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Original Research Article

Clinical study of acute intestinal obstruction in tertiary care centre

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ABSTRACT

Background: Acute intestinal obstruction is one of common abdominal emergencies and is associated with significant morbidity and mortality, especially if it progresses to bowel ischemia. The aim of this study is to analyse various modes of presentation of acute intestinal obstruction in both children and adult age group, etiopathogenesis, various therapeutic modalities of treatment and to accomplish operative management and anticipate the post-operative complication.
Methods: Fifty consecutive patients of all age groups presenting with acute intestinal obstruction were admitted in SN Medical College HSK hospital were taken randomly and managed between February 2013 to February 2016. A detailed examination was done as per proforma after admission. Plain X-ray erect abdomen was done in all cases except inguinal hernias with obstruction.
Results: Mean age distribution was 35.4 years. Incidence in male was more compared to female. Pain abdomen was found in 39 (78%), vomiting in 35 (70%), distension abdomen in 29 (58%) and constipation in 26 (52%) patients as main complaint. Commonest cause was postoperative adhesions. Mean duration of stay in hospital was between 1-5 weeks (average 2 weeks).
Conclusions: All age groups were involved. More commonly found in males than females. Main complaint was pain abdomen followed by vomiting, distension and constipation. Plain X-ray abdomen and ultrasonography were important. Pathology ranged from simple bands to malignant obstruction. Postoperative adhesions were the commonest cause of obstruction. Earlier the presentation better the outcome was found.

Keywords: Intestinal obstruction, Intussusception, Resection and anastomosis

INTRODUCTION

Acute intestinal obstruction is one of the commonest surgical emergencies in all age groups. Mode of presentation is same in all but underlying cause varies in each age group. In earlier part of century mortality and morbidity was very high. Now with better understanding of pathophysiology, improvement in radiological techniques of diagnosis and high degree of refinement in correction of fluid and electrolyte imbalance, introduction of antibiotics to effective bacteriological control, introduction of techniques in gastrointestinal decompression, new surgical principles and primary anastomosis has replaced staged procedures and number of days in hospital stay. Improvement in field of anesthesia has all contributed to lowering the morbidity and mortality. Mechanical obstruction is the cause of about 5 to 15% of cases of severe abdominal pain of sudden onset requiring admission to hospital.[1,2]

METHODS

The aims of this study are to analyse the different modes of presentations of acute intestinal obstruction in children and adults, the various causes of acute intestinal obstruction, accomplish the operative management and to

anticipate the postoperative complications and their management.

A total number of 50 cases of acute intestinal obstruction have been studied between February 2013 to February 2016.

Patients with all age group who attended to OPD and Emergency Department at SN Medical College and HSK hospital, Bagalkot, with history and clinical picture suggestive of acute intestinal obstruction, also the patients who had hernia with recent onset of irreducibility, pain, vomiting and constipation were included in this study.

All patients with provisional diagnosis of acute intestinal obstruction were assessed clinically in detail after admission. Patients with history of subacute intestinal obstruction and paralytic ileus were excluded from this study.

On admission, a relevant pathological and biochemical investigations were carried out in all cases. Plain X-ray erect abdomen was carried out in almost all patients. Ultrasonography and CT abdomen was done in some cases whose diagnosis by X-ray was inconclusive.

Prior to surgery stabilization of patients with shock, correction of electrolyte imbalance and nasogastric decompression was done. Appropriate surgical procedure was carried out. Postoperative follow up period ranged between 2-6 month from time of discharge. Some patients were not regular in their follow up visits. The results were tabulated according to age, sex, symptoms, signs, probable causative factors, operative findings, operative procedure adopted and post-operative complications.

RESULTS

The study was done in all groups with a mean age of 35 years. Age distribution was as shown in Table 1. Occurrence of acute intestinal obstruction was common in male (72%) with comparison to female (28%).

Table 1: Age distribution.

Age	Total cases
0-10	12
11-20	04
21-30	07
31-40	05
41-50	09
51-60	03
61-70	04
71-80	04
81-90	02

There were more of small bowel obstruction (41) when compared to large bowel obstruction (Table 2).

Table 2: Levels of obstruction.

Small Bowel	Large bowel
41	9

High small bowel obstruction was seen in 10 cases, low small bowel obstruction in 31 cases and large bowel obstruction in 09 cases.

Maximum presenting symptoms in this study was pain abdomen (78%), vomiting (70%), distension of abdomen (58%) and constipation (52%), most of patients with overlapping of symptoms (Table 3).

