Comparison with International Studies

The age distribution in the present study demonstrated that the majority of patients (63%) were between 51 and 70 years of age, followed by 22% between 30 and 50 years, 12% younger than 30 years, and only 3% older than 70 years. These findings are comparable to the Indian study by Gridhar et al., in which 62% of patients were also within the 51–70-year age group, indicating that intestinal obstruction occurs predominantly among older adults in both populations. Similarly, the Turkish study reported a mean patient age of 59.9 ± 16.02 years, while the Swedish study reported a median age of 70 years, further supporting that small bowel obstruction is more common in middle-aged and elderly patients. The relatively higher median age observed in the Swedish study may be explained by differences in life

Table 1: Distribution of patients according to age

Number	Age	Number of patients	Percentage
1	1 – 30 years	4	12 %
2	31 – 50 years	7	22 %
3	51 – 70 years	20	63 %
4	More than 70 years	1	3 %
5	Total	32	100 %

Table 2: Distribution of patients according to sex

Number	Sex	Number of patients	Percentage
1	Male	20	62 %
2	Female	12	38 %
3	Total	32	100 %

expectancy, demographic characteristics, and the higher prevalence of previous abdominal surgeries among elderly patients.

Regarding gender distribution, males constituted 62% of patients in the present study, whereas females accounted for 38%. These findings are similar to those reported in the Indian study, where 57% of patients were male and 43% were female, and the Turkish study, in which 52.9% of patients were male. In contrast, the Swedish study included more female patients (240 women among 402 patients). The male predominance observed in the present study, as well as in the Turkish and Indian studies, may reflect occupational, environmental, and healthcare-related factors, whereas the female predominance in the Swedish population may be associated with demographic differences and a greater proportion of elderly women in that cohort.

With regard to the etiology of small bowel obstruction, postoperative adhesions were the leading cause in the present study (32%), followed by obstructed hernia (21%), *Ascaris* infestation and fecaliths (18%), tuberculosis (10%), intussusception (10%), diverticular bands (6%), and mesenteric ischemia (3%). Adhesions were likewise identified as the most common cause in the Turkish study (43.3% overall and 69.3% among small bowel obstruction cases), the Indian study (42%), and the Swedish study, where all patients had adhesive small bowel obstruction caused by fibrous bands or diffuse adhesions. However, the proportion of adhesive obstruction in the present study was lower than that reported in these studies. Moreover, *Ascaris* infestation and tuberculosis contributed substantially to intestinal obstruction in the present study but were uncommon or absent in the Turkish and Swedish studies. These differences are likely attributable to variations in socioeconomic conditions, sanitation, endemic infectious diseases, and access to healthcare services.

In terms of surgical management, adhesiolysis was the most frequently performed procedure in the present study (47%), followed by resection and anastomosis (22%), resection with stoma formation (19%), and herniotomy (12%). Similar findings were observed in the Indian study, where adhesiolysis was performed in 62% of patients, resection and anastomosis in 18%, herniotomy in 12%, and bowel resection with stoma formation in 8%. Likewise, the Turkish study reported that conservative treatment was the most common overall management strategy, while surgical procedures, including bowel resection, were performed according to the underlying pathology. The similarities between the present study and the Indian study may be related to comparable disease patterns and surgical practices, whereas the greater use of conservative treatment in Turkey may reflect differences in patient selection, earlier diagnosis, and institutional treatment protocols.

Regarding postoperative complications, hypovolemia was the most common complication in the present study (28%), followed by shock (13%), peritonitis (6%), and renal

failure (3%). These findings are comparable to the Indian study, where hypovolemia (30%), shock (20%), peritonitis (6%), and renal failure (2%) were also the major postoperative complications. In contrast, the Swedish study reported an overall postoperative morbidity of 48%, a re-operation rate of 10%, and an early mortality rate of 5.2%, while the Turkish study reported an overall mortality rate of 8.6%. The relatively lower frequency of severe postoperative complications observed in the present study may be associated with the smaller sample size, differences in patient characteristics, earlier surgical intervention, and variations in perioperative care.

Conclusion

The majority of cases of small bowel obstruction occurred in male patients. Most cases were observed during the fifth and sixth decades of life. The most common etiological factors were previous abdominal surgery (postoperative adhesions), hernia, and *Ascaris* infestation. The most frequently encountered complications were dehydration (hypovolemia) and shock.

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Recommendations

- As small bowel obstruction remains a significant health problem among the population of Afghanistan, patients suffering from this condition often experience considerable difficulty in carrying out their daily activities. It is frequently observed that many patients receive treatment from unqualified or non-specialized practitioners, resulting in loss of both time and money. So, doctors should exercise caution in patient management and refer suspected cases to specialized surgical hospitals whenever appropriate.
- Any individual who develops signs and symptoms like small bowel obstruction should seek medical attention promptly and present to a healthcare facility for proper evaluation and management.
- Patients should not hesitate or feel embarrassed during medical examination and should fully cooperate with healthcare providers, enabling accurate diagnosis and appropriate treatment planning.
- Patients who undergo surgery for small bowel obstruction often require an extended period for complete wound healing. Since many of these patients are discharged before complete recovery, they should receive detailed instructions regarding wound care and postoperative management. They should also be advised to consult their treating physician whenever necessary.

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