

Evaluation of the Epidemiology and Pattern of Intestinal Obstruction Complication and Management

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Abstract

Background: Acute intestinal obstruction, one of the important cause of surgical emergencies, has varied etiology, and it varies between developed and developing countries. This study evaluate epidemiology, causes, management of acute intestinal obstruction in semi urban govt medical college

Material and methods: It is a retrospective study of 100 patients admitted with acute intestinal obstruction between 2014 february to 2016 february at Govt medical college Chengalpattu.

Results: Incidence of Acute intestinal obstruction of all patients admitted in surgical ER was around 9%. Male patients more than female patients, age group presented were between 20 to 60 years. In our study the main cause of IO was obstructed inguinal hernia 48% followed by sigmoid volvulus 18%, with third common cause being tumours. In contrast to western studies where adhesive obstruction is the common cause in our study it was only 10%. Post operative complication occurred in 19 patients, majority were wound infection, ileus, and only 2 patients had anastomotic leak.

Conclusion: In this study we conclude that in contrast to developed world where adhesive obstruction more common, IO due to obstructed inguinal hernia is the most common cause in developing world, and in our study volvulus and intestinal tuberculosis also frequent causes while adhesive obstruction relatively less frequent. Mortality was high in referred cases and in late presentation. In this study mortality was found to be 4%

Keywords: Intestinal obstruction, etiology, outcome,

I. Introduction

Intestinal obstruction is a major cause of morbidity among the surgical cases all around the world¹. In the developed countries, the most important cause of intestinal obstruction is the post operative adhesions, Whereas the obstructed inguinal hernias forms the most important cause of intestinal obstruction in the developing countries². A few patients are benefited by obstruction release alone while many of the patients need resection and anastomosis.

Although improvement in diagnostic techniques, fluid and electrolyte correction, much potent anti-microbials and surgical management, still mortality ranges from 3% for simple obstruction to as much as 30% when there is vascular compromise or perforation of the obstructed bowel³. This is further influenced by the clinical setting and related co-morbidities.

Early diagnosis of obstruction, skillful operative management, proper technique during surgery and intensive postoperative treatment yield gratifying results⁴. The purpose of this study was to determine the various etiologies and the pattern of presentation of intestinal obstruction in our setup. This study also analyses the various modalities of treatments available and the post operative complications.

Eligibility Criteria

All patients of non pediatric age group who were diagnosed as intestinal obstruction and who underwent emergency surgery were analysed. Cases of intestinal obstruction managed by conservative methods were excluded from the study. Similarly patients presenting with intestinal obstruction due to obstructed inguinal hernia with no evidence of strangulation that reduced spontaneously were also excluded.

II. Aims Of Study

1. To study the incidence of intestinal obstruction due to mechanical causes, in the cases admitted in Chengalpattu Medical College during the period.
2. To study the relative incidence of the various causes of intestinal obstruction
3. To find out various etiological factors of intestinal obstruction. To study the various line of management adopted in each types of obstruction.
4. To study the prognosis, morbidity and mortality of the various causes.

III. Materials And Methods

It is retrospective study of Patients admitted in the surgical wards with clinical diagnosis of intestinal obstruction at Chengalpattu Medical College between February 2014 and February 2016 forms the material of this study.

All patients of non pediatric age group who were diagnosed as intestinal obstruction and who underwent emergency surgery were analysed. Cases of intestinal obstruction managed by conservative methods were excluded from the study.

Admission criteria include abdominal pain (100%), nausea and vomiting (60%), abdominal distention (94%), and constipation (68%). Apart from detailed clinical examination, regular abdominal girth measurement, electrolytes level, multiple air fluid level in supine X-ray abdomen, and in some cases USG and CECT were used in confirming the diagnosis. Post operative complications, and cause of mortality evaluated.

This study had the approval of ethical committee of our hospital.

IV. Results

In our study the most common cause of intestinal obstruction was obstructed / incarcerated inguinal hernia. Though adhesive obstruction forms the most common form of intestinal obstruction in the literature, in our study obstructed / incarcerated inguinal hernia forms the major cause (46%), While many studies show that external hernia with obstruction is major cause for IO⁵ in developing countries including India. Sinha et al in their study recorded adhesive obstruction more common, similarly Arshad M.Malik⁶ et al in their study of 229 patients of intestinal obstruction also recorded more incidence of adhesive obstruction⁷.

The second common cause was sigmoid volvulus (18%), volvulus is more common in the developing world, sigmoid volvulus accounts for 50% of large bowel obstruction compared to 5% in developed world⁸, followed by tumors which forms 14%. Adhesive intestinal obstruction contributes only 10% of our study. Most of the patients with adhesions were managed conservatively and they didn't contribute to the study group. Ileo caecal tuberculosis in our study presented with feature of obstruction without pulmonary TB only 4% managed with resection anastomosis⁹

Table No.1 Symptoms Distribution

Symptoms	No. of patients	Percentage
1. Abdominal pain	100	100%
2. Vomiting	66	66%
3. Abdominal distention 1. distension distension	94	94%
4. Constipation	68	68%

All the patients had abdominal pain, 66% had nausea and vomiting, 68% of the patients had distention of abdomen, 94% had constipation, degree of distension related to the duration of obstruction, in accordance with literature though minor variation in percentage.

