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Original Article

Study of Intestinal Obstruction and It's Surgical Management: An Hospital Based Study

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ABSTRACT:

Background: Acute intestinal obstruction is a common surgical emergency and a frequently encountered problem in abdominal surgery. It constitutes a major cause of morbidity and financial expenditure in hospitals around the world and a significant cause of admissions to emergency surgical departments.

Aim of the study: To study intestinal obstruction and it's surgical management. **Materials and methods:** The study was conducted in the Government Hospital, Dungarpur, Rajasthan, India. For the study, we selected 30 cases of intestinal obstruction admitted in the surgical ward of Government Hospital, Dungarpur, Rajasthan, India. The age of the patients ranged between 18-70 years. The patients were selected on the basis of clinical history, physical findings, radiological and haematological investigations. **Results:** A total of 30 patients were included in the study. The mean age of the patients was 45.16 years with age ranging from 18-70 years. Based on socioeconomic status, there were 9 rich patients and 21 poor patients. Based on dietary habits, there were 20 vegetarians and 10 non-vegetarians in the study group. Wound infection was seen in 3 patients. RTI was seen in 1 patient. Wound dehiscence was seen in 1 patient. Fecal fistula and Septicemia were not seen in any patient. **Conclusion:** The intestinal obstruction remains an important surgical emergency in the surgical field and its treatment outcome depends upon early diagnosis, skillful management and treating the pathological effects of the obstruction.

Keywords: Intestinal obstruction, adhesion, hernia.

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INTRODUCTION:

Acute intestinal obstruction is a common surgical emergency and a frequently encountered problem in abdominal surgery.¹ It constitutes a major cause of morbidity and financial expenditure in hospitals around the world and a significant cause of admissions to emergency surgical departments. Intestinal obstruction belongs to highly severe conditions, requiring a quick and correct diagnosis as well as immediate, rational and effective therapy.² Surgeons are concerned about intestinal obstruction cases because strangulation, causing bowel ischemia, necrosis and perforation might be involved, and it is often difficult to distinguish simple obstruction from strangulation.³ Decisions regarding the most appropriate treatment approach in older patients with intestinal obstruction can be challenging for several reasons. Elderly patients with intestinal obstruction often present late in the course of their illness and report atypical or nonspecific symptoms.⁴ In addition, their clinical presentation and physical examination may be less reliable. Previous research has consistently demonstrated that emergency

abdominal surgery in elderly patients is associated with increased morbidity and mortality compared with elective surgery or emergency surgery in younger patients.^{5,6} Hence the present study was planned to study intestinal obstruction and it's surgical management.

MATERIALS AND METHODS:

The study was conducted in the Government Hospital, Dungarpur, Rajasthan, India. The ethical clearance for the study was obtained from the ethical board of the institute prior to commencement of the study. For the study, we selected 30 cases of intestinal obstruction admitted in the surgical ward of Government Hospital, Dungarpur, Rajasthan, India. The age of the patients ranged between 18-70 years. The patients were selected on the basis of clinical history, physical findings, radiological and haematological investigations. An informed written consent was obtained from the patients after explaining them the procedure of the study verbally. Patients who were having Sub acute intestinal obstruction treated conservatively were excluded from the study, and only those cases of intestinal

obstruction which were managed surgically were studied to establish the pathology of intestinal obstruction with an aim to know the mode of presentation, physical findings, radiological and haematological findings, operative findings and outcome of acute intestinal obstruction. The postoperative period was monitored carefully and all parameters were recorded hourly or four hourly basis depending upon the patients general condition and toxemia. The statistical analysis of the data was done using SPSS version 20.0 for windows. The Student's t-test and Chi-square test were used to check the significance of the data. The p-value less than 0.05 was predetermined as statistically significant.

