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A CROSS-SECTIONAL STUDY OF STANDARD INTERVENTION OF INTESTINAL OBSTRUCTION IN A TERTIARY HOSPITAL IN CENTRAL INDIA.

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Abstract

Background: A common surgical emergency, intestinal blockage has a high death and morbidity rate. Intestinal blockage accounts for about 15% of all emergency room visits for acute abdominal discomfort. Acute intestinal obstruction can take several forms, ranging from a seemingly normal look with just minor stomach pain and distension to a situation of hypovolemic or septic shock (or both) requiring an emergency treatment.

Aim: The goal of this study was to see how our tertiary hospital managed intestinal obstruction operations.

Material and Methods: Patients in the current study ranged in age from 21 to 80 and had a surgically treated acute intestinal blockage. Patients with severe signs and symptoms of acute blockage were treated with an appropriate surgical approach after initial resuscitation. All of the data was entered into a spreadsheet and analysed with descriptive statistics.

Results: During the study period, 288 patients received surgery for acute intestinal blockage. The most prevalent age group (26 percent) was 51 to 60 years old, followed by 41 to 50 years old (21 percent). Male patients were 2.8 times more likely than female patients to be afflicted. Previous abdominal surgery (56 percent), diabetes (31%), smoking (25%), hypertension (24%), and bronchial asthma/ COPD (15%) were all discovered to be common co-morbidities in this study. The most common causes of intestinal obstruction in this study were postoperative adhesions (47 percent), malignancy (15 percent), obstructed hernia (11 percent), and Koch's abdomen (8 percent). The most prevalent surgical procedures in this study were adhesion removal (47 percent), resection and anastomosis (22 percent), diversion colostomy (13 percent), and hernioplasty (13 percent) (11 percent). Fever (15%) and wound infection (11%) were the most prevalent post-operative problems, respectively. The rate of post-operative death was 13%. There are nine patients in all. The majority of deaths are caused by complications such as septicemia, peritonitis, and lung infection.

Conclusion: Postoperative adhesions are a common cause of intestinal blockage. Early surgical techniques, when combined with clinical diagnosis and radiological data, may improve the outcome of acute intestinal obstruction.

Keywords: surgical management, acute intestinal obstruction, adhesions, adhesiolysis.

Introduction:

A common surgical emergency, intestinal blockage has a high death and morbidity rate. Intestinal blockage accounts for about 15% of all emergency room visits for acute abdominal discomfort[1,2]. The "obstruction" may be mechanical or functional, in which case "pseudo-obstruction," or ileus, might be attributed to poor motility without actual physical obstruction[3-5]. Adhesions (postoperative or post-inflammatory), gallstone ileus (mechanical bowel obstruction), hernias, worm obstruction owing to Ascaris lumbricoides, and volvulus are also common causes of intestinal blockage (an axial twist of the gastrointestinal tract around its mesentery)[6–8]. Acute intestinal obstruction can take several forms, ranging from a seemingly normal look with just minor stomach pain and distension to a situation of hypovolemic or septic shock (or both) requiring an emergency treatment[7,8]. Some of the most common symptoms are nausea, vomiting, colicky stomach discomfort, and failure to pass flatus or faeces[9-11]. Symptoms that indicate to the diagnosis include abdominal distension, a tympanic tone (on percussion), and hyper-peristaltic bowel noises (on auscultation)[12-16]. Surgery should be undertaken right away if there is evidence of vascular compromise or perforation, or if symptoms do not improve with adequate bowel decompression[17]. Early diagnosis of obstruction, expert operative management, appropriate procedure during surgery, and rigorous postoperative care are all crucial to avoiding morbidity and mortality[18,19].

Aims: The goal of this study was to see how our tertiary hospital managed intestinal obstruction surgery.

Material and Methods

The current study was place in the general surgery wards of a tertiary healthcare centre in Central India during a three-year period. The study was prospective and observational, and it was approved by the institutional ethical committee. Patients were eligible if they were between the ages of 19 and 80 and had an acute intestinal blockage that had been surgically addressed. Patients who were treated