Management

Surgical procedure done was based on the preoperative findings of the cases. Out of 46 cases of, 32 inguinal hernias were obstructed and 14 strangulated. The patients with obstructed inguinal hernias were treated by obstruction release with hernia repair. In strangulated hernias as the bowel viability was lost the gangrenous part of the intestine was resected and end to end anastomosis done. The procedure was followed by hernia repair.

In patients who presented with sigmoid volvulus, all the 18 cases underwent resection anastomosis, since the bowel was not viable or there was doubtful viability. Defunctioning colostomy also done to protect the anastomotic area, as the bowel was unprepared and heavily loaded with fecal matter.

In patients who presented with malignant growth we did loop colostomy as a temporary measure to relieve the obstructive symptoms. Patients who were fit for a second stage procedure undergone resection of the tumor after a good bowel preparation. They were referred to higher institution for the follow up of chemo and radiotherapy. The patients with advanced disease or unresectable growths were treated with permanent colostomy.

The patients who presented with ileocaecal Tb, mesenteric vascular ischemia, intussusception, and small bowel volvulus underwent resection of the affected part of the bowel followed by end to end anastomosis.

Table 2: Treatment

S. No	Diagnosis	No. of Cases	Surgery done
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1	Hernia Obstructed strangulated	32 14	Obstruction release Hernia repair Resection anast , Hernia repair
2	Volvulus	18	Resection anastomosis, defunctioning colostomy
3	Tumors	14	Colostomy
4	Adhesions	10	Adhesiolysis
5	Ileocaecal Tb	4	Limited resection anastomosis
6	Mesenteric vascular Ischemia	4	Resection anastomosis
7	Intussusception	2	Resection anastomosis
8	Small bowel volvulus	2	Resection anastomosis

Table 3: Age Sex Distribution

Age group	Male	Female	Percentage
<20	1	0	2%
21-30	3	1	8%
31-40	9	3	24%
41-50	12	4	32%
51-60	9	2	22%
61-70	4	1	10%
>70	1	0	2%
Total	39	11	100%

Male : female = 78:22 Mean age 45

The Male to Female ratio was 3:1(78 males & 22females). The most common age group affected was 41-50 years. Abdominal pain was the most common symptom followed by abdominal distension. Constipation and vomiting are almost equal in frequency. Acakaya et al the mean age 59 and range between 4-94, Sinha et al found common age group 17 – 60 yrs and female to male ratio 1:3.5

Post operative complications occurred in 30% of the patients. The commonest postoperative complication was wound infection. 10% of the patients had more than one complications. The mortality in our study was 4%. Two patients with mesenteric vascular ischemia and extensive bowel gangrene died of anastomotic leakage and sepsis. The other two patients who underwent colostomy for rectosigmoid growth died on 2nd POD, as a result of cardiac arrest following myocardial infarction. Both cases were taken under high anesthetic risk. The remaining cases were being followed up and the post op period was uneventful. The operative mortality 14% comparable to western studies

Table 4: Complications

Wound infection	11
Pulmonary infection	9
Anastomotic leak	2
Ileus	4
Death	4

V. Discussion

Acute intestinal obstruction is one of the commonest surgical emergencies world wide. Though the etiology varies widely in different regions, and in different age group, in our country IO due to inguinal hernia is the major cause whereas many studies show in developed countries adhesive obstruction reported to be the major cause. Clinical presentations includes vomiting constipation, abdominal distention and abdominal pain¹⁰. In our study sigmoid volvulus found to be the second common cause followed by bowel growth.¹¹

Male more affected than females, may be due the common cause being obstructed inguinal hernia. And volvulus and neoplasms of bowel more common in males. Xray, USG, CECT/Barium studies play a role in suspected cases of intestinal obstruction in confirming the diagnosis. In the absence of co morbid conditions, preoperative preparation of ryle tube aspiration, fluid replacement, electrolyte balance, and higher antibiotics helps to reduce mortality and morbidity. Mortality and morbidity of our study comparable with other studies¹². Duration of obstruction, strangulation, bowel ischemia, co morbid factors all contribute to mortality and morbidity.

VI. Conclusion

Mechanical bowel obstruction is one of the common surgical emergencies. Early diagnosis and prompt surgical intervention reduces mortality and morbidity. Mortality has declined with sophisticated

diagnostic tools, and intensive preoperative preparation.

Obstructive external hernia is the commonest cause of intestinal obstruction in this study. Sigmoid volvulus forms the second most common cause of obstruction, adhesive obstruction relatively less common cause of acute IO. Males are more affected than females, Most cases were in 4th decade of age. Prognosis depends on time of onset of obstruction, longer the duration worse the prognosis, level of obstruction, and obstruction associated with complications, (gangrene, perforation).

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