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Original Research Article

To study various etiological factors in development of intestinal obstruction.

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Abstract

Background & Methods: The aim of the study is to study various etiological factors in development of intestinal obstruction. Complete physical examination was carried out & important investigations done. As soon as the patient was admitted he was kept nil per orally & supportive management was instituted in the form of intravenous fluids & electrolyte replacement, gastric suction by Ryle's tube. Catheterization was done to measure urine output, to assess renal function & perfusion, & to serve as a guide to correction of shock if present.

Results: In this study, the apparent positive correlation, as observed from the table, between mortality & co-morbidities. In this study, the apparent positive correlation, as observed from the table, between Intervention & co-morbidities is statistically significant as shown by p-value which is 0.047. Table shows number of cases with positive history of other diseases & Mortality percentage in such patients.

Conclusion: The maximum incidence was seen in 21-40 years age group at 44% of total cases. Adhesions are the commonest cause of bowel obstruction comprising 27% of total cases. Pain (87%) & Vomiting (67%) were most consistent symptoms. Whenever a patient of obstruction reports, a detailed history & complete examination including per rectal examination be done. Immediate institution of supportive measures must be done. Low incidence of intestinal obstruction due to malignancy in our study can be attributed to the absence of a specialized gastroenterology & oncology unit in our institute & presence of a cancer institute nearby.

Keywords: etiological, development, intestinal & obstruction.
Study Design: Observational Study.

1. INTRODUCTION

The occurrence of intestinal obstruction is as old as mankind itself. It was observed & treated by Hippocrates. The earliest recorded operation for intestinal obstruction was probably performed by Praxagoras in 3rd or 4th century when he created an enterocutaneous fistula to relieve the obstruction[1]. However non operative treatment remained the general rule which included reduction of external hernias, relief of pain by opium & oral administration of mercury or administration of lead shots in an endeavor to open the occluded bowel.

For all practical purposes the treatment of intestinal obstruction was essentially the same as for constipation[2]. But in early 18th century, the diagnosis of different types of intestinal obstruction was made & it became to be recognized as a clinical entity which was caused by a number of pathological conditions, for example, the diagnosis & recognition of

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intussusception was made by Nuck in 1751, volvulus of caecum & ascending colon was described by Rohitansky in 1841[3].

The small intestine is a tubular structure, with an estimated median length of 6 meters in adults that consists of three segments lying in series: the duodenum, the jejunum, & the ileum. The duodenum, the most proximal segment, lies in the retroperitoneum immediately adjacent to the head & inferior border of the body of the pancreas[4]. The duodenum is demarcated from the stomach by the pylorus & from the jejunum by the ligament of Treitz. The jejunum & ileum lie within the peritoneal cavity & are tethered to the retroperitoneum by a broad-based mesentery. No distinct anatomic landmark demarcates the jejunum from the ileum; the proximal 40% of the jejunoileal segment is arbitrarily defined as the jejunum & the distal 60% as the ileum. The ileum is demarcated from the cecum by the ileocecal valve[5].

The small intestine contains mucosal folds known as plicae circulares or valvulae conniventes that are visible upon gross inspection. These folds are also visible radiographically & help to distinguish between small intestine & colon (which does not contain them) on abdominal radiographs. These folds are more prominent in the proximal intestine than in the distal small intestine[6]. Other features evident on gross inspection that are more characteristic of the proximal than distal small intestine include larger circumference, thicker wall, less fatty mesentery, & longer vasa recta. Gross examination of the small-intestinal mucosa also reveals aggregates of lymphoid follicles.

2. MATERIAL & METHODS

This is a 01 year prospective study patients of intestinal obstruction admitted at Department of General Surgery. On admission the detailed presenting history & past history about similar complaints, previous operations, any diseases (co-morbidities) like pulmonary TB, diabetes mellitus, hypertension, allergies, asthma, epilepsy etc., was taken & noted in the working proforma.

Apart from routine hematological & biochemical investigations, serum electrolytes & plain x-ray abdomen in erect posture were done as a mandatory measure & preparations for surgery (if intervention is required) were done.

Typical symptoms for intestinal obstruction are those that are present in most of the cases of intestinal obstruction irrespective of its etiology. There are four typical symptoms - pain, vomiting, distension, absolute constipation. All four of them may not be present in single patient but they are more frequently seen.

