

Prospective observational study of clinical spectrum and management of acute intestinal obstruction

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Abstract

Aim: Study of clinical spectrum and management of acute intestinal obstruction

Methods: This prospective study conducted in the Department of surgery, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India for 15 months. A total of 100 patients of acute intestinal obstruction were studied. Patients coming to the hospital with features suggestive of acute intestinal obstruction, Patients included were in age group of 20 years to 78 years and Patients were informed about the study prior to inclusion and were included after written consent.

Results: Maximum that is out of total 100 cases, 50 (50%) cases reported after 72 hours of onset of complaints and 39(39%) cases reported within 48-72 hours. 10 cases (10%) reported within 24-48 hours. The present study of acute intestinal obstruction showed that abdominal pain (91%), constipation (86%) and abdominal distension (74%) were the most common symptoms with which patients presented to us in emergency department. X-ray abdomen erect was done in all cases. The most common finding observed was distended small bowel loops with air fluid levels with absent colonic gas in 32 (32%) patients. Thus, X-ray abdomen erect was found useful in total 81(81%) cases. In our present study adhesiolysis procedure was carried out in 14(28%) cases. Single loop/band adhesions were separated easily followed by adhesiolysis of dense adhesion upto the level which relieves obstruction was done. In 4 patients of Koch's abdomen, adhesiolysis was done. Resection and anastomosis was carried out in 48 (35.56%) cases most commonly in large bowel obstruction.

Conclusion: Present study concluded that small bowel obstruction is more common than large bowel obstruction.

Keywords: adhesiolysis, acute intestinal obstruction, clinical spectrum

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Introduction

One of the most common intra-abdominal problems faced by general surgeons in their practice remains bowel obstruction. 12% to 16% of acute abdominal emergencies may be contributed to intestinal obstruction. With its multiple etiologies, intestinal obstruction of either the small or large bowel continues to be a major cause of morbidity and mortality.[1] The etiology of bowel obstruction has been varied with small intestinal obstruction caused by adhesions in 60%, strangulated hernia in 20%, malignancy in 5% and volvulus in 5%.[2] Small bowel obstruction (SBO) is more common and a challenging clinical problem. Large bowel obstruction (LBO) is most often the result of colorectal malignancies and the lesions usually arise in the sigmoid or recto sigmoid area.[3] Death due to acute intestinal obstruction is decreasing with better understanding of pathophysiology, improvement in diagnostic techniques, fluid and electrolyte correction, much potent antimicrobials and knowledge of intensive care. Surgical approaches that feature a staged approach may have a better outcome. The treatment of intestinal obstruction is varied, and has changed greatly during the past two centuries. Early diagnosis of obstruction, skillful operative management, proper technique during surgery and intensive postoperative treatment carries a grateful result.

Material and methods

This prospective study conducted in the Department of surgery, Anugrah Narayan Magadh Medical College and Hospital, Gaya, Bihar, India for 15 months. A total of 100 patients of acute intestinal obstruction was studied.

Inclusion criteria

- Patients coming to the hospital with features suggestive of acute intestinal obstruction.

- Patients included were in age group of 20 years to 78 years.
- Patients were informed about the study prior to inclusion and were included after written consent.

Exclusion criteria

- Patient of pseudo obstruction were excluded

Methodology

All patients with features of acute intestinal obstruction were assessed. pathological and biochemical test were conducted. Plain x ray erect abdomen, ultrasound and CECT abdomen was done. All patients were stabilised prior to surgery. Appropriate surgical intervention was done. Post-operative follow up was done.

Results:

Out of total 100 cases in the present study maximum cases were seen in 20-30 years age group 60-70 years age group. Incidence of small bowel obstruction was more in age less than 50 years while incidence of large bowel obstruction was more in age group above 50 years. In present study of acute intestinal obstruction in adults, out of total 100 cases, clear male predominance was seen with total 73 cases (73%) compared to females 27 cases (27%). Also, in both small and large bowel obstruction, males were more affected compared to females. Males: females in present study is 2.33:1 ratio. The present study revealed that though an acute condition, the time at which the patients reported in casualty was more than 48-72 hours. Maximum that is out of total 100 cases, 50 (50%) cases reported after 72 hours of onset of complaints and 39(39%) cases reported within 48-72 hours. 10 cases (10%) reported within 24-48 hours.

Table 1: Time of presentation of patients

Time of presentation	No. of patients	Percentage
Less than 24 hours	1	1
24-48 hours	10	10
48-72 hours	39	39
More than 72 hours	50	50
Total no. of patients	100	100

Table 2: Distribution on the basis of clinical features

Signs and symptoms	No. of patients	Percentage
Abdominal pain	91	91
Constipation	86	86
Abdominal distension	74	74
Nausea and vomiting	71	71
Anorexia	17	17
Weight loss	14	14
Haematochezia	10	10
Tenderness	73	73
Guarding and rigidity	36	36
PR growth/stricture	4	4

The present study of acute intestinal obstruction showed that abdominal pain (91%), constipation (86%) and abdominal

distension (74%) were the most common symptoms with which patients presented to us in emergency department.

Table 3: Features seen on x-ray abdomen erect

Findings	Cases	Percentage
Dilated small bowel loops with effacement of valvulae conniventes	6	6
Dilated small bowel loops with prominent valvulae conniventes	10	10
Dilated small bowel loop with multiple air fluid levels with absent colonic gases	32	32
String of beads sign	13	13
Bent inner tube sign	8	8
Distended colon with air fluid level	12	12

X-ray abdomen erect was done in all cases. The most common finding observed was distended small bowel loops with air fluid levels with absent colonic gas in 32 (32%) patients. Thus, X-ray abdomen erect was found useful in total 81(81%) cases.

