

ORIGINAL RESEARCH

Understanding the evolving aetiology and treatment approaches of intestinal blockage: A prospective study

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ABSTRACT

Background: One of the most frequent intra-abdominal issues that surgeons face in their practice is bowel obstruction. The causes of these blockages are hernias, neoplasms, and/or biochemical abnormalities linked to adhesion. The primary cause of death and morbidity is still obstruction of the large or small intestine. **Methods:** 48 participants with intestinal blockage between the ages of 18 and 87 made up the study. Based on the participants' clinical history, physical examination, hematologic and radiologic data, and physical examination results, the diagnosis was determined. **Results:** The most frequent complication observed in 14.58% (n=7) research participants was the surgical site infection, which was observed in 10.41% (n=5) study participants. 8.33% (n=4) of research participants had a respiratory tract illness. Faecal fistula was the least frequent reported complication, occurring in 4.16% (n=2) of the research participants. Upon evaluating the study's mortality rate, it was observed that while 87.5% (n=42) of the individuals lived and experienced recovery from acute abdominal distension, 12.5% (n=6) of the subjects died after surgery. The current study shows that postoperative adhesion, which may be correctly detected with surgical, radiological, and clinical examination, is the most frequent cause of intestinal blockage. Undiagnosed cancer cases are related with a significant death rate and are considered emergencies in people with intestinal blockage. A positive prognosis is linked to prompt care and early diagnosis; bad results are linked to delayed prognosis, advancing age, and strangling

Keywords: Bowel obstruction, mortality, morbidity, intestinal obstruction, tachycardia.

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INTRODUCTION

Bowel obstruction is the most frequent cause of intra-abdominal difficulties and one of the most prevalent complications general surgeons see in their practice. The causes of these blockages are hernias, neoplasms, and/or biochemical abnormalities linked to adhesion. The primary cause of death and morbidity is still obstruction of the large or small intestine.¹

Approximately 10–16% of surgical admissions are due to acute abdominal symptoms, which show up as a healthy look with just modest abdominal distension and pain, hypovolemic shock, or septic shock. Surgery is seen as an emergency treatment for this problem.²

As our understanding of the pathogenesis of acute intestinal blockage advances, so does the mortality associated with it.³ The death rate has been reduced to older patients with related comorbidities and delayed

diagnosis because to advances in diagnostic procedures, improved understanding of the intensive care unit, and the discovery of antibiotics with greater effectiveness. Diabetes mellitus, heart conditions, and/or respiratory disorders are examples of these comorbidities.⁴ Therefore, the goal of the current study was to evaluate the causes, symptoms, treatment, and death rates of acute colon blockage. Additionally, the goal of this study was to determine how different factors—such as age, gender, nutrition, and socioeconomic status—affect acute bowel obstructions.

MATERIALS AND METHODS

The goal of this study was to evaluate acute bowel obstruction's aetiology, manifestations, treatment, morbidity, and mortality. Additionally, the goal of this study was to determine how different factors—such as

age, gender, nutrition, and socioeconomic status— affect acute bowel obstructions. The study was carried out at. from. to. with approval from the relevant ethical committee. Subjects in the research ranged in age from 18 to 87 years old, with a mean age of 43.6 ± 6.78 years. The research did not include any children. Based on the results of the physical examination, the clinical history, the hematologic and radiologic parameters, and the physical examination, the participants were included. Additionally, participants receiving conservative treatment for subacute intestinal blockage were not included.

In order to evaluate the pathophysiology underlying an intestine obstruction and identify outcomes, pathology, findings, presentation, hematologic, and radiologic results, the participants with acute intestinal obstruction treated with surgical intervention were included. Following final admission and inclusion, clinical data were documented. Clinical characteristics led to the final diagnosis, which was subsequently supported by hematologic and radiologic results.

The current investigation involved the taking of a patient's history, a physical examination, laboratory testing, radiographic evaluation, surgery, and follow-up.

Following the patient's admission, clinical data were documented using the Proforma. Haematological and radiographic tests were frequently used to confirm the diagnosis, which was mostly based on the clinical examination.

