

A STUDY ON INTESTINAL OBSTRUCTION

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ABSTRACT

Acute intestinal obstruction persists to be most common surgical emergency. In our study a total number of 12,233 patients were admitted in the surgery department from March 2016 to December 2017. A total number of 228 patients presented with features of acute bowel obstruction. Among these 50 of the operated patients were randomly selected for the study.

INTRODUCTION

Bowel obstruction remains one of the most common intra – abdominal problems faced by general surgeons in their practice whether caused by hernia, neoplasm, adhesions or related to biochemical disturbances, intestinal obstruction of either the small or large bowel continues to be a major cause of morbidity and mortality. They account for 12% to 16% of surgical admissions for acute abdominal complaints. Manifestations of acute intestinal obstruction can range from a fairly good appearance with only slight abdominal discomfort and distension to a state hypovolemic or septic shock (or both) requiring an emergency operation.

The death due to acute intestinal obstruction is decreasing with better understanding of pathophysiology, improvement in diagnostic techniques, fluid and electrolytes correction, much potent anti – microbials and increased knowledge among general public.

Early diagnosis of obstruction, skillful operative management, proper technique during surgery and intensive postoperative treatment carries a better result.

AIMS AND OBJECTIVES

1. To study the various ways of presentation, various etiologies, importance of early recognition, diagnosis and management.
2. To study the various influencing factors like age, sex, diet and socio – economic status in the pathogenesis of acute intestinal obstruction.
3. To study the morbidity and mortality rates in acute bowel obstruction.

MATERIALS AND METHODS

The materials for this clinical study on intestinal obstruction were collected from cases admitted to various surgical wards in Thanjavur medical college Hospital attached to Thanjavur Medical College, Thanjavur, during the period from March 2016 to December 2017, fifty cases of intestinal obstruction have been studied. Patients belonged to the age group ranging from 12 years to 85 years, paediatric age group being excluded from this study. The criteria for selection of cases was based on the clinical history, physical examination findings, radiological and haematological investigations. Patients who had subacute Intestinal obstruction, who were treated conservatively were excluded from the study, and only those patients of acute intestinal obstruction which were managed surgically have been studied to establish the pathology of intestinal obstruction with an aim to identify the mode of presentation, physical findings, radiological and haematological findings, operative findings and outcome of acute bowel obstruction. After admission of the patient, clinical data were recorded according to the

Proforma. The diagnosis was mainly based on clinical examination and often supported by haematological and radiological examinations.

A complete detailed history was obtained from the patient and the complaints were entered in the proforma in a chronological order. Each complaint in the history of presenting illness has been documented in detailed enquiry.

Physical examination – evidence of dehydration and its severity were looked into and vital parameters were recorded, Abdominal examination was done, digital rectal examination was done and findings were noted, All other systems were examined carefully to rule out any associated anomalies and to assess the fitness for surgery.

Laboratory examination: Haemoglobin estimation, Bleeding and clotting times, Blood grouping and Rh typing

Radiological examination viz., erect abdomen X – ray, ultrasound examination, CT abdomen was done.

SURGICAL MANAGEMENT

Immediately after the admission resuscitation with IV fluids is done till the hydration and urine output become normal. Nasogastric decompression with Ryles tube insertion is carried out and antibiotic prophylaxis is started. A close observation of all vital parameters (like pulse rate, BP, RR, urine output, abdominal girth, bowel sounds and tenderness and guarding) was done. Emergency blood transfusion was given in required cases. Patients who showed a reduction in the abdominal distension and improvement in the general condition especially in those with postoperative adhesions, conservative treatment was confined (by extending the supportive treatment) for next 24 hours, those who showed improvement by moving bowels or reduction in pain / tenderness were considered for further conservative treatment and such individuals are

excluded from this study. Patients with clear – cut signs and symptoms of acute obstruction had been managed by appropriate surgical procedure after initial resuscitation. Surgery adopted and the criteria for deciding the procedure were noted, e.g. release of a band or an adhesion, reduction and caecopexy for intussusception, resection and anastomosis for gangrenous intestine and release and repair for strangulated obstruction. Histopathological examination of the specimen of resection / biopsy was undertaken whenever necessary. The postoperative period had been monitored carefully and all the parameters were recorded hourly or fourth hourly basis depending on the patient's general condition and toxemia. Postoperatively Nasogastric tube aspiration, intravenous fluids and antibiotics were administered. Any complications were noted and treated accordingly. Postoperative follow – up after the discharge of patients was done in majority of the patients till 6 months. Most of the patients did not turn up for follow up after one or two visits. The results are tabulated stressing on the following points like age, sex, symptoms, examination findings, investigations, abnormalities, possible causative factors, operative findings and operative procedure that is adopted and complications if any.

