

Acute Intestinal Obstruction in Adults – Its Outcome a Prospective Study in a Tertiary Health Care Center in Andhra Pradesh.

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Abstract: Acute intestinal obstruction is a surgical emergency globally with high morbidity and mortality. It constitutes a major cause of morbidity and financial expenditure in hospitals around the world and a significant cause of admissions to emergency surgical department's immediate and correct diagnosis of the etiology is essential. The clinical picture, however of these patients along with management remains controversial. We therefore conducted this prospective study to identify and analyze 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.

Results: Of the 116 patients of acute intestinal obstruction, 78 patients suffered from bands and adhesions and 13 patients suffered from sigmoid volvulus. The mean age of the patients was 32 years, 28 patients suffered from gangrene of the bowel and mortality rate was 13%.

Keywords: Acute mechanical bowel obstruction, clinical presentation, etiology, management, outcome.

I. Introduction

In our Santhiram General Hospital, Intestinal Obstruction constituted 10% of all surgical emergencies. Strangulated bowel is seen in 10% of these cases. The most important concern regarding acute intestinal obstruction is its progression to strangulation¹, causing gangrene² and perforation due to the difficulty in distinguishing simple from strangulation obstruction. Therefore accurate and prompt recognition of bowel strangulation is important in deciding the need for early emergency surgery in such patients. Although careful clinical evaluation in conjunction with biochemical and radiological studies is essential, bowel strangulation still cannot be predicted preoperatively by any means with certainty. As reviewed from the literature, the clinical presentation, etiology and incidence of strangulation are variable, while the appropriate management remains controversial.

II. Objective

The objective of the study was to decide the various etiological factors³ of intestinal obstruction. The mode of presentation⁴ of intestinal obstruction depending on etiology and various factors which decide the outcome of the patient example, age, sex, time of presentation, etiological factors, Prediction of bowel devitalisation based on clinical and laboratory parameters and Prediction of outcome after surgery.

Table 1

Intestinal obstruction	Distribution of cases
Bands / adhesions	78
Small bowel volvulus	3
Sigmoid volvulus	13
Intussusception	4
Tuberculosis	7
Meckels diverticulum	2
Mesenteric vascular disease	3
Tumors	4
External hernias	2
	116

Figure 1

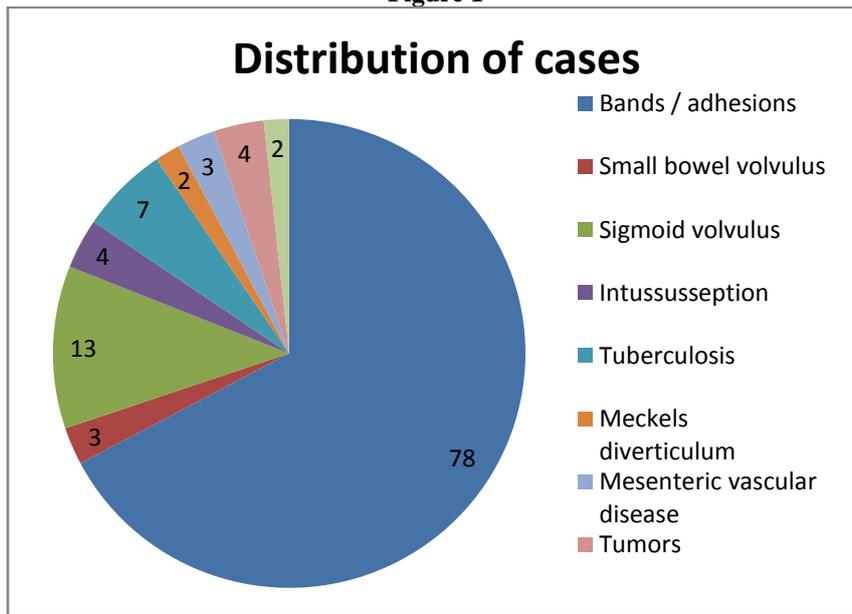
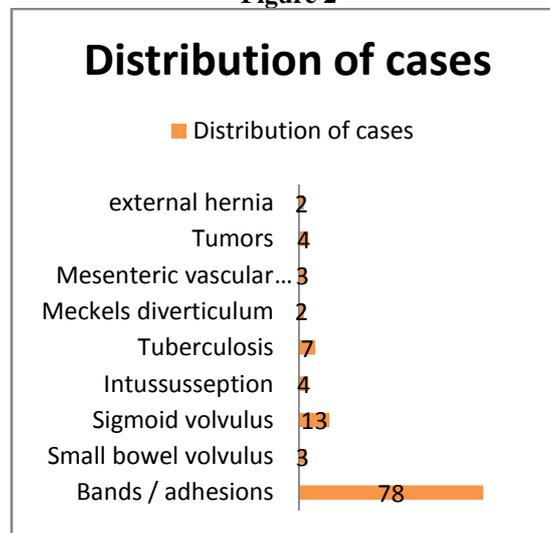