conservatively, patients who were declared unfit for surgery, patients who had dynamic intestinal obstruction owing to peritonitis, electrolyte shortage, or diabetes, and patients who were unable to participate in the trial were all eliminated from the study. The patient had a complete medical history, which was documented in a thorough investigation. During the physical examination, signs of dehydration and their severity were explored, and vital values were recorded. A systemic examination, an abdominal examination, and a per rectal examination were all performed and the results were presented. Laboratory tests such as CBC, BT, CT, albumin estimation and microscopy in urine, LFT, and RFT were conducted on all patients. A radiographic examination, such as an upright abdomen X-ray, was performed in all patients, with a barium enema, ultrasonography examination, or CT scan being conducted in some cases. Immediately on admission resuscitation with IV fluids, nasogastric decompression with Ryles tube insertion and antibiotic prophylaxis were started. All bedside measures were carefully watched, including pulse rate, blood pressure, breathing rate, urine output, urine output, abdominal girth, bowel noises, tenderness, and guarding. Patients with severe signs and symptoms of acute blockage were treated with an appropriate surgical approach after initial resuscitation. Histopathological investigation of the resection/biopsy specimen was performed where necessary. During the postoperative phase, the patient's general condition and toxaemia were continuously followed, and all parameters were reported hourly or fourth hourly. Aspiration through a nasogastric tube, intravenous fluids, and antibiotics were given after surgery. Any problems were discovered and remedied as needed. After being discharged from the hospital, patients were followed up on for three months. All of the data was entered into a spreadsheet and analysed with descriptive statistics.

Results

During the study period, 288 patients received surgery for acute intestinal blockage. The most prevalent age group (26 percent) was 51-60 years old, followed by 41-50 years old (21 percent). Male patients were 2.8 times more likely than female patients to be afflicted.

Table 1: Age and sex incidence

Age (years)	Male (%)	Female (%)	Total (%)
21-30	20	12	32 (11 %)
31-40	44	12	56 (19 %)
41-50	48	12	60 (21 %)
51-60	56	20	76 (26 %)
61-70	28	12	40 (14 %)
71-80	16	8	24 (8 %)
Total	212	76	288 (100 %)

Previous abdominal surgery (56 percent), diabetes (31%), smoking (25%), hypertension (24%), and bronchial asthma/COPD (15%) were all discovered to be prevalent comorbidities in this study.

Table 2: Comorbidities

Comorbidities	No. of patients	Percentage
Previous abdominal surgery	160	56 %
Diabetes	88	31 %
Smoking	72	25 %
Hypertension	68	24 %
Bronchial asthma/ COPD	44	15 %
Previous malignancy	36	13 %
Coronary artery disease	28	10 %
Pulmonary tuberculosis	24	8 %
HIV	16	6 %
Chronic kidney disease	12	4 %

The most common causes of intestinal obstruction in this study were postoperative adhesions (47 percent), malignancy (15 percent), obstructed hernia (11 percent), and Koch's abdomen (8 percent). Volvulus (6%), mesenteric ischaemia/thrombosis (4%), diverticula (3%), intussusception (3%), stricture (1%), and GIST (gastrointestinal stromal tumour) are among the other conditions (1 percent).

Table 3: Causes of obstruction

Cause	No. of patients	Percentage
Adhesions/Band	136	47 %
Malignancy	44	15 %
obstructed hernia	32	11 %
Koch's Abdomen	24	8 %
Volvulus	16	6 %
Mesenteric Ischaemia/ Thrombosis	12	4 %
Diverticula	8	3 %
Intussusception	8	3 %
Stricture	4	1 %
GIST	4	1 %

The most prevalent surgical procedures in this study were adhesion removal (47 percent), resection and anastomosis (22 percent), diversion colostomy (13 percent), and hernioplasty (13 percent) (11 percent).

Table 4: Surgical procedure

Surgical procedure	No. of patients	Percentage
Adhesiolysis	136	47 %
Resection and anastomosis	64	22 %
Diversion colostomy	36	13 %
hernioplasty	32	11 %
Sigmoidopexy	12	4 %
Sticturoplasty	4	1 %
Hartmann's procedure	4	1 %

Fever (15%) and wound infection (11%) were the most prevalent post-operative problems, respectively. Prolonged ileus (11%) was the most common consequence, followed by septicaemia (10%), faecal fistula (4%), ruptured abdomen (4%), and small bowel syndrome (4%). (1 percent). The rate of post-operative death was 13%. The majority of deaths are caused by complications such as septicemia, peritonitis, and lung infection.

