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Original Research Article

Subacute Intestinal Obstruction: An Experience in Eastern India

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Abstract: Around 356 patients presented with subacute intestinal obstruction. All presented with symptoms of nausea, vomiting, abdominal distension and obstipation 143 (40.1%) were managed surgically (emergency and elective surgeries) and 213 (59.8%) managed conservatively. Along with routine investigations, some patients required diagnostic laparoscopy when there was a diagnostic dilemma. Some patients required investigations like CECT abdomen & pelvis and CBNAAT for tuberculosis. Frequent causes of subacute intestinal obstruction are post-operative adhesions in 129 (36.2%), intestinal tuberculosis in 98 (27.5%), bands and adhesions in 48 (13.5%). Usual surgery done was resection and anastomosis of the affected gangrenous part with ileostomy or colostomy and the commonest site affected was ileum.
Keywords: SAIO, ileostomy, colostomy, intussuception, band & adhesions, volvulus.

INTRODUCTION

Intestinal obstruction is a common medical problem & accounts for a large percentage of surgical admission for acute abdominal pain [1]. It may be acute, subacute or chronic depending upon the clinical presentations. The natural history of the condition, its response to the treatment and the associated morbidity and mortality, all vary according to types of obstruction present. It may be small bowel or large bowel obstruction where small bowel obstructions account for 12-16% of surgical admissions for acute abdominal condition [2]. Subacute intestinal obstruction is one of the commonest surgical emergencies and its etiology varies from place to place. The most common cause is postoperative adhesive obstructions which constitutes 75% of all cases. Other causes are intestinal tuberculosis, bands and adhesions, intussusception, volvulus, mass lesion such as neoplasms, crohn's disease, ischemia etc. It is usually diagnosed by radiological investigations, and in some cases diagnostic laparoscopy. The common symptoms are nausea, vomiting, abdominal pain with distension and obstipation. Majority of patients are managed conservatively.

AIMS AND BACKGROUND

Subacute intestinal obstruction is one of the most common admitting diagnosis in surgery, yet these patients might be the most difficult to manage. According to etiology of symptomatic progression of the patient, conservative or operative management is decided. This is a study conducted in a tertiary care hospital in eastern India aiming to provide detailed description of etiology, progression, and management of subacute intestinal obstruction in our patients.

MATERIALS AND METHODS

Patients and methods

This is a retrospective study done at SCB medical college and hospital, in department of general and laparoscopic surgery between January 2014 – December 2016 with the diagnosis of subacute intestinal obstruction. We included patients of both small and large bowel obstruction having abdominal pain and distension, obstipation, nausea and vomiting supplemented with a positive abdominal radiograph. These features in the history supplemented by a clinical examination particularly focusing on abdominal girth. We excluded all the subacute intestinal obstruction which are due to functional obstruction like any paralytic ileus due to electrolyte imbalance or neurogenic disturbances. We also excluded those cases where the cause is due to some medical condition like DM, renal failure, hypothyroidism, or use of any medication. And also patients of any chronic illness who develop idiopathic intestinal pseudo obstruction mainly due impaired motor response to intestinal distension.

In this way we selected 356 patients. We worked up the patients by taking detailed history and clinical examination. All the routine hematological investigations including HIV, HBsAg, HCV, and radiological investigations are done. In hematological investigations we did complete blood count, biochemical profile. Then all the patients were evaluated with radiograph of chest, abdomen & pelvis

in upright posture, USG of abdomen and pelvis. CECT of abdomen and pelvis, diagnostic laparoscopy done in those patients who did not have previous history of abdomen surgery and were in a dilemma. Exploratory laparotomy done in 143 (40.1%) patients.

RESULTS

A total of 356 patients with subacute intestinal obstruction were selected for this study from January 2014- December 2016. Of them, 208 (58.4%) were male and 148 (41.6%) were female. Males outnumber females in a ratio of 1.4:1 (M:F).Commonest age group effected are 40-60 years.

Table-1: Age distribution of patients with subacute intestinal obstruction.

Age range (years)	No of patients
<20	26
20-40	87
40-60	118
60-80	105
>80	20

Regarding the etiology of subacute intestinal obstruction in our study, the most common cause is postoperative adhesions in 129 (36.2%) patients followed by intestinal TB in 98 (27.5%). The les common causes are bands and adhesions, abdominal malignancies, intussusceptions, volvulus and miscellaneous. We found carcinomatosis peritonei, crohn's disease and ulcerative colitis as miscellaneous causes.

Table-2: Etiology of subacute intestinal obstruction in our series

Etiology	No of patients %
Postoperative adhesions	129 (36.2%)
Intestinal TB	98 (27.5%)
Bands and adhesions	48 (13.5%)
Abdominal malignancy	30 (8.4%)
Intussusception	22 (6.1%)
Volvulus	20 (5.6%)
Miscellaneous	9 (2.5%)

