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A STUDY ON THE SURGICAL MANAGEMENT OF ACUTE INTESTINAL OBSTRUCTION IN ADULTS IN A DISTRICT HEADQUARETRS HOSPITAL

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ABSTRACT

Introduction: Intestinal obstruction remains as one of the most common intra-abdominal pathologies encountered by surgeons whether it is caused by hernia, neoplasm, adhesions or any biochemical disturbances. Intestinal obstruction of the small or large bowel continues to be an important cause of morbidity and mortality. The objective of this study is to analyse the clinical features, treatment and outcome of patients with acute intestinal obstruction along with the cause of obstruction and causes of bowel ischaemia, necrosis and perforation. **Methodology:** The materials for the clinical study of bowel obstruction were collected from various Cases getting admitted to surgical wards. 50 cases of acute intestinal obstruction have been studied. Patients were belonging to the age groups from 12 years to 85 years, paediatric age group (<12 yrs) is excluded from this study. **Results:** The prevalent age groups are 31-40 and 51-60 age group with around 20% each in the total study. The most common cause of acute intestinal obstruction in the adults in this study series has been post-operative Adhesions (40%) and the next being obstructed Hernia (30%). The clinical features of abdominal pain, vomiting, constipation have been the main symptoms in this study. The commonest type of obstruction has been due to adhesions or band arising from the previous surgeries.The complication rate in this study was 18%. Overall mortality of this study was 14%. **Discussion and Conclusion:** Acute intestinal obstruction remains to be an important surgical emergency in the surgical field. Success in the treatment of acute bowel obstruction depends mainly on the early diagnosis and efficient management and treating the pathological effects of the obstruction as much as the treatment of the cause itself. Erect abdomen X-ray is a valuable tool in the diagnosis of acute intestinal obstruction. Postoperative adhesions have been the most common cause to produce bowel obstruction. Clinical, radiological and operative findings when put together can diagnose the intestinal obstruction. Mortality is still significantly high in acute intestinal obstruction in adults.

KEYWORDS: Acute intestinal obstruction, Treatment, Outcome.

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.[1] 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 of 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 knowledge of intensive care. Most of the mortalities occur in elderly individuals who seek late treatment and who are having associated pre-existing diseases like, diabetes mellitus, cardiac diseases or respiratory disease.

Management of acute bowel obstruction depends largely on early recognition, skillful management and appreciation of the importance of treatment of the pathological effects of the obstruction just as much as the etiology itself.

If detected early, the prognosis will be excellent after relief of obstruction but in late cases, where there will be vascular compromise due to obstruction, where relief of obstruction is not enough, rather it calls for many other surgical procedures like resection, anastamosis, etc. Based on this objectives of our study is to evaluate the various ways of presentation, various etiologies, importance of early recognition, diagnosis and

management and to study the various influencing factors like age, sex, diet and socio-economic status in the pathogenesis of acute intestinal obstruction and to study the morbidity and mortality rates in acute bowel obstruction.

METHODOLOGY

The materials for this clinical study on intestinal obstruction were collected from cases admitted to Government Headquarters Hospital, Krishnagiri in past two years, 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. 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: As it's a prevalence study, descriptive statistics used as percentile was done.

RESULTS

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 2 years, the total number of admissions in surgery were 7683 patients. Of which 146 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.

According to our study the peak incidence in the present study group is 31-40 and 51-60 with each consisting of 10 cases out of 50 cases. Male patients were more commonly affected when compared with females in the ratio of 4:1.

Coming to socio economic status, around 76 percent of patients were from poor group. 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.

Moving on to symptoms and signs in the present study, the most common symptoms were pain abdomen (88%) and vomiting (78%), while abdominal distension and constipation was seen in some cases and the most common signs were tachycardia (80%) and visible intestinal peristalsis (60%) followed by tenderness and rigidity.

Incidence of different aetiology

The incidence of different etiologies of intestinal obstruction in the present study was analysed and most common one was postoperative adhesions, followed by obstructed hernia. Other causes are given in below table 1.

Table 1: 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

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.

In our study of 50 cases as accordingly with the aetiology the management and the surgical procedure was done. Release of adhesions was done in 40% of cases, resection anastamosis in 22% of cases and release of adhesion with herniorraphy done in 18% of the cases.

Post- operative complications were also analysed which showed that there were 5 cases of septicemia, 2 cases of respiratory tract infection and 2 cases of wound infection.

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 showed malignancy to be the most common cause.

Table : 2 Mortality.

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

DISCUSSION

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 2 years , the total number of admissions in surgery were 7683 patients. Of which 146 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.