RESULTS:

A total of 30 patients were included in the study. **Table 1** shows the demographic details of the patients. The mean age of the patients was 45.16 years with age ranging from

18-70 years. The number of male and female patients was 19 and 11 respectively. Based on socioeconomic status, there were 9 rich patients and 21 poor patients. Based on dietary habits, there were 20 vegetarians and 10 non-vegetarians in the study group. **Table 2** shows the surgical procedure and number of patients who underwent the procedures. Resection and anastomosis was performed in 9 patients. Adhesiolysis was performed in 7 patients. Reduction was performed in 1 patient. Colostomy was performed in 3 patients. Ileotransverse anastomosis was performed in 2 patients. RA with ileostomy was performed in 4 patients. Adhesiolysis with hernioplasty was performed in 4 patients [Fig 1]. **Table 3** shows postoperative complications in the study group. Wound infection was seen in 3 patients. RTI was seen in 1 patient. Wound dehiscence was seen in 1 patient. Fecal fistula and Septicemia were not seen in any patient. On comparison we observed that the results were statistically non-significant.

Table 1: Demographic details of the patients

Parameters	Study group
Mean age (years)	45.16
Number of male/ female patients	19/11
Socioeconomic status	
• Rich	• 9
• Poor	• 21
Dietary habits	
• Vegetarian	• 20
• Non-vegetarian	• 10

Table 2: Surgical procedure and number of patients

Surgical procedure	Number of patients	Percentage
Resection and anastomosis	9	30
Adhesiolysis	7	23.33
Reduction	1	3.33
Colostomy	3	10
Ileotransverse anastomosis	2	6.66
RA with ileostomy	4	13.34
Adhesiolysis with hernioplasty	4	13.34
Total	30	100.00

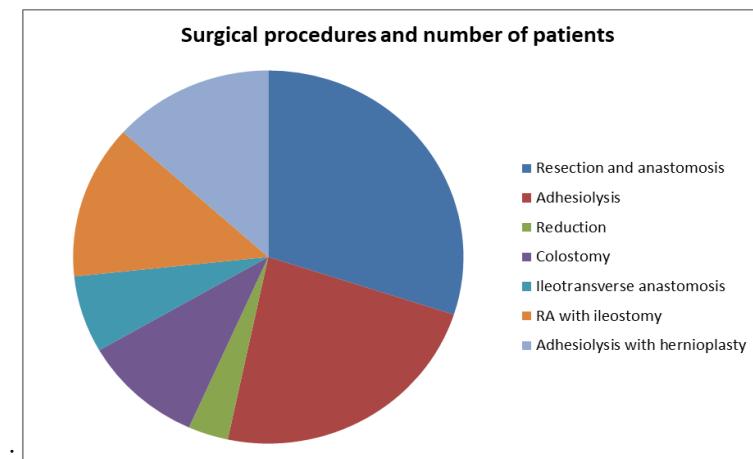


Figure 1

Table 3: Postoperative complications in the study group

Postoperative complications	Number of patients	p-value
Wound infection	3	0.332
RTI	1	
Wound dehiscence	1	
Fecal fistula	0	
Septicemia	0	
Total	5	

DISCUSSION:

In the present study we studied intestinal obstruction and its surgical management. We observed that postoperative complications were seen in total of 5 patients. Wound infection was seen in 3 patients. RTI was seen in 1 patient. Wound dehiscence was seen in 1 patient. Fecal fistula and Septicemia were not seen in any patient. But the results were statistically non-significant. The results were compared with previous studies and results were consistent with previous studies. Springer JE et al examined the morbidity, mortality and rate of recurrent bowel obstruction associated with the treatment of small bowel obstruction (SBO) in older adults. They prospectively enrolled all patients 70 years or older with an SBO who were admitted to a tertiary care teaching centre between Jul. 1, 2011, and Sept. 30, 2012. Data regarding presentation, investigations, treatment and outcomes were collected. Of the 104 patients admitted with an SBO, 49% were managed nonoperatively and 51% underwent surgery. Patients who underwent surgery experienced more complications and stayed in hospital longer than patients managed nonoperatively. Nonoperative management was associated with a high rate of recurrent SBO: 31% after a median follow-up of 17 months. Of the patients managed operatively, 60% underwent immediate surgery and 40% underwent surgery after attempted nonoperative management. Patients in whom nonoperative management failed underwent surgery after a median of 2 days, and 89% underwent surgery within 5 days. The rate of bowel resection was high (29%) among those who underwent delayed surgery. Surgery after failed nonoperative management was associated with a mortality of 14% versus 3% for those who underwent immediate surgery; however, this difference was not significant. These data suggest that some elderly patients with SBO may be waiting too long for surgery. Pickleman J et al carried out a 10-year review of 101 patients sustaining an early postoperative small bowel obstruction within 30 days of celiotomy. Signs, symptoms, lab tests, and x-rays did not indicate which patients required operation. Twenty-three patients were operated on for either failure to resolve their obstruction or because it was feared that ischemic bowel was present. In none of these patients, nor the 78 patients who resolved without reoperation, did dead bowel occur. Early postoperative small bowel obstruction was most often due to adhesions and inflammatory processes. Seven patients died (6.9%), three in the operated and four in the nonoperated group. Because ischemic bowel is very

unlikely in patients with early postoperative small bowel obstruction, we advise 10 to 14 days of nasogastric suction initially; after this, improvement is unlikely without reoperation.^{7,8}

Fevang BT et al studied factors influencing complications and death after operations for small bowel obstruction (SBO) using multifactorial statistical methods. The authors studied retrospectively 877 patients who underwent 1,007 operations for SBO from 1961 to 1995. Patients with paralytic ileus, intussusception, and abdominal cancer were excluded. Odds ratios for death, complications, postoperative hospital stay, and strangulation were calculated by means of logistic regression analyses. Death and complication rates decreased during the study period. Old age, comorbidity, nonviable strangulation, and a treatment delay of more than 24 hours were significantly associated with an increased death rate. The rate of nonviable strangulation increased markedly with patient age. Major factors increasing the complication rate were old age, comorbidity, a treatment delay of more than 24 hours, and the need for repeat surgery. They concluded that death and complication rates after SBO decreased from 1961 to 1995. Major factors influencing the rates were age, comorbidity, nonviable strangulation, and treatment delay. Nonviable strangulation was more common in old patients. Wang ZL et al evaluated the risk factors affecting the early postoperative outcomes in patients with small bowel obstruction. Clinical data of 193 patients with small bowel obstruction undergone operation were analyzed retrospectively. A range of factors were investigated to estimate postoperative outcome, including gender, age, comorbidities, etiology of obstruction, presence of strangulated bowel (viable or nonviable), leukocyte count, temperature, and heart rate. Logistic regression analysis was used to study the prognostic value of each significant variable in terms of postoperation. The major causes of small bowel obstruction were adhesion and hernia, contributing 38.9% and 37.8% of all cases, respectively. Strangulation occurred in 42.0% and caused nonviable bowel in 23.3% of obstructing episodes. Elderly (>or=70 years), diabetes, malignant tumors WBC >15x10⁹/L were independent significant factors associated with bowel strangulation. The overall complication rate was 16.1%, the 30-day mortality was 4.1%, and the median postoperative hospital stay was 13 days. Age >or=70 years and bowel resection were significantly associated with postoperative complications in the univariate analysis. Only elderly and

malignant obstruction were significantly associated with operative mortality in multivariate logistic regression. It was concluded that the surgery for small bowel obstruction is still associated with significant mortality and morbidity. Elderly is significantly associated with an increased incidence of strangulation, operative mortality, and complications.^{9, 10}

CONCLUSION:

Within the limitations of the study we conclude that intestinal obstruction remains an important surgical emergency in the surgical field and its treatment outcome depends upon early diagnosis, skillful management and treating the pathological effects of the obstruction.

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