Statistical methods: Chi – square and Fisher Exact test has been used to find the significance of proportion of Postoperative complications in association with etiology of acute Intestinal Obstruction.

RESULTS

The incidence of acute bowel obstruction in adult age group was studied from the cases admitted in Department of Surgery of Thanjavur Medical College Hospital attached to the Thanjavur Medical College, Thanjavur during the period March 2016 to December 2017. The data on the symptoms and the signs and laboratory investigations has been adopted in 50 cases during this study period. During the period of 20 months, the total number of admissions in surgery were

12,233 patients, of which 228 cases with acute intestinal obstruction were treated during this period, which comprise 1.9% of the total admissions. Among these surgically managed cases, 50 cases were randomly selected for the present study.

Table 1: Age incidence

Age (years)	Male	Female	Total
11 to 20	5	1	6
21 to 30	5	3	8
31 to 40	7	3	10
41 to 50	3	1	4
51 to 60	8	2	10
61 to 70	5	3	8
71 to 80	2	1	3
81 to 90	1	0	1
Total	36	14	50

Chart 1 AGE INCIDENCE

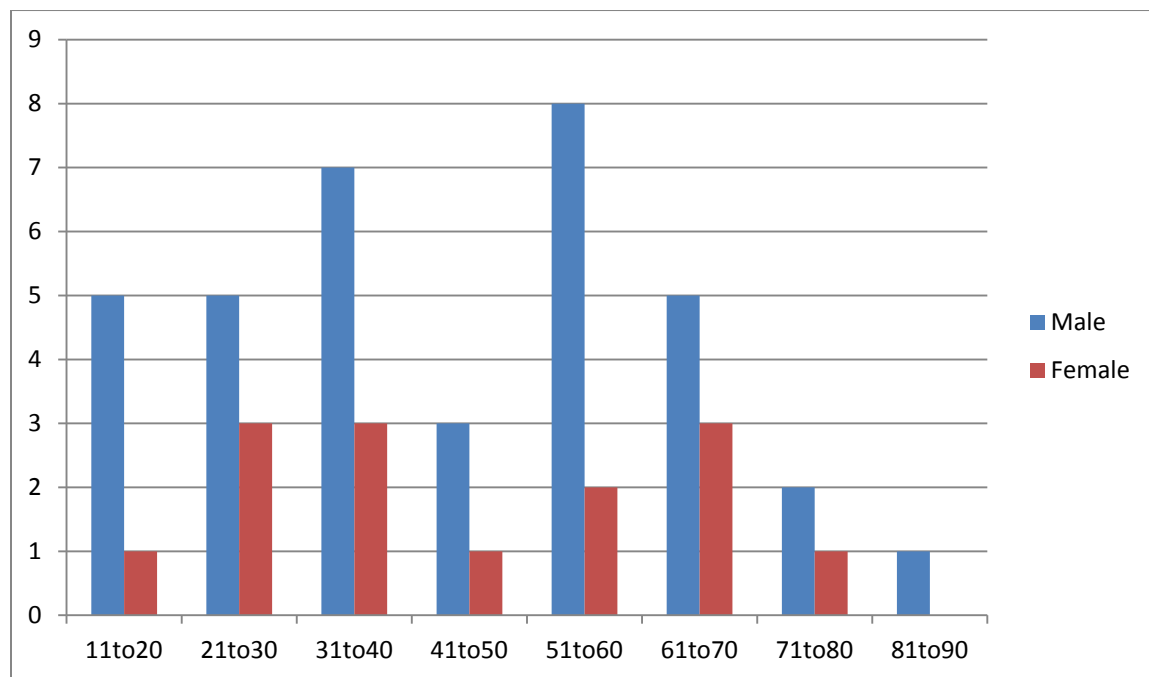
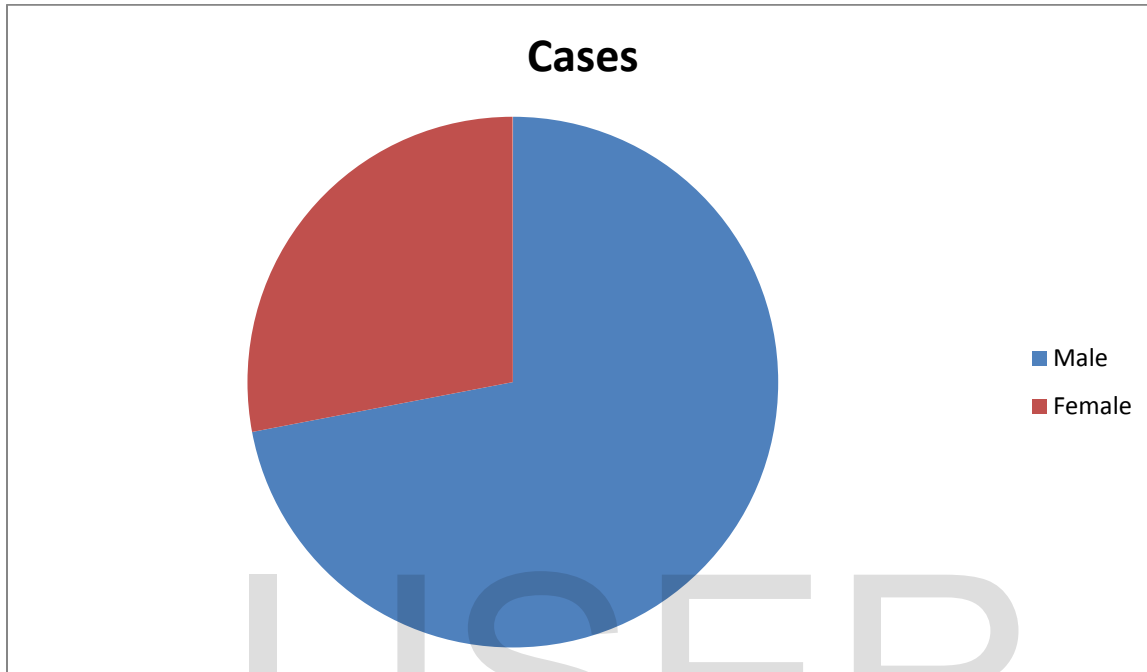