Figure 2



III. Materials And Methods

A prospective study of 116 patients, presenting with acute intestinal obstruction over a period of 3 years from 2013-2015 at Santhiram General Hospital, Nandyal, Kurnool (dist) was undertaken. All cases of intestinal obstruction treated by surgery in the three years were (2013-2015) included in the study. Patients with obstructed inguinal hernia and pyloric stenosis of various causes were excluded from this study. An analysis of all emergency procedures with special attention to their mortality rates on an average per year was undertaken. For the purpose of study particulars of the patient with regard to age, sex, clinical features, operative details and postoperative outcome were noted down. From these data critical evaluation⁵ was made regarding points in diagnosis, choice of operative procedure and prognostic indices. Clinical examination, X-ray findings⁶ and lab investigations were emphasized with regarding to diagnosis and prognosis.

IV. Discussion

Acute intestinal obstruction is one of the common life threatening emergencies all over the world. There is a global change in the spectrum of etiology of acute intestinal obstruction over the past few years. A number of recent studies have found adhesive obstruction⁷ to be the most common cause. Adhesions and hernias account for vast majority of small bowel obstruction and Volvulus and neoplasms are common causes of large bowel obstruction

The majority of our study group presented with acute mechanical small bowel obstruction. This has also been found in other studies with small bowel obstruction cases regarding clinical presentation of our patients, absence of passage of flatus and / or feces were the most frequent presenting symptoms and abdominal distention was the most common physical finding on clinical examination. Additionally vomiting, nausea, colicky abdominal pain, and abdominal discomfort were frequent symptoms on arrival. Our results, even though some differences are noticed, are in accordance with the literature.

Adhesions(Tab 1, Fig 1,2) constitute the most frequent causes of obstruction. This finding was also noticed in our study. Several studies postulate that adhesions are responsible for 32%-74% of bowel obstruction and are leading cause of it. The vast majority (65%-90%) of the patients with adhesive obstruction have undergone previous abdominal operations. In the present study, this was observed in all such patients. The increasing role of adhesions as a cause of acute intestinal obstruction demands greater need for routine preventive measures against adhesion formation.

A number of intra operative measures are now encouraged during elective abdominal surgery to reduce the incidence of adhesions that might subsequently produce intestinal obstruction. External plication procedures, pharmacologic agents, including corticosteroids and other anti-inflammatory agents, cytotoxic drugs, and antihistamines, anticoagulants, such as heparin, dextran solutions, dicumarol, and sodium citrate, intraperitoneal instillation of trypsin, papain, pepsin , Hyaluronidase, fibrinolytic agents such as streptokinase, urokinase, and fibrinolytic snake venoms are used to reduce recurrent intestinal obstruction .

Much attention should be paid to the treatment of these patients since the incidence of bowel ischemia, necrosis, and perforation is significantly high. Strangulation rate in the literature ranges from 7% to 42% .In addition, Kossietall reported an incidence of ischemia of 20% of necrosis of 8%, and of perforation of 2%. In the literature, complication rate ranges from 6% to 47% {10, 40} whereas mortality ranges from 2% to 19%.