All research participants with adhesions showed improvement in their overall health and a reduction in abdominal distension after the procedure. Subjects with better bowel motions and less discomfort received conservative therapy. These participants were not included in the research. The patients who showed evidence of acute abdominal distension and continued to have symptoms were scheduled for surgery. Abandonment of release, caecopexy for intussusception, anastomosis of intestinal gangrene, reduction of adhesion, and strangulated obstruction repair were the surgical interventions performed.

When necessary, a specimen was obtained for histopathologic analysis. After surgery, depending on the toxemia and overall state of each individual, all individuals were closely observed at intervals of either one hour or four hours.

Every individual received intravenous fluids, antibiotics, and tube aspiration. Every issue that arose was identified and dealt with properly. Six months of postoperative follow-up were conducted. Not many subjects skipped the follow-up appointments. Causative variables, age, gender, examination results, symptoms, operative findings, investigations, operative procedures, operational findings, and/or any difficulties encountered were taken into consideration while formulating the results.

RESULTS

The goal of the current prospective clinical study was to evaluate the causes, symptoms, treatment, morbidity, and mortality of acute colon blockage. Additionally, the goal of this study was to determine how different factors—such as age, gender, nutrition, and socioeconomic status— affect acute bowel obstructions. Subjects in the research ranged in age from 18 to 87 years old, with a mean age of 43.6 ± 6.78 years.

Table 1 presents a list of the research individuals' demographic characteristics. It was observed that the greatest proportion of participants (27.08%; $n = 13$) were between the ages of 51 and 60, followed by 25% ($n = 12$) in the 41 to 50 age range, and the lowest percentage (4.16%; $n = 2$) in the 80+ age range. In this study, there were 27.08% ($n=13$) female participants and 72.91% ($n=35$) male participants. Abdominal discomfort was reported by the majority of individuals (87.5%; $n = 42$), followed by peristalsis (79.16%; $n = 38$); vomiting (75%; $n = 36$); tachycardia (72.91%; $n = 35$); and abdominal distension (68.75%; $n = 33$). Constipation, which affected 58.33% ($n=28$) of the research participants, was the least frequent symptom.

Table 1: Demographic and disease characteristics of the study subjects

Characteristics	Percentage (%)	Number (n)
Age Distribution		
18-30	10.41	5
31-40	14.58	7
41-50	25	12
51-60	27.08	13
61-70	16.66	8
71-80	6.25	3
>80	4.16	2
Gender		
Males	72.91	35
Females	27.08	13
Disease signs and symptoms		
Constipation	58.33	28
Abdominal distension	68.75	33

Vomiting	75	36
Abdominal Pain	87.5	42
Tachycardia	72.91	35
Peristalsis	79.16	38

After determining the aetiology of the intestinal distention in the study subjects, it was discovered that postoperative adhesion accounted for the majority of the causes (27.08%; n = 13), followed by malignancy (22.91%; n = 11); obstructed hernia (16.66%; n = 8); band and volvulus separately (10.41%); and tuberculosis abdomen (8.33%; n = 4) study subjects.

As shown in Table 2, the least prevalent etiologic factors seen were intussusception and mesenteric ischemia, each observed in 2.08% (n=1) of research patients.

The current investigation evaluated the post-operative complications observed in the research participants after acute abdominal distension surgery.

Table 2: Etiology of the acute abdominal distension in the study subjects

Etiology	Percentage (%)	Number (n)
Mesenteric ischaemia	2.08	1
Intussusception	2.08	1
Malignancy	22.91	11
TB abdomen	8.33	4
Volvulus	10.41	5
Obstructed Hernia	16.66	8
Band	10.41	5
Postoperative adhesion	27.08	13

Sepsis was found to be the most frequent complication observed in 14.58% (n=7) research participants, with surgical site infections accounting for 10.41% (n=5) of study subjects. 8.33% (n=4) of research participants had a respiratory tract illness. Faecal fistula was the least frequent reported complication, occurring in 4.16% (n=2) of the

research participants. When the study's mortality rate was calculated, it was discovered that while 87.5% of participants (n=42) lived and were cured, 12.5% of subjects (n=6) died after having acute abdominal distension surgically treated (Table 3). Septic shock and respiratory tract infection were the individuals' causes of death.