CHART 2: Sex incidence



According to the above table and bar chart, the peak incidence in the present study group is 31-40 and 51-60 with each consisting of 10 cases out of 50 cases.

2: Sex incidence

Sex	Number of Cases	Percentage
Male	36	72
Female	14	28

Male patients were more commonly affected when compared with females in the ratio of 4:1 in the above table.

Table 3: Socio – economic status

Socio – economic status	Number of cases	Percentage
Poor	38	76
Middle	12	24
Upper	0	0
Total	50	100

CHART 3: Socio – economic status

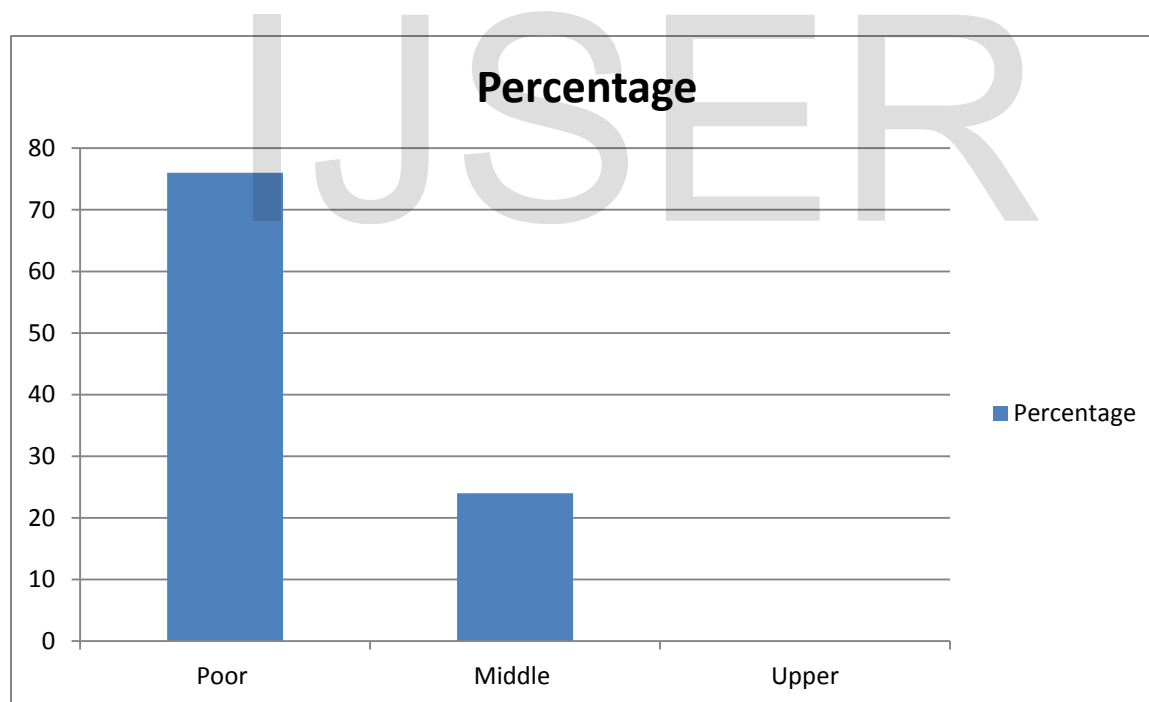


CHART 4: Diet

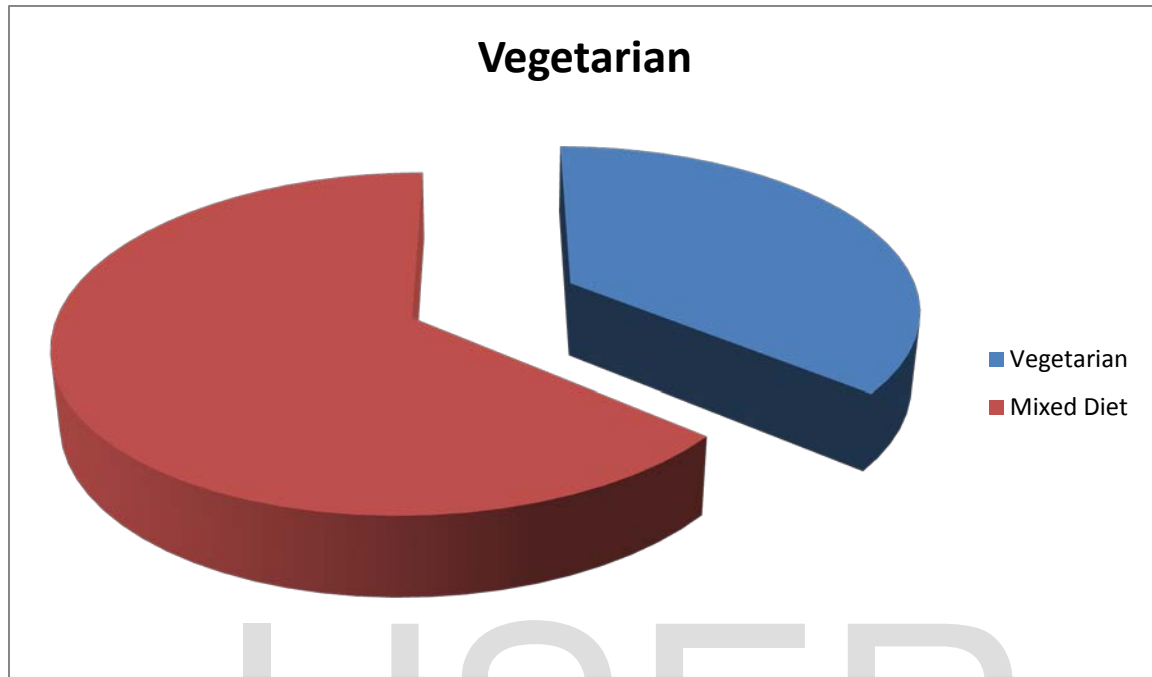


Table 4: Diet

Diet	Number of cases	Percentage
Vegetarian	18	36
Non – vegetarian	32	64
Total	50	100

In the present study consisting of 50 cases, 32 patients were taking non – vegetarian diet which contains more of fatty diets. The remaining 18 patients were vegetarian which often contained high fibre content.

Table 5: Symptoms and signs

Symptoms	Signs
Abdominal Pain	Tachycardia
Vomiting	Previous surgical scar
Abd. Distension	Tenderness
Constipation	Rigidity
	Mass
	Visible peristalsis

In the present study, the most common symptoms were pain abdomen (88%) and vomiting (78%) and the most common signs were tachycardia (80%) and visible intestinal peristalsis (60%).