Patients were managed either conservatively or by operative intervention according to improvements of signs and symptoms after 48- 72 hrs. Factors prompting surgical intervention include worsening of abdominal pain and distention, high grade fever, peritonitis, and leucocytosis, failure of improvement of obstruction after 48-72 hrs or progression to complete obstruction. After exploratory laparotomy surgical procedure done based on the intra-op findings. Postoperative adhesions in 116 (89.9%) out of 129 patients were managed conservatively by nasogastric aspiration, intra venous fluids, antibiotics in some cases, and antispasmodic. Adhesiolysis and resection & anastomosis of gut were done in 13 (10%) patients whenever gangrenous bowel was found. Non operative management done in 59 (60%) of intestinal tuberculosis in our series. In 39 (40%) patients we preferred surgery as they had increasing distension, tachycardia, and failure of conservative management even after 3 days. We used to do ileocaecal resection with ileo ascending anastomosis in these cases. In bands and adhesions the usual site affected is ileum, band removal and resection and anastomosis done in patients with gangrenous bowel. In case abdominal malignancy, conservative management was done in 4 (13%) patients those who were elderly moribund with co-morbid factors. In emergency basis we did loop colostomy or loop ileostomy depending upon the site of obstruction and later on definitive procedure was done electively. We operated all the cases of intussusceptions by doing resection and anastomosis. In volvulus we managed 3 (15%) conservatively by giving flatus tube in elderly moribund and not fit for surgery patients. And in rest of the cases 17 (85%) we managed by doing resection and anastomosis of affected bowel, & end colostomy with hartman's procedures in gangrenous sigmoid volvulus. Miscellaneous cases were treated appropriately.

Table-3: Management of patients with subacute intestinal obstruction

Etiology	Management	
	Conservative	Surgery
Post operative adhesions (129)	116 (89.9%)	13 (10%)
Intestinal TB (98)	59 (60.2%)	39 (39.8%)
Bands and adhesions (48)	28 (58.3%)	20 (41.7%)
Abdominal malignancy (30)	4 (13.3%)	26 (86.7%)
Intussusception (22)	0	22 (100%)
Volvulus (20)	3 (15%)	17 (85%)
Miscellaneous (9)	3 (33.3%)	6 (66.7%)
356	213 (59.8%)	143 (40.1%)

Complications in the postoperative period occurred in 35 (24.7%) patients. Of these 27 (18%) patients had wound infection, 7 (4.9%) patients had wound dehiscence, anastomotic leakage in 3 (2%) patients, sepsis in 6 (4.1%) patients mainly of immune compromised conditions like tuberculosis, AIDS patients. Respiratory complications developed mostly in elderly patients and in chronic smokers. In our series we found wound infection as the most common complication. Secondary suture applied in all cases of wound dehiscence and in few cases of wound infections. In our case series the mortality rate was 11 (3%) managed among both conservative and operatively treated.

DISCUSSION

Subacute intestinal obstruction is one of the most common surgical emergencies. It affect both small and large bowel. From various etiologies of subacute intestinal obstruction - intra abdominal adhesions related to prior abdominal surgery account for up to 75% cases of small bowel obstructions [3]. Adhesions are the major cause of bowel obstruction, obstruction resulting from adhesions can occur as early as one month or as late as 20 years after surgery [4]. Less prevalent etiologies for small bowel obstruction include hernias, malignant bowel obstruction and crohn's disease [5]. The most common cause of subacute intestinal obstruction due to colonic obstruction is colon cancers, strictures and diverticulitis [6]. In our series we had (36.2%) of patients of postoperative adhesions causing SAIO which is nearly correlating with the previous studies. This is followed by intestinal tuberculosis (27.5%) and bands and adhesions (13.5%). What we found in our studies that ileum is the commonest site affected, whether it is due to post-operative adhesions or intestinal tuberculosis, but in malignancy and volvulus commonly large bowel affected.

Though tuberculosis is prevalent in Indian subcontinent, we had 27.5% of patients of intestinal tuberculosis causing obstruction. In our study males outnumber females (1.4:1) though there is very minimal difference. According to some studies non operative management of subacute intestinal obstruction is highly successful and carries an acceptably low morbidity and mortality.

Even if bowel function does not return within 24 hours but a partial obstruction is demonstrated, continued observation is safe and resolution without operation is highly probable [7 & 8]. In our series we managed almost more than half ie, 59.8% of our patients conservatively. According to Shackelford et al, most cases of potential small bowel obstruction secondary to adhesions resolve when managed conservatively, with only 10-20% requiring operative correction [9]. A critical factor in managing these patients is to determine when to subject these patients to surgery. Patients undergoing non operative therapy should be closely monitored for signs suggestive of peritonitis, the development of which would mandate urgent surgery. Some studies suggest that the nature of the previous abdominal operation or the type of adhesions present may influence the probability that the obstruction will respond to medical therapy [10, 11]. Early postoperative obstruction is caused by adhesions in about 90% of patients [12, 13]. When operative adhesiolysis is performed the mortality is 5% for all patients [14]. However it may be as high as 30% for patients with strangulation or necrotic bowel necessitating intestinal resection [15]. According to some studies drainage volume of gastric aspirate, particularly on hospital day 3 appears to be another important factor to consider when deciding if a patient should progress to operative therapy [16]. The risk of intestinal strangulation in patients with postoperative adhesive obstructions is extremely low (<1%) [12]. In our study we managed 89.9% of patients conservatively and rest10% by surgery. We also managed our patients of intestinal tuberculosis (39.8%) surgically as most of those patients were cachexic and extremely malnourished.

Recurrent attacks of subacute intestinal obstruction were present in our patients of bands and adhesions which were managed conservatively previously. We operated those cases of bands and adhesions where there is failure of non operative therapy after 48-72 hours. We operated almost all cases of malignancies, volvulus and intussusceptions. Mortality rate is comparable and two most common causes are sepsis and malnutrition. There has been some improvement in patient outcome over the years,

however with mortality from small bowel obstruction declining from 50% in 1900 to < 3% today [2].

CONCLUSION

Our study reveals that subacute intestional obstruction comprises of a major percentage of surgical emergencies in a tertiary care hospital in eastern India where postoperative adhesion is the most common cause followed by intestinal tuberculosis. It also highlights that majority of patients were managed conservatively and factors prompting surgery depends upon individual cases.

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