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Study on Evaluation and Surgical Management of Mechanical Intestinal Bowel Obstruction

KEYWORDS: Bowel, Intestinal obstruction and Surgery.

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ABSTRACT *Intestinal obstruction accounts for approximately 15 percent of all emer¬gency department visits for acute abdominal pain. Managing intestinal obstruction is a continuous challenge to surgeons all over the world. Our aim was to find out the frequency of various surgical Management of Mechanical Intestinal Bowel Obstruction. We conclude that adhesions and Tuberculosis are the major causes of mechanical intestinal obstruction in this region.*

Introduction:

Intestinal obstruction accounts for approximately 15 percent of all emergency department visits for acute abdominal pain.[1] Managing intestinal obstruction is a continuous challenge to surgeons all over the world.[2] Obstruction of the bowel may be Dynamic (mechanical) obstruction or a dynamic (non-mechanical) obstruction in which no true peristalsis is seen.[3] Abdominal pain, vomiting, constipation, abdominal distension and failure to pass flatus are the cardinal features of intestinal obstruction.[4]

Complications of intestinal obstruction include bowel ischemia and perforation. Morbidity and mortality associated with intestinal obstruction have declined since the advent of more sophisticated diagnostic tests, but the condition remains a challenging surgical diagnosis. Physicians who are treating patients with intestinal obstruction must weigh the risks of surgery with the consequences of inappropriate conservative management. Our aim was to find out the frequency of various surgical Management of Mechanical Intestinal Bowel Obstruction and to evaluate the morbidity and mortality in adult patients presenting with intestinal obstruction.

Material and Methods:

This study was conducted in the Department of Surgery, Pacific Institute of Medical Sciences, Udaipur, India. A total of 45 patients with mechanical intestinal obstruction were treated during the period from October 2015 to July 2016. Out of 45 patients, 37 underwent surgical intervention and 8 were treated conservatively. Ethical clearance was obtained by the Ethics Committee of the institute before commencement of the study.

All patients with intestinal obstruction who were admitted to Surgical 'II' unit of Pacific Institute of Medical Sciences, Udaipur through OPD, casualty and referrals from medical units and above age of 14 years were included in the study. Informed consent from patients/relative was obtained. The diagnosis of intestinal obstruction was made on the basis of detailed history, clinical findings, x-ray abdomen and ultra sound of the abdomen. Other investigations for fitness for anaesthesia, to exclude a dynamic cause and for the management of intestinal obstruction were carried out, i.e., complete blood picture, electrolytes, urea, creatinine, X-ray chest and ECG. Patients with non-mechanical obstruction were excluded from the study and those who responded to conservative measures were also excluded.

Laparotomy was performed in those cases who did not improve with conservative treatment and where mechanical cause of intestinal obstruction was suspected. Biopsy was taken where required for histopathological confirmation. operative details, e.g., causes, site of obstruction and operative procedure were recorded. The patients were followed for a period of two months for postoperative complications and mortality. Data were analysed using SPSS-18.

Results and Discussion:

All 45 cases of intestinal bowel obstruction was observed in this study presented with common symptoms of abdominal distension, absence of flatus and/or faeces. The present study group consisted of 45 cases between 14- 65 years of age of both genders. The mean age of the cases was 35.16±12.01. Clinical presentations of our cases are almost consistent with the study conducted by Ismail *et al*[3] and Qureshi MI *et al*[2]. The mean age of the patients was 37.4 years which is comparable with that reported by Ismail *et al* (37.5).[3] Markogiannakis H *et al*[5] reported mean age of the patients as 63.8±1.3 years while mean age of patients was 25 years in a study conducted by Drozdz W *et al*.[6] These gross discrepancies may be due to different disease patterns in different geographic regions of the world.