3. RESULT

Table No. 1: Intestinal obstruction in various age groups

Age Group (in years)	No. of Cases	Percentage (%)
12-20	15	15
21-30	23	23
31-40	21	21
41-50	17	17
51-60	12	12
61-60	09	09
>70	03	03
Total	**100**	**100**

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From the above table, it is observed that maximum number of cases is seen in 21-30 years age group, comprising 23% of total cases. Least incidence is seen in>70 years age group at 03%. Mean age of the patients in the study was 26.8 yrs.

Table No. 2: Intestinal obstruction according to etiology

Etiology	No. of Cases	Percentage (%)
Hernias	07	07
Volvulus	03	03
Adhesions	27	27
Malignancy	06	06
Intestinal TB	21	21
Intussusceptions	01	01
Superior Mesentric Artery Syndrome	02	02
Meckels Diverticula	04	04
Foreign Body	01	01
Fecoleath	01	01
Superior Mesentric Ischemia	03	03
Pseudo Obstructions	01	01
Ileus	23	23
Total	**100**	**100**

Table shows number of cases according to various causes of intestinal obstruction & their percentages.

From the above table, the maximum numbers of cases of intestinal obstruction were due to adhesions (27%) followed by Paralytic ileus (23%), followed by Intestinal Tuberculosis (21%) & the least common etiology causing intestinal obstruction was Superior mesenteric artery syndrome, Foreign body, Feacolith.

Table No. 3: Incidence of various symptoms in cases of intestinal obstruction

Symptoms	No. of Cases	Percentage (%)
Typical symptoms		
Pain	87	87
Vomiting	67	67
Distension	29	29
Absolute constipation	63	63
Atypical symptoms		
Loose motion	03	03
Fever	09	9
welling in abdo/inguinal region	06	06

Among the typical symptoms, pain was the most frequent symptom seen in 87% of patients. Least common symptom was Distension seen in 29% patients. Among the atypical symptoms, fever was commonest symptom seen in 9% patients. Least common symptom was Loose motion seen in 3% patients.

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Table No. 4: Mortality in relation to co-morbidities

	No. of Cases	%	Intervention	No. of Cases	%	Mortality	Comparative Ratio
Cases with co-morbidities	13	13	Conservative	05	38.4	02	40
Cases without co-morbidities	87	87	Operative	08	61.6	01	12.5
Total	**100**		Total	13		**03**	

In this study, the apparent positive correlation, as observed from the table, between mortality & co-morbidities. In this study, the apparent positive correlation, as observed from the table, between Intervention & co-morbidities is statistically significant as shown by p-value which is 0.047. Table shows number of cases with positive history of other diseases & Mortality percentage in such patients.

4. DISCUSSION

The problem of intestinal obstruction has been of immense academic interest throughout this century perhaps due to the fact that it is one of the most commonly dealt with emergencies by surgeons. In all these studies the one outstanding fact that has come to be recognized is that delay in institution of surgical treatment causes mortality to rise steeply[7]. Hence to begin with, on receiving the patient, proper care of dehydration, electrolyte imbalance must be taken & proper decompression of bowel done & patient then taken for surgery.

In the present study, adhesions are the commonest cause of bowel obstruction, comprising about 28.75% of total cases in which about 81% cases are due to post-operative adhesions & rest 19% cases are due to inflammatory adhesions. Total number of cases due to post-operative adhesions comes out to be 104 out of total 400 cases. When reviewing the combined statistics from other Hospitals, found external hernia responsible for 46 & 47.9 per cent of obstructions, respectively, while adhesions accounted for only 11.1 & 7.3 per cent. The occurrence of post-operative adhesions as the commonest cause is not consistent with the older studies but it closely corresponds to work & hence shows an increase in this etiology in recent years which perhaps is an indication of greater number of surgeries being performed now a days[8].

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Classically, a tetrad of symptoms have been associated with intestinal obstruction. But all patients do not always present with all of them. Pain in abdomen was the presenting feature in 87.5% cases. Vomiting was seen in 67% cases which is higher correspond to work by Adhikari et al (2010) in 24.8%. Constipation was present in 63% & distension in 29.5%. Pain & vomiting were most consistent symptoms[10]. Fever was present in 9%.Loose motion in3% cases is Least common symptom.

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5. CONCLUSION

The maximum incidence was seen in 21-40 years age group at 44% of total cases. Adhesions are the commonest cause of bowel obstruction comprising 27% of total cases. Pain (87%) & Vomiting (67%) were most consistent symptoms. Whenever a patient of obstruction reports, a detailed history & complete examination including per rectal examination be done. Immediate institution of supportive measures must be done. Low incidence of intestinal obstruction due to malignancy in our study can be attributed to the absence of a specialized gastroenterology & oncology unit in our institute & presence of a cancer institute nearby.

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