Table 3: Complications and mortality in the study subjects

Parameter	Percentage (%)	Number (n)
Complications		
Fecal Fistula	4.16	2
Respiratory tract infection	8.33	4
Sepsis	14.58	7
Surgical site infection	10.41	5
Mortality (Death)	12.5	6
Cured	87.5	42

DISCUSSION

The goal of the current prospective clinical study was to evaluate the causes, symptoms, treatment, morbidity, and mortality of acute colon blockage. Additionally, the goal of the current study was to determine how a person's age, gender, nutrition, and socioeconomic level affected their risk of acute colon blockage. With a mean age of 43.6±6.78 years, the study's volunteers ranged in age from 18 to 87 years. It was observed that the greatest proportion of participants (27.08%; n = 13) were between the ages of 51 and 60, followed by 25% (n = 12) in the 41 to 50 age range, and the lowest percentage (4.16%; n = 2) in the 80+ age range. In this study, there were 27.08% (n=13) female participants and 72.91% (n=35) male participants. In 87.5% (n=42) of the

individuals, the majority reported having stomach pain.

Following this, 79.16% (n=38) of the study participants had peristalsis, 75% (n=36) experienced vomiting, 72.91% (n=35) experienced tachycardia, and 68.75% (n=33) experienced abdominal distension. Constipation was the least frequent symptom, occurring in 58.33% (n=28) of research participants. These demographics were similar to those evaluated by Richard LD Lake et al. (2006) and Haridimos M. et al. (2007), whose respective study authors evaluated similar demographics.

The aetiology of the intestinal distention in the research participants was also evaluated in this investigation; postoperative adhesion was shown to be the most frequent cause, accounting for 27.08% (n=13) of the study subjects' intestinal distention.

Next in order of occurrence were malignancy (22.91%; n = 11 research participants), blocked hernia (16.66%; n = 8 study subjects), band and volvulus (10.41%), and TB abdomen (8.33%). Intussusception and mesenteric ischemia, both observed in 2.08% (n=1) of research individuals, were the least frequent etiologic factors. These findings aligned with those of Robert M Berne et al. (2007) and Branco BC et al. (2010), who found comparable etiologic variables linked to acute abdominal distension in their respective investigations.

Evaluating the issues that the research participants had after undergoing surgery to treat acute abdominal distension.

Sepsis was found to be the most frequent complication observed in 14.58% (n=7) research participants, with surgical site infections accounting for 10.41% (n=5) of study subjects. 8.33% (n=4) of research participants had a respiratory tract illness. Faecal fistula was the least frequent reported complication, occurring in 4.16% (n=2) of the research participants. After acute abdominal distension was surgically managed, 12.5% (n=6) of the individuals died, whereas 87.5% (n=42) of the subjects lived and recovered, according to the study's mortality rate analysis. The individuals' respiratory tract infection and septic shock were the cause of their death.

The results of Ten Broek RPG et al⁹ in 2018 and Jaffe T et al¹⁰ in 2015, whose authors reported similar fatality rates and problems in their research patients, concurred with these findings.

CONCLUSION

Within the bounds of its limitations, the current study suggests that acute abdominal blockage is a surgical emergency, the outcome of which depends primarily on a fast diagnosis and appropriate treatment. Achieving success in treated patients is mostly dependent on radiographic and clinical aspects. Postoperative adhesion was the most frequent reason for blockage. Undiagnosed cancer cases are connected with a high death rate. Poor results might arise from strangling caused by a delayed diagnosis. A limited sample size, a brief monitoring period, and biases related to geographic areas were some of the study's shortcomings.

Hence, more longitudinal studies with larger sample size and longer monitoring period will help reach a definitive conclusion.

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