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A Clinical Evaluation and Surgical Management of Intestinal Obstruction

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ABSTRACT

Background: Treatment Acute intestinal obstruction is one of common abdominal emergency and is associated with significant morbidity and mortality, especially if it progresses to bowel ischemia. The diagnosis and management of the patient with intestinal obstruction is one of the more challenging emergency that a general surgeon can come across. Early diagnosis of obstruction, skillful operative management, proper technique during surgery and intensive postoperative carries grateful results. **Methods:** Number of cases – 30. After admission to MNR Medical College And Hospital, Sangareddy investigations and operative procedures performed, were collected from the inpatients, were interpreted. **Results:** Intestinal obstruction is more common in the age group of 30-60 years and in 1st decade of life. Mean age distribution was 39.4years. Incidence in male (70%) was more as compared to female population (30%). Pain abdomen – 80% (24 cases) Vomiting – 83% (25 cases) Distention abdomen – 72% (22 cases) and Constipation – 60% (18 cases) were noted as many patients had coincidence of symptoms. **Conclusion:** All age groups were involved in our study from newborn to elderly patients. More commonly found in males than in females. Intestinal obstruction still remains an important surgical emergency. Intestinal obstruction with tuberculosis intestine are times more likely to develop postoperative complications, proper anti-tubercular management is necessary to prevent mortality and morbidity.

Keywords: *Intestinal obstruction; Small intestine; Large intestine.*

INTRODUCTION

Intestinal obstruction is a common surgical emergency all over the world[1]. It is defined as obstruction in forward propulsion of the contents as obstruction in the intestine either due to mechanical or neurological cause[2]. It is predisposed by varying underlying anomalies and diseases, which are difficult to define preoperatively[3]. Although the mortality due to acute intestinal obstruction is decreasing with better understanding of pathophysiology, improvement in diagnostic techniques, fluid and electrolyte, correction, much potent anti-microbials and the knowledge of intensive care[4]. Various studies in India report about 8-12% in recent times. Most of the mortalities occurs in elderly individuals who seek late treatment and who are having associated pre- existing comorbid conditions[5]. The dictum of never let the sun set or rise in small bowel obstruction has made early surgical intervention for intestinal obstruction2. This in turn has reduced the incidence of strangulation of bowel, which was major cause of mortality in already ill patient[6]. Early diagnosis of obstruction skillful operative management, proper technique during surgery and intensive postoperative treatment carries[7].

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AIMS AND OBJECTIVES

To study the various causes of intestinal obstruction. To study the symptoms and signs of intestinal obstruction. To study the various Modalities of treatment (surgical) and also the role of imaging studies in determining the etiology and intervention in intestinal obstruction.

METHODOLOGY

A clinical evaluation of intestinal obstruction was selected because in routine practice every surgeon has to come across this surgical emergency and treatment would largely depend on early diagnosis and skillful management. The study was undertaken with the aim of evaluating/studying the various casuse(etiology) and the most common cause of intestinal obstruction with its associated complications at our institution, mode of presentation(signs and symptoms) & its surgical management and also to evaluate/study the role of imaging studies in determining the etiology and intervention in intestinal obstruction. A total number of **30** cases of intestinal obstruction have been studied between September 2015 to September 2017. In this study I have selected patients with all age group who attended to OPD and emergency department at M NR Medical College And Hospital, Sangareddy with history and clinical picture suggestive of intestinal obstruction, also the patients who had hernia with recent onset of irreducibility, pain, vomiting and constipation were also included in this study. Patients who were having sub acute or adynamic intestinal obstruction treated conservatively are excluded from the study. All patients with provisional diagnosis of acute intestinal obstruction were assessed clinically in detail as proforma after admission.

On admission a relevant pathological and biochemical investigations were carried out in all cases. Plain X-ray erect abdomen was done in almost all cases. Ultrasonography of abdomen was done in some cases whose diagnosis by X- ray was inconclusive. CT scan abdomen done in selected cases. Immediately after the admission along with the above procedure of resuscitation with IV fluids especially ringer lactate and normal saline infusion, was started till the hydration and urine output became normal. Nasogastric decompression with Ryles tube was carried out and antibiotic prophylaxis started. Close observation of all bedside parameters (like pulse rate, BP, RR, abdominal girth, bowel sounds and tenderness and guarding) was done. Patients who showed reduction in abdominal distension and improvement in general Condition, especially in individuals with postoperative adhesions a chance of conservative management was taken (by extending the supportive treatment) for further 12 to 24 hours, those who showed improvement by moving bowels, reduction in pain/tenderness in decided for conservative treatment, such individuals are excluded in this study. Patients with clear-cut signs and symptoms of acute obstruction were managed by appropriate surgical procedure after resuscitation. I attended operative procedures in majority of the cases and findings were recorded and photographs were taken. Surgery adopted and criteria for deciding the procedure were noted. Histopathological examination of the specimen of resection/biopsy was done whenever necessary. The postoperative period was monitored carefully and all parameters were recorded hourly or four hourly basis depending upon the patients general condition and toxemia. Postoperative follow up period ranged between 2-6 months from time of discharge, some patients were not regular in their follow up visits. The results were tabulated mostly stressing on following points i.e age, sex, symptoms, signs, investigations, probable causative factors, operative findings and operative procedure adopted.