INCIDENCE OF DIFFERENT AETIOLOGY

The incidence of different etiologies of intestinal obstruction in the present series are as follows.

Table 6: Causes of intestinal obstruction in adults

Clinical condition	Number of cases
Postoperative adhesions	20
Obstructed hernia	15
Volvulus	2
TB abdomen	2
Malignancy	7
Intussusception	3
Mesenteric ischaemia	1
Total	50

CHART 6: CAUSES

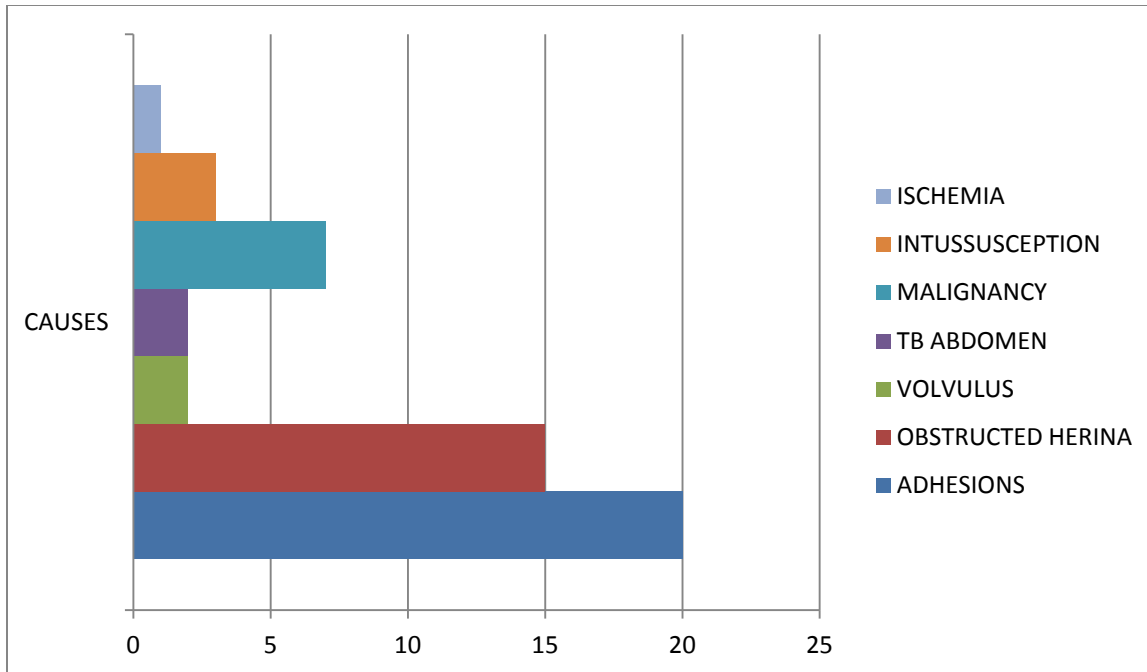
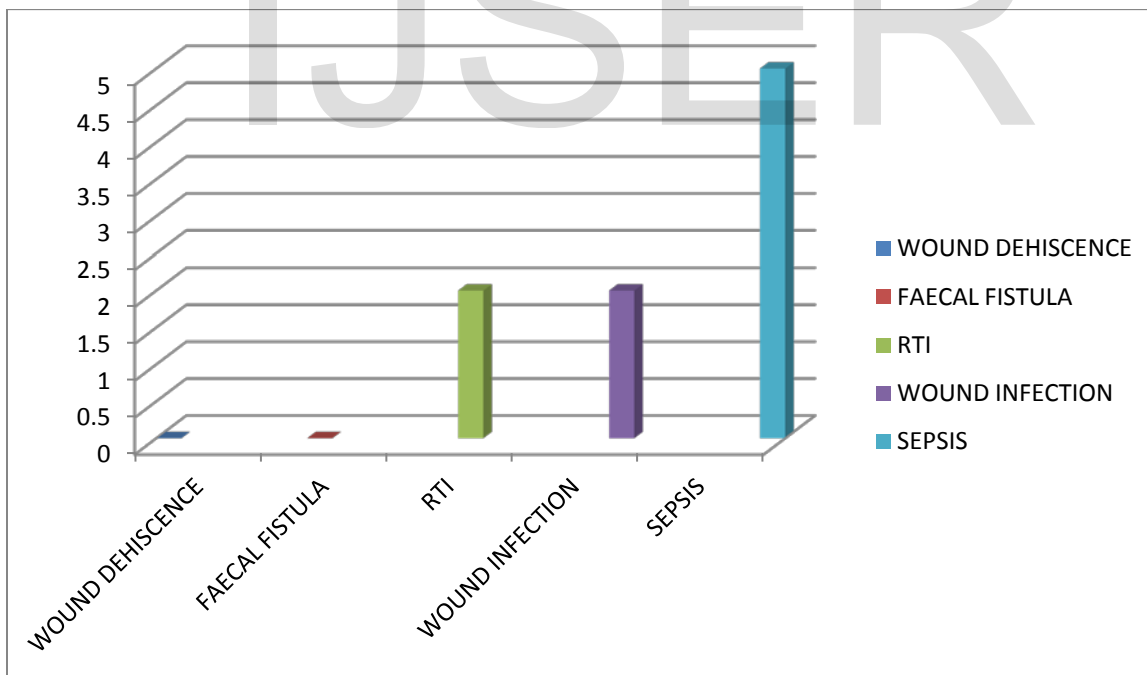