In our clinical study, the incidence of acute intestinal obstruction is 1.9% of the total surgical cases. In Bhargava Anderson's[2] study incidence was 3% of total number of surgical cases. The most common cause was found to be the postoperative adhesions followed by obstructed/ strangulated inguinal hernia, carcinoma, intussusception, volvulus, tuberculosis and mesenteric ischaemia. Although in the developing countries like India, the commonest cause used to be obstructed /strangulated hernia, in our study, commonest cause was adhesions followed by obstructed/strangulated hernia as the second cause. The decrease in the incidence of obstructed hernia indicate the changing trend towards early surgery before hernia gets complicated. The data of the present series is comparable to Souvik Adhikari series, Souvik Adhikari et al.[3]reported an incidence of 9.87%.

Acute Intestinal obstruction although occurs in all age groups, the age spectrum in our study is 15 years to 85 years. The study showed the maximum incidence is in the age group 31-40 of 20% and 51-60 years of 20% which is comparable to the previous study groups Souvik Adhikari et al.[3] Cole GJ et a[4] group, which are nearly similar to our clinical study of acute intestinal obstruction. The mean age is our current study is 45 years where as Souvik Adhikari et al.[3] shows mean age of 44 years, These studies are almost comparable with our current clinical study.

In the Souvik Adhikari et al.study, male to female radio was 4:1. In the Osuigwe AN[5] et al. study, male to female ratio was 2:1. In the present clinical study male to female ratio is 4:1.

The cause of acute intestinal obstruction differs from different geographical locations. In the present clinical study, about 76% of the patients were of poor socio-economic class and the remaining 24% were of middle class which does not yield much statistical significance. But our hospital being a government set-up, which is serving mostly the poor socio-economic status, hence the percentage of poor socio-economic status is high. The diet pattern in this study showed 64% to be non-vegetarians and 36% to be vegetarians which did not show any significance in relation to the disease.

In the present clinical study of 50 cases of acute intestinal obstruction, 40% of the cases occurred due to post operative adhesions who has undergone previous surgeries. In the present study, postoperative adhesions are the most common cause of intestinal obstruction, which can be comparable with the other study groups - Playforth et al.[6] with 54% and Arshad Malik et al.[7] with around 41%. Although the incidence of obstructed/ strangulated hernia is more in developing countries, in this study group, it is the second most common aetiology for the intestinal obstruction. It may be because of the awareness of public, the availability of good surgical facilities in the periphery for the hernia repair, the hernias are managed early.

The clinical feature of intestinal obstruction like abdominal pain, vomiting Abdominal distension and constipation were not present in all cases. Pain abdomen was present in 88% of the patients in the present study, where as vomiting was present in 78% of the patients. Abdominal distension was present in 66% and constipation was present in 54% of the cases.

In the present study, the clinical features of abdominal pain was 88%, vomiting was 78%, which comparable with the other study groups (Souvik Adhikari et al. and Jahangir Sarwar Khan et al[8]). Only about 66% of the patients in the present study group had Abdominal distension. It may be due to an early approach to the hospital by patients in the present study. The abdominal mass on palpation is present in 24% of the total study, more in Malignancy and ileocaecal tuberculosis. Visible peristalsis is present in only 60% of the intestinal obstruction patients.

Surgical Management

The surgical management in the present study group includes release of adhesions for postoperative adhesions 40%, resection and anastamosis for many of the cases of obstructed/strangulated hernia where the viability of the intestine was doubtful and also for ischaemic bowel 22%, release of the constricting agents and herniorrhaphy was done in 18% of the obstructed/strangulated hernia cases. Derotation of the volvulus and sigmoidopexy was done in around 4% of the cases. Resection and anastamosis and herniorraphy was done in 8% 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.

In the present group out of the 50 cases, complications like septicemia occurred in 5 cases, respiratory tract infection in 2 cases, wound infection occurred in two cases. The complication of septicemia was more in the patients with malignancy and one case with mesenteric ischaemia wherein there was already sepsis at the time of admission. Bowel surgeries were done in unprepared

bowel in such cases. In Two cases – one with obstructed inguinal hernia and one with carcinoma rectum, the patients already had prior co-morbid conditions of COPD, and they suffered from respiratory tract infection.

Frequency of mortality in this study is 14% i.e. 7 cases out of 50 cases. Among these, 6 cases were because of malignancy and one due to mesenteric ischaemia. Mortality that occurred during various studies have been tabulated as follows. The mortality rate in the present study is comparable to the Ramachandran CS et al.[9] study but it is more when compared to Souvik Adhikari et al.[3] Jahangir et al. studies.[8] Out of 7 cases who died, 6 cases were due to malignancy. As the malignancy was more in the aged group and with the unprepared bowel surgeries done to the patient, it led to septicemic condition and resulted in death. Two patients were chronic smokers who suffered respiratory tract infection and died. Hence most of the deaths were due to malignancy which played significant part in the outcome of the disease. The mortality with intestinal obstruction is more in patients who develop strangulation and gangrene of the bowel, also who reached the hospital after 3 days.

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 the 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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