Statistical Methods: Descriptive statistics (mean, median, mode, range, standard deviation,variation,co efficient of variation) has been used to find the significant of proportion of Postoperative complications in association with etiology of Intestinal Obstruction.

RESULTS

A clinical study of 30 cases of intestinal obstruction was studied during period of September 2015 – September 2017 at MNR Medical College And Hospital, Sangareddy. Analysis is as follows:

Table 1: Age Distribution

Age	Total Cases
0-10	6
11-20	3
21-30	4
31-40	5
41-50	7
51-60	1
61-70	2
>71	2

The study was done in all age groups ranging from newborn to 85yrs with a mean age of 39.4 years

Table 2: Sex Incidence

Age	Male	Female
0-10	6	0
11-20	2	1
21-30	1	1
31-40	1	3
41-50	8	2
51-60	1	2
61-70	1	0
>71	1	0

The occurrence of intestinal obstruction was common in male (70%) with comparison to female (30%). There were 21 male & 9 female with male to female ratio 2.2: 1

Table 3: Levels of obstruction:

SMALL BOWEL	LARGE BOWEL
22	8

There was more of small bowel obstruction (73%) when compared to large bowel Obstruction (27%).

Table 4: Analyses of symptoms and signs:

Sl No	Symptoms & signs	No. of cases	Percentage
1	Pain abdomen	24	80
2	Vomiting	25	83
3	Tenderness	28	93
4	Distension	22	72
5	Constipation	18	60
6	Bowel sounds- increased	13	43
7	Bowel sounds- decreased	5	16
8	Bowel sounds- absent	2	7
9	Groin swelling	4	13
10	VP	5	16
11	Gaurding	14	46
12	Rigidity	4	13
13	Palpable mass	-	-
14	PR findings(significant)	1	3

5) Etiology of intestinal obstruction (Small bowel obstruction) 22 cases (73%)

Cause	Case	Percentage
Adhesions & bands	11	50
Obstructed hernias	5	22
TB strictures	3	13
Small bowel volvulus	1	4.5
Intussusception	1	4.5
Mekels diverticulum	1	4.5

Table 6: Large bowel obstruction - 8 cases (27%)

Cause	Case	Percentage
Neoplasm	4	50
Large bowel volvulus	1	12.5
T.B strictures	2	25
Intussusception	1	12.5

6) Radiological features: Plain X-ray erect abdomen was done in 25 cases out of 30 cases. Positive interpretation was when it correlated with exact site of pathology and negative when it did not. The lower the obstruction, higher the accuracy.

DISCUSSION

Intestinal obstruction is one of the commonly encountered clinical entities. There is probably not a day that goes by, in which a clinical surgeon does not atleast once, come across the possible diagnosis of intestinal obstruction.The involvement of small bowel in obstruction is much more common than that of large bowel (Sufian and Mostsumoto)[8]. The delay in the treatment will lead to high mortality.

Incidence: In the present series small bowel obstruction contributed to 73% and large bowel obstruction 27%. This is comparable with reports of Michel and Becker[9] where small bowel obstruction constituted to 80% and large bowel obstruction constituted 20%.

1. Age incidence: The acute intestinal obstruction occurs in all age groups. The age distribution in our series ranges from newborn to 85 years with mean age of 39.4years. Maximum incidence was seen between

age group of 41-50 yrs (30%) followed by the age group 0-10 (23%). Earlier studies conducted by Gill and Eggleston[10] has reported 19.04% of cases in age group of 0-10 yrs, also Studies by Gill Eggleston has reported 17% of cases in the age group of 50-54 years and 60% of the cases of intestinal obstruction occur in the age group of 30-60 years. There studies almost correlate with the present study.

2. Sex incidence: In our study the incidence of intestinal obstruction in males was 21 (70%) and that of females was 9 (30%). Male to female ratio is 2.2:1.0 (3:1) The male preponderance is consistent with series reported from other part of world. Fuzan and Lee reported 2:1 male to female ratio. Budharaj reported in his study a ratio of 4:1 between male and female.

3. Etiology: In our study the following etiological factors were found : Adhesions – 30% Neoplasm - 13% Obstructed Hernias -16% Tubercular stricture - 16% Volvulus - 6% Bands - 6% Intussusceptions - 6% Meckel's diverticulum - 3%

CONCLUSION

The occurrence of intestinal obstruction is more in small bowel. All age groups from newborn to elderly were involved. The incidence of intestinal obstruction is more common in males compared to females. Patients with a clinical picture of obstruction of the bowel demand vigorous correction of fluid and electrolyte, which can be severe, and life threatening. Depending upon the age the etiology differs. Intestinal obstruction is more common in the age group of 30-60 years. Large bowel obstruction is more common in patients above 40 years than in younger group. Diagnosis of strangulation is still a challenge The clinical examination stressed upon vital signs, per abdominal examination. Routine necessary investigations were carried out. Plain X-ray erect abdomen - single important diagnostic tool. The distal the obstruction the greater the accuracy found. Early recognition and timely intervention is important to prevent the bowel going for gangrenous changes.

Ethical Clearance- Institutional Ethics Committee (IEC) approval was taken prior to the study.

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Conflict of Interest - Nil

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