Most common finding on ultrasound was dilated bowel loop with marked peristalsis (74%) cases suggestive of intestinal obstruction from any cause. 15(15%) cases had distended loops with no peristaltic

movements, more likely because of a dynamic obstruction or vascular occlusion causing bowel ischemia. Herniation of bowel loops through abnormal abdominal defect with obstructive features was observed in 21 (21%) patients. Luminal narrowing caused by stricture was seen in 5 (5%) cases. Growth within bowel wall obstructing the lumen suggestive of neoplastic etiology was seen in 7 (7%) cases.

Table 4: Features seen on ultrasound

Findings	Cases	Percentage
Distended small bowel loops with absent peristalsis	15	15
Distended small bowel loops with marked peristalsis	74	74
Growth within bowel wall protruding within lumen or stricture causing luminal compromise	12	12
Luminal obstruction by foreign bodies, gallstone or other causes	2	2
Bowel in bowel appearance	1	1
Dilated loop consistent with sigmoid	7	7
Herniating bowel loop form abdominal defect with proximal dilatation	21	21
Diminished vascularity with bowel wall necrosis or gangrene with absent peristalsis	7	7

Table 5: Etiological factors causing obstruction

Aetiology	Cases	Percentage
Adhesion	44	44
Obstructed hernia	21	21
Malignancy	14	14
Tuberculosis	9	9
Volvulus	7	7
Arterial thrombus with bowel gangrene	3	3
Intussusception	1	1
Miscellaneous	1	1

Total 50 patients with various types of adhesions causing bowel obstruction were identified. 36 out of 50 (72%) cases were operated previously for various causes. Obstructed hernia was second most common causes identified leading to obstructive symptoms in our study accounting for 10(20%) cases. Malignancy in the form of growth or stricture or metastases leading to obstruction was next most common cause found in present study.

In our present study adhesiolysis procedure was carried out in 14(28%) cases. Single loop/band adhesions were separated easily followed by adhesiolysis of dense adhesion upto the level which relieves obstruction was done. In 4 patients of Koch's abdomen, adhesiolysis was done. Resection and anastomosis was carried out in 48 (35.56%) cases most commonly in large bowel obstruction.

Table 6: Different operative intervention in acute intestinal obstruction

Operative procedure	Cases=50	Percentage
Adhesiolysis	14	28
Resection and anastomosis	18	36
Enterostomy	6	12
Hernioplasty	10	20

Adhesiolysis with perforation closure	1	2
Exteriorization of involved segment	1	2

All patients were assessed for post-operative complications. Total 40 (40%) developed complications.

Discussion:

Acute intestinal obstruction is one of the most common surgical emergencies. The dictum of never let the sun set or rise in small bowel obstruction, has made early surgical intervention necessary for acute intestinal obstruction.[4]

In present study the age group was from 20 to 78 years with most common age groups affected were, 20-30 years and 60-70 years with mean age being 46.87 years. This was in concordance with the studies conducted by Sarvanan PS et al, Ooko PB et al, Adhikari et al and E o Ojo et al in which the cases of acute intestinal obstruction occur commonly in age group 30-50years, 31-40 years, 30-50 years and 20-40 years respectively.[5-8] In study conducted by GJ Cole et al most common age group affected was 31-40 years.[9] The present study on acute intestinal obstruction in adults shows clear preponderance of male sex over female sex with 73 (73%) males and 27(27%) females. Ratio of male: female in our study is 2.33:1. Souvik and Hossein et al in their study reported male incidence 75.2% while female incidence 24.79% with male: female ratio as 3:1.[7] In our present study, most common case of obstruction was post-operative adhesions (44%) which is comparable with study by Naveen et al in which the incidence of adhesion was 42% cases.[10] The present study of acute intestinal obstruction showed that abdominal pain (91%), constipation (86%) and abdominal distension (74%) were the most common symptoms with which patients presented to us in emergency department. Markogianonakis H et al in their study showed that abdominal pain (74%),

vomiting (78.6%) and constipation (90%) formed the major symptoms while the major signs included increase bowel sound (66%), abdominal distention (65.3%) and guarding (37.3%).[11]

The present study showed that plain abdominal radiography is useful in diagnosis of bowel obstruction in 81.48% cases. Ultrasound of abdomen was found more useful in diagnosis of bowel obstruction. Most common finding on ultrasound was dilated bowel loop with marked peristalsis (74%). Lassandro F et al reported in their study that bowel loop dilatation is the most common finding in SBO in both X ray erect abdomen (71.2%) and abdominal ultrasound (48.5%).[12,13]

The various methods used for treating the cases acute intestinal obstruction was compared with studies of Souvik et al.⁷ Septicaemia (26%) and wound infection (30%) are the most common complication which is well comparable with study by Souvik, Hossein et al.[7] Present study revealed overall mortality of 16% with septicaemia (78) and anastomotic leak (36%) were the major complications leading to mortality. Souvik et al reported overall mortality rate of 7.35% while Naveen et al reported overall mortality of 10% cases.[10]

Conclusion:

Present study concluded that small bowel obstruction is more common than large bowel obstruction. Abdominal pain, constipation and distension are the most common symptoms, while increased bowel sounds, tachycardia and tenderness are the most common signs. Post-operative adhesion in small bowel and malignancy in large bowel is major cause of acute intestinal obstruction. X ray abdomen erect and ultrasound is helpful in diagnosis for

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