Table-1: Causes of intestinal Bowel obstruction:

S.N.	Cause of obstruction	Number
1.	Adhesion	20
2.	Hernia	06
3.	Volvulus	04
4.	Intestinal tuberculosis	08
5.	Malignancies	03
6.	Worms	02
7.	Faecal impaction	01
8.	others	01

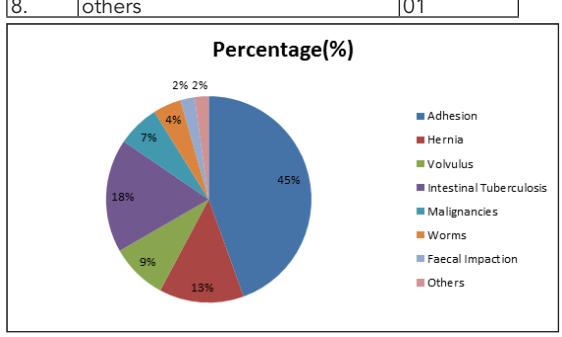

figure-1: Shows the percentage of intestinal obstruction by different causes:

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This present study the main cause of mechanical intestinal obstruction was adhesions followed by intestinal tuberculosis as the second most common cause. Ch AK *et al*[7] also reported that adhesion is the most common cause of intestinal obstruction followed by tuberculosis and malignancies. Qureshi MI *et al*[2] observed almost similar findings in their study where postoperative adhesions (38%) was the most common cause for mechanical small bowel obstruction. Weibel and Majno[8] in an autopsy study of 752 cadavers, found an incidence of adhesions of 67% in those that had undergone previous abdominal surgery.

Acute mechanical bowel obstruction is a common surgical emergency and a frequently encountered problem in abdominal surgery.[9] It constitutes a major cause of morbidity and financial expenditure in hospitals around the world and a significant cause of admissions to emergency surgical departments.[10,11] Intestinal obstruction belongs to highly severe conditions, requiring a quick and correct diagnosis as well as immediate, rational and effective therapy.[12] Surgeons are concerned about bowel obstruction cases because strangulation, causing bowel ischemia, necrosis and perforation might be involved, and it is often difficult to distinguish simple obstruction from strangulation. Accurate early recognition of intestinal strangulation in patients with mechanical bowel obstruction is important to decide on emergency surgery or to allow safe nonoperative management of carefully selected patients.[13] Although close and careful clinical evaluation, in conjunction with laboratory and radiologic studies, is essential for the decision of proper management of patients with acute mechanical bowel obstruction, a preoperative diagnosis of bowel strangulation cannot be made or excluded reliably by any known parameter, combinations of parameters, or experienced by clinical judgement. Mechanical bowel obstruction is an old and common surgical emergency. Immediate and correct diagnosis of this condition and its etiology is essential, and appropriate treatment is of utmost importance.[14,15] The clinical picture, however, of these patients along with the etiology of obstruction and strangulation prevalence are variable, while appropriate management remains controversial. We, therefore, conducted this prospective study to identify and analyse the clinical presentation of patients with acute mechanical bowel obstruction in our department the etiology of obstruction as well as management and outcome of these patients. Age incidence in our study was highest in the sixth decade of life and lowest in the first decade of life respectively. However age is no bar for the acute onset of small bowel obstruction. In early age groups the common causes are congenital bands and intussusceptions whereas adhesions and obstructed hernias are more common in later age groups. Sex ratio revealed that males were more prone to the occurrence of small bowel obstructions. There is no direct relation of intestinal obstruction with sex of the person. A remarkably high incidence was observed among cases belonging to the lower socio-economic strata. The cases reported to the hospital usually on the third day after development of symptoms. It was observed that prognosis and management among cases which reported earlier was better due to minimal chances of gut injury or strangulation. Degree of abdominal distension has a direct relation with the duration and intensity of the symptom. Abdominal tenderness was observed in thirty-seven cases and eleven cases revealed visible peristalsis. Both mild and moderate distensions were observed. Confirmation of small bowel obstruction was by radiologic and sonologic investigations. Presence of peristalsis helps to differentiate small bowel obstruction from a paralytic ileus.[16] Management of intestinal obstruction is directed at correcting physiologic derangements caused by the obstruction, bowel rest, and removing the source of obstruction.[17]

Conclusion:

These findings suggest that the abdominal distension along with absence of passage of flatus and/or faeces is the most common symptoms and physical finding of patients with acute mechanical bowel obstruction. Adhesions and Tuberculosis are the major causes of mechanical intestinal obstruction in this region. Further studies are necessary in order to determine appropriate management for treatment of these patients as well as to identify accurate early predictors of success of conservative or operative treatment and, particularly, of intestinal strangulation giving the greatest attention to reversible ischemia.

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