ORIGINAL RESEARCH

Evaluation of Surgical Management of Intestinal Obstruction: Study Conducted at a Tertiary Care Hospital

Rishabh Joshi[1], Mahesh Kumar Singh[2]

[1]Assistant Professor, [2]Associate Professor, Department of General Surgery, L. N. Medical College & Research Centre, Bhopal, Madhya Pradesh, India

Corresponding Author
Dr. Mahesh Kumar Singh
Associate Professor, Department of General Surgery, L. N. Medical College & Research Centre, Bhopal, Madhya Pradesh, India
Email:singhmahesh411963@gmail.com

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ABSTRACT
Background:Acute intestinal obstruction occurs when the forward flow of intestinal contents is interrupted or impaired by a mechanical cause. It is most commonly induced by intra-abdominal adhesions, malignancy, and herniation. This study was conducted to evaluate the surgical management of intestinal obstruction at a tertiary hospital.**Materials and Methods**: This study comprised of 100 subjects having intestinal obstruction. Severe chronic abdominal discomfort, closed loop obstruction on CT, gangrene or imminent gangrene, and bowel perforation were the only acceptable criteria. The other patients who did not respond to conservative treatment were the respective indications for surgery. For four to six days, they underwent a trial of nasogastric decompression, no oral medication, parenteral fluids, and antibiotics. Surgery was typically done on these people if their condition did not improve. In patients who showed signs of partial obstruction without a transition point on CT, a gastrograffin follow-up examination was performed; if the obstruction did not clear, surgery was recommended. **Results**: In this study, 45 were males and 55 were females. Adhesiolysis was performed among 45 subjects, ileal resection and anastomosis was performed in 23 subjects, ileostomy was performed in 21 subjects, jejunal resection and anastomosis was done in 10 subjects and sigmoidectomy was performed in 1 subject only. **Conclusion**: The most common surgical procedure performed among subjects with intestinal obstruction was adhesiolysis.
Keywords:Intestinal Obstruction, Anastomosis, Surgery, Adhesiolysis.

INTRODUCTION
Acute intestinal obstruction occurs when the forward flow of intestinal contents is interrupted or impaired by a mechanical cause. It is most commonly induced by intra-abdominal adhesions, malignancy, and herniation. The clinical presentation generally includes nausea, emesis, colicky abdominal pain, and cessation of passage of flatus and stool, although the severity of these clinical symptoms varies based on the acuity and anatomic level of obstruction. Abdominal distension, tympany to percussion, and high-pitched bowel sounds are classic findings.

Laboratory evaluation should include a complete blood count, metabolic panel, and serum lactate level. Imaging with abdominal radiography or computed tomography can confirm the diagnosis and assist in decision making for therapeutic planning. Management of uncomplicated obstructions includes intravenous fluid resuscitation with correction of metabolic derangements, nasogastric decompression, and bowel rest. Patients with fever and leukocytosis should receive antibiotic coverage against gram-negative organisms and anaerobes. Evidence of vascular compromise or perforation, or failure to resolve with adequate nonoperative management is an indication for surgical intervention.[1]

Despite being one of the most common surgical emergencies, intestinal obstruction is often difficult to manage even today and is associated with a significant morbidity and mortality. Its aetiology differs not only between countries but also between different regions of a single country. Adhesive obstruction has been reported to be the most common reason for intestinal obstruction in Western countries since the end of the last century while obstructed hernias are continuing to be the most common cause in developing countries.[2-5] Due to advances in diagnostic and operative techniques along with

postoperative intensive care, the mortality has now decreased from 60% to less than 10% over the last century but there is considerable variation in these with age and different aetiological diagnoses.[6,7]This study was conducted to evaluate the surgical management of intestinal obstruction at a tertiary hospital.

MATERIALS AND METHODS

This study comprised of 100 subjects having intestinal obstruction. The subjects had been informed about the procedure and were asked to give consent. The subjects who were willing to participate in the study and give consent had been included while those who were not willing to give consent and participate had been excluded from the study. Patients presenting with colicky stomach discomfort, distension, vomiting, and constipation were found to have intestinal obstruction when abdominal X-rays or CT (Contrast enhanced or non-contrast) scans displaying dilated bowel loops with a cut-off point were obtained. Both absolute and relative criteria were used to determine the indications for operation. Severe chronic abdominal discomfort, closed loop obstruction on CT, gangrene or imminent gangrene, and bowel perforation were the only acceptable criteria. The other patients who did not respond to conservative treatment were the respective indications for surgery. For four to six days, they underwent a trial of nasogastric decompression, no oral medication, parenteral fluids, and antibiotics. Surgery was typically done on these people if their condition did not improve. In patients who showed signs of partial obstruction without a transition point on CT, a gastrografin follow-up examination was performed; if the obstruction did not clear, surgery was recommended. Data analysis was done using SPSS software.