In general, appropriate treatment of acute mechanical bowel obstruction as well as timing of surgery for patients selected to undergo operative intervention still remain controversial. Management⁸ of this condition requires careful assessment and awareness while the appropriate treatment needs to be tailored to the individual situation. Furthermore, no specific factors that may predict success of conservative⁹ or surgical management have been identified. Although modern surgical management continues to focus appropriately on avoiding operative delay whenever surgery is indicated, not every patient is always best served by immediate operation. As it was also proved in the present study, patients with clinical signs and symptoms suggestive of strangulation do require prompt operative intervention. Other conditions, however, such as postoperative adhesions, particularly in patients with numerous previous abdominal procedures or concomitant medical problems, often justifiably benefit from a trial of non-operative management^{10,11}.

Strangulated obstruction(Tab4, Fig3) requires emergency surgery, and early recognition is often lifesaving since delay in treatment is an independent predictive factor of mortality and in addition, bowel strangulation is an independent predictor of complication and even more of mortality rates(Tab 5) of patients with strangulated obstruction are 2 to 10 times higher than those of patients with non-strangulated obstruction. Moreover accurate early recognition of intestinal strangulation in patients with mechanical bowel obstruction is important to allow safe non operative management of carefully selected patients.

Traditionally such recognition is based on the presence of one or more of the classical signs, vascular compromise, continuous bowel pain, fever, tachycardia, peritoneal signs on physical examination, leukocytosis, and metabolic acidosis. Close and careful clinical evaluation¹¹ in conjunction with laboratory and radiologic studies, is essential for the decision of proper management of patients with acute mechanical bowel obstruction, if any uncertainty exists, prompt operative intervention is indicated.

Poor prognostic predictors are increasing age (Tab2) of patient, presence of comorbid conditions, presence of strangulated / non-viable bowel requiring resection of segment and the last but not the delay in institution of management.

Table 2

Age	Minimum	Maximum	Mean age
(In years)	13	85	32

Table 3

Sex	Males	Females
	88	28

Table 4

Causes of strangulation	Number
Small intestinal volvulus	01
Sigmoid volvulus	03
Intussusception	01
Adhesive bands	15
Meckelsdiverticulam with bands	01
Mesenteric vascular disease (gangrene bowel)	03
Strangulated hernias	4
	28

Figure 3

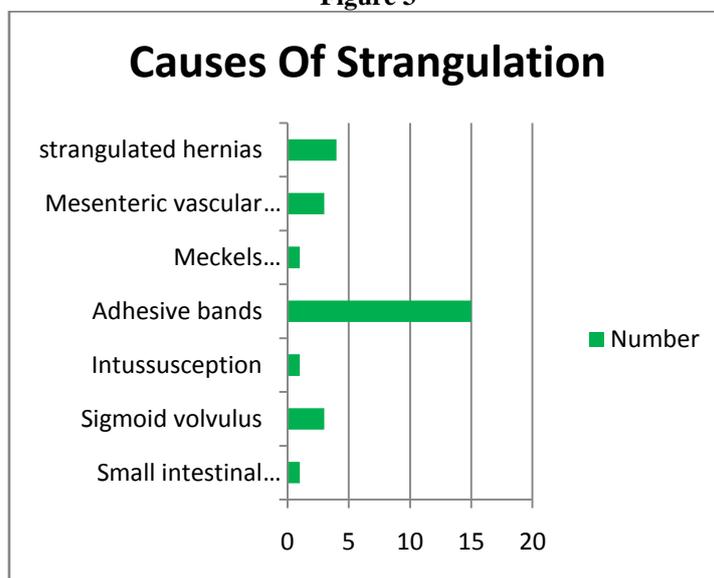


Table 5

Total number of intestinal obstruction	116
Simple obstruction	91
Strangulated bowel	28
Total number of deaths	12
Percentage of mortality	13%

Table 6

	Number
Total cases of intestinal obstruction	116
% of gangrene of bowel	24%

V. Conclusion

Acute intestinal obstruction remains a major cause of mortality in our environment, adhesions being the most common cause. The mortality has remained unacceptably high. It is apparent from this report that increased efforts to repair before strangulation occurs are likely to reduce the incidence and mortality from strangulated intestinal obstruction. In addition research aimed at finding ways to reduce adhesion formation may reduce the incidence of adhesive obstructions. For affected patients, high quality surgical expertise coupled with sound clinical judgment and early surgery when needed will greatly improve survival. Furthermore, a general improvement in health care infrastructure especially in the rural communities could further reduce mortality as patients may then present early.

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