Symptoms and signs	No. of cases	Percentage
Pain abdomen	39	78
Vomiting	35	70
Tenderness	43	86
Abdominal distention	29	58
Constipation	26	52
Increased bowel sounds	18	36
Absent bowel sounds	7	14
Decreased bowel sounds	10	20
Groin swelling	9	18
Visible peristalsis	8	16
Guarding	21	42
Rigidity	2	4
Palpable mass	-	-
Significant PR findings	1	2

Etiology of small bowel obstruction; 41 cases (82%) was as shown in Table 4. Adhesions accounted for majority of obstruction.

Table 4: Small bowel obstruction, 41 cases (82%).

Causes	Cases	Percentage
Adhesions	13	26
Obstructed hernias	9	18
Small bowel volvulus	7	14
Bands	6	12
TB stricture	2	4
Meckel's diverticulum	1	2
Intussusception	2	4
Meconium ileus	1	2

Causes for Large bowel obstruction -09 cases (18%) was as shown in Table 5. Malignancies were common cause of large bowel obstruction.

Resection anastomosis (11 cases) and adhesiolysis (11 cases) was carried out as shown in Table 6. Procedures done for large bowel obstruction shown in Table 7.

Table 5: Large bowel obstruction, 09 cases (18%).

Causes	Cases	Percentage
Neoplasms	3	6
Hirschprung's	3	6
Volvulus	2	4
Intussusception	1	2

Table 6: Small bowel obstruction, 41 cases.

Causes	Cases
Adhesiolysis	11
Resection and anastomosis	11
Band release	05
Volvulus derotation	03
Hernia repair	05
Resection and hernia repair	04
Meckel's diverticulectomy	01
Meconium ileus (resection and stoma)	01
Total	41

Table 7: Large bowel obstruction, 09 cases.

Causes	Cases
Resection and anastomosis	03
Colostomy	05
Milking of intussusceptions	01
Total	09

Table 8 shows complications in 50 cases of acute intestinal obstruction. Post-operative wound infection and chest infection were common causes of morbidity.

Table 8: Complications in 50 cases of acute intestinal obstruction.

Particulars	No. of cases	Percentage
Morbidity	18	36
Mortality	07	14

Mortality (7 cases) was due to, Septicemia (3 cases), respiratory infection-pneumonia (2 cases), multi organ failure (1 case) and hypothermia (1 case). Presence of strangulation and comorbid conditions added mortality.

DISCUSSION

About 3.2 million cases of bowel obstruction occurred in 2015 which resulted in 264,000 deaths.[3,4] Both sexes are equally affected and the condition can occur at any age.[5] Bowel obstruction has been documented throughout history with cases detailed in the Ebers Papyrus of 1550 BC and by Hippocrates.[6,7]

Causes of bowel obstruction include adhesions, hernias, volvulus, endometriosis, inflammatory bowel disease, appendicitis, tumors, diverticulitis, ischemic bowel, tuberculosis, and intussusception.[1,2] Small bowel obstructions are most often due to adhesions and hernias while large bowel obstructions are most often due to tumors and volvulus.[1,2] The diagnosis may be made on plain X-rays; however, CT scan is more accurate. Ultrasound or MRI may help in the diagnosis of children or pregnant women.[1]

The condition may be treated conservatively or with surgery.[2] In small bowel obstruction about 25% require surgery.[5] Complications may include sepsis, bowel ischemia, and bowel perforation.[1]

The prognosis for non-ischemic cases of small bowel obstruction is good with mortality rates of 3-5%, while prognosis for small bowel obstruction with ischemia is with mortality rates as high as 30%.

Cases of large bowel obstruction related to cancer are more complicated and require additional intervention to address the malignancy, recurrence, and metastasis, and thus are associated with poorer prognosis.

CONCLUSION

Following conclusions are derived from the study of 50 cases of acute intestinal

Obstruction in SN medical college, Bagalkot. The occurrence of acute intestinal obstruction is more in small bowel. All age groups were involved. Depending upon the age the etiology differs.

The incidence of intestinal obstruction is more common in males compared to females. Intestinal obstruction was found more common in young children (first decade). Mode of presentation also differs in different levels of intestinal obstruction, small bowel obstruction mainly presents with colicky abdominal pain and vomiting, as compared to large bowel obstruction where distention and constipation were predominant symptoms. Adhesions accounted for majority of small bowel obstruction (26%).

Malignancies are common causes of large bowel obstruction. The clinical examination stressed upon vital signs, per abdominal examination. Routine necessary investigations were carried out. Plain X-ray erect abdomen is the single important diagnostic tool for diagnosing intestinal obstruction and its level of obstruction. The distal the obstruction the greater the accuracy found. Early recognition and timely intervention is important to prevent the bowel going for gangrenous changes.

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