RESULTS

In this study of 100 subjects, 45 were males and 55 were females.Adhesiolysis was performed among 45 subjects, ileal resection and anastomosis was performed in 23 subjects, ileostomy was performed in 21 subjects, jejunal resection and anastomosis was done in 10 subjects and sigmoidectomy was performed in 1 subject only.

Table 1: Gender-wise distribution of subjects

Gender	Number of subjects	Percentage
Males	45	45%
Females	55	55%
Total	100	100%

Table 2: Surgical procedures.

Surgical procedures.	Number of subjects
Adhesiolysis	45
Ileal resection and anastomosis	23
Ileostomy	21
Jejunal resection and anastomosis	10
Sigmoidectomy	01
Total	100

DISCUSSION

Intestinal obstruction remains one of the commonest causes of acute abdominal pain worldwide amounting to 5% of emergency admissions. The pattern of intestinal obstruction varies from country to country and time to time within the same country.A steady rise in the number of major abdominal operations, together with earlier diagnosis and elective treatment of groin hernias and intra-abdominal malignancy, has resulted in a change in the causes of intestinal obstruction in Western and other developed countries over the past 50 years, when strangulated hernias accounted for half of the total cases. In under developed and developing countries the number of patients with intestinal obstruction due to gut volvulus and strangulated hernia still remains high.[6- 9]

Over the recent past however there have been changes in the aetiology of intestinal obstruction in developing countries, and abdominal adhesions now tend to be the most common cause in the Western world, parts of Asia and the Middle East.[8]This study was conducted to evaluate the surgical management of intestinal obstruction at a tertiary hospital

In this study, 45 were males and 55 were females. Adhesiolysis was performed among 45 subjects, ileal resection and anastomosis was performed in 23 subjects, ileostomy was performed in 21 subjects, jejunal resection and anastomosis was done in 10 subjects and sigmoidectomy was performed in 1 subject only.Jena SS et al[9] retrospectively analyzed all the patients admitted with intestinal obstruction to their department from January 1996 to December 2019. Their demographic data, duration of symptoms before presenting to the hospital and interval between admission and surgery were noted along with the cause and level of obstruction. The type of procedure, post-operative complications, mortality or whether re-exploration was done were also noted. Post-operative complications were graded according to the Clavien Dindo classification. A total of 986 patients presented

with intestinal obstruction during this period out of which 743 patients underwent surgery. The commonest cause of obstruction was adhesions in 273 (36.7%) – the proportion increased significantly from 23% in 1996–2004 to 51.6% in 2013–2019. This was followed by carcinoma [130(17.5%)], tuberculosis [111(14.9%)], strictures [94(12.7%)] and hernia (5.4%). Colorectal surgery was the most common previous procedure in the adhesions group [85(31.1%)].The overall operative mortality was 41 (5.5%). The aetiology of intestinal obstruction in their hospital is now mainly due to adhesions and is thus shifting towards the western pattern. But tuberculosis and obstructed inguinal hernias still constitute of a sizable proportion of their patients.

This retrospective study was carried out by Gayathri V et al[10] on data obtained from 50 patients who underwent emergency laparotomy for acute intestinal obstruction in Victoria and Bowring and Lady Curzon Hospital from January 2016 to December 2016. Adhesions (26%) were found to be the most common cause followed by obstructed hernia(22%). The common age group was 51-60years. The commonest symptom was abdominal pain followed by vomiting and constipation. The average duration of presentation was 2days. Strangulation was found in 20% of cases. Mortality rate in the study was 16%. In conclusion, we have found that adhesions are becoming an ever-increasing underlying cause of bowel obstruction. A trend of elective hernia surgery has reduced the number of patients of hernias presenting with obstruction of bowel.

CONCLUSION

The most common surgical procedure performed among subjects with intestinal obstruction was adhesiolysis.

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