CHART 7: Postoperative complications



Clinical conditions

The most common cause of intestinal obstruction in this study was postoperative adhesions. The next common was obstructed hernia. Other conditions include volvulus, intussusception, tuberculosis, malignancy, mesenteric ischaemia, in the order of descending frequency.

Management

The surgical management in the present study group includes release of adhesions for postoperative adhesions 40% (20 cases), resection and anastomosis for many of the cases of obstructed / strangulated hernia where the viability of the intestine was doubtful and also for ischaemic bowel 22% (11 cases), release of the constricting agents and herniorrhaphy was done in 18% (9 cases) of the obstructed / strangulated hernia cases. Derotation of the volvulus and sigmoidectomy was done in around 4% (2 cases) of the cases. Resection and anastomosis and herniorrhaphy was done in 8% (4 cases) of the cases. Reduction of intussusception was done in one case. Two cases were managed with Hartman's procedure and one patient with a transverse loop colostomy.

Post-operative complications:

In the present study group there were 5 cases of septicemia, 2 cases of respiratory tract infection and 2 cases of wound infection.

Table 7: Postoperative complications

Postoperative	
SSI	2
Respiratory infection	2
Wound dehiscence	-

Faecal fistula	
Septicaemia	

Mortality

In the present study of 50 cases, about 7 patients died with the percentage of 14%. The majority of deaths due to complications like septicemia, peritonitis, respiratory infection. In the present study 7 persons died during postoperative period. The analysis of cause of death is shown below.

Table: 8 Mortality

Mortality	No. of cases	Percentage
Cured	43	86
Dead	7	14

Table 9: Cause of Death

Age and sex	Symptoms prior to admission	Operative findings	Operating procedure	Cause of death
75/F (Case No.8)	3 days	Carcinoma sigmoid colon	Resection and anastomosis	Septicaemic shock
72/M (Case	8 days	Carcinoma rectum	Hartman's	RTI

No.11)				procedure	
65/M (Case No.21)	5 days	Mesenteric ischaemic	Resection and anastomosis		Septicaemic shock
45/M (Case No.36)	3 days	Carcinoma caecum	Resection and anastomosis		RTI
38/F (Case No.37)	3 days	Carcinoma ovary with sigmoid colon infiltration	Transverse loop colostomy		Septicaemic shock
63/M (Case No.39)	3 days	carcinoma Rectum	Hartman's procedure		Septicaemia
55/M (Case No.43)	4 days	Carcinoma colon	Resection and anastomosis		Septicaemia

CONCLUSION

- Acute intestinal obstruction remains to be an important surgical emergency in the surgical field.
- Success in the management of acute intestinal obstruction depends largely upon the early Diagnosis, skillful management and treating the pathological effects of the obstruction as much as the cause itself.
- Erect abdomen X – ray is a valuable investigation in the diagnosis of acute intestinal obstruction.
- Post – operative adhesions are common cause to produce intestinal obstruction. Clinical, radiological and operative findings when put together can diagnose the intestinal obstruction.

- Mortality is still significantly high in case of acute intestinal obstruction.

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