Table 5: Postoperative complications

Post-operative complications	No of patients	Percentage (%)
Fever	44	15 %
Wound Gaping	36	13 %
Prolonged Ileus	32	11 %
Septicaemia	28	10 %
Faecal Fistula	12	4 %
Burst Abdomen	12	4 %
Short Bowel Syndrome	4	1 %

Discussion

Bowel obstruction is one of the most prevalent intra-abdominal issues encountered by general surgeons, whether due to hernias, neoplasms, adhesions, or biochemical abnormalities[9-11]. The study's most prevalent age group was 41-60 years old, followed by 21-40 years old. The male-to-female ratio was 2.68:1. A similar tendency was seen by Souvik et al[3], Viji D[4] and Ramrao B et al[5], and Priscilla S et al[6]. Males are more prone than females to develop obstructed inguinal hernias and sigmoid volvulus, which could explain why males outnumber females. Adhesions were the most common cause of intestinal blockage in this investigation (postoperative or post-inflammatory). The findings of Thampi et al[7] are similar to ours. According to Ojo E et al[8], the most common cause was postoperative adhesions, followed by obstructed/ strangulated inguinal hernia, malignancy, intussusception, volvulus, TB, and mesenteric ischaemia. In a study conducted in eastern India by Adhikari S et al., hernias were discovered to be the most common cause of intestinal blockage. A clinical entity with a high rate of intestinal blockage and specific risk factors is previous abdominal surgery. Intraperitoneal adhesions are common in patients who have a laparotomy for a variety of reasons, with re-admission rates ranging from 5% to 20%. Appendectomies, gynaecological operations, cholecystectomies, and large bowel cancer resections are the most common surgeries that induce adhesions. Intraoperative preventive strategies such as starch-free gloves, avoiding excessive peritoneal dissection, preventing leakage of intestinal contents or gallstones, decreasing leftover surgical material, and favouring laparoscopic

procedures can all help to lessen the likelihood of adhesions. Adhesions (65%), hernias (10%), neoplasms (5%), Crohn's disease (5%), and other rare reasons were found as etiologies of small intestinal blockage in a systematic investigation by Reddy et al[1] (15 percent). The most prevalent causes of large-bowel blockage in adults are colon or rectal cancer, diverticular disease, or colon volvulus. By twisting a superfluous section of the colon on its mesentery, colonic volvulus causes blockage. Colonic volvulus is found in many places of the world, with historical data suggesting to higher rates in India, Africa, and the Middle East. Release of adhesions for postoperative adhesions (40 percent), resection of anastomosis for obstructed/ strangulated hernia and ischemic bowel (22 percent), release of constricting agents and herniorrhaphy for obstructed/strangulated hernia cases (18 percent), derotation of volvulus and sigmoidopexy (4 percent) were the surgical treatments for acute intestinal obstruction in the study (8 percent). Similar findings were discovered in the current study. Soressa et al16 studied 262 patients, 94 percent of whom underwent surgical therapy and 24.6 percent of whom experienced post-operative problems. Wound infections were responsible for 39.3% of all complications, which matches our findings. Patients with facial dehiscence accounted for 17.8% of the total, with anastomotic leak accounting for 12.5 percent, pelvic consequence or pneumonia accounting for 10.7%, and septic shock accounting for 8.9%. Wound infection is influenced by the size and depth of the incision, the surgical site, antibiotic prophylaxis, instruments and suture material, and wound closure method. Smoking, hypertension, diabetes, obesity, immunosuppression, and steroid use all increase the risk of wound infection. According to the most recent study, the death rate was 13%. Other studies, such as those conducted by Souvik et al[3] (7.35%), Viji D[4] (9%), Ramrao B[5] et al (6.2%), and Madziga A et al[18] (9.14%), reported lower rates. The majority of deaths occur in old persons who wait too long to seek help and who have pre-existing diseases like diabetes, heart disease, or lung disease. Patients with early onset of bowel gangrene have had bad results in cases of compound volvulus (sigmoid volvulus with ileosigmoid knotting), acute mesenteric ischaemia, and malignancies. Ashindoitiang et al[19] propose using abdominal X-rays, specifically upright abdomen X-rays, in cases of bowel obstruction and intestinal perforation because they improve diagnostic value. Despite the fact that Geng et al[20] discovered no evidence that an abdomen x-ray aids in the diagnosis of the underlying problem. The use of computed tomography (CT) abdomen in the diagnosis of bowel obstruction in individuals with suspected bowel obstruction has recently increased.

Conclusion

Acute intestinal blockage is still a major surgical emergency in the operating room. Postoperative adhesions are a common cause of intestinal blockage. Early surgical techniques, when combined with clinical diagnosis and radiological data, may improve the outcome of acute intestinal obstruction. A CT scan is advised for examination when clinical and first standard radiography results are inconclusive or strangulation is suspected. While mortality from acute intestinal obstruction is decreasing due to a better understanding of pathophysiology, improvements in diagnostic methods, fluid and electrolyte correction, more potent antimicrobials, and intensive care information, mortality from acute intestinal obstruction is increasing due to a better understanding of pathophysiology, improvements in diagnostic methods, fluid and electrolyte correction, more potent antimicrobials, and intensive care information.

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