

Current Pattern of Mechanical Intestinal Obstruction In Adults

Naseer Ahmed Baloch, Din Mohammad, Shoaib Ahmed Qureshi

ABSTRACT

Objective To evaluate the current pattern of mechanical bowel obstruction in adults.

Study design Descriptive case series.

Place & Duration of study Surgical unit III and IV Bolan medical college/complex hospital Quetta, from June 2007 to July 2009.

Methodology The criteria for diagnosis were on the basis of history, clinical findings, radiological examination, exploration of abdomen and histopathological confirmation in selected cases.

Results A total of 252 surgically treated cases of mechanical bowel obstruction were included. Out of the total, 187 (74.2%) presented with acute and 65 (25.8%) with sub-acute intestinal obstruction. The mean age was 37.4 years with male to female ratio of 2:1. Abdominal tuberculosis was found in 77 (30.6%) patients. Among the other causes bands/adhesions were found in 57 patients (22.6%) and obstructed hernias in 44 patients (17.5%). In 161 patients (64%) the intestinal obstruction was without gut compromise, while in 91 patients (36%) strangulated bowel obstruction was present. Forty patients (15.9%) developed postoperative complications mainly wound sepsis and chest problems in the form of atelectasis and pneumonia. The mortality rate was 2.4% (n 6).

Conclusions Tuberculosis is still the common cause of intestinal obstruction, with overall mortality rate of 2.4% which needs attention.

Key words Intestinal obstruction, Etiology, Abdominal tuberculosis.

INTRODUCTION:

Intestinal obstruction is a common and potentially dangerous surgical emergency that is associated with high mortality. The diagnosis of intestinal obstruction is not always easy and indication of surgery needs high index of suspicion. Detailed history and thorough clinical examination are helpful to make a working diagnosis and planning treatment. Classically there are four cardinal features, i.e. colic, distension, vomiting and constipation, but the prominence of each of these is affected by the site and type of obstruction. Clinically it is possible to distinguish strangulation from simple intestinal obstruction depending upon severity of clinical features. Tenderness, guarding and rigidity with signs of hypovolaemic shock are more prominent in

strangulated obstruction. Successful management requires early diagnosis and treatment with meticulous fluid, electrolyte balance and timely surgical intervention.¹ It can occur at any age and accounts approximately 5% of all acute surgical admissions.²

Changing pattern of the disease from time to time, needs periodic studies to evaluate the aetiological factors and behaviour of the disease.³ Global as well as regional variations in the pattern of intestinal obstruction and changes in the disease pattern over the years are well documented in the literature.⁴ The morbidity and mortality can be reduced by the early diagnosis and prompt surgical intervention.⁵ Present study was conducted to find out the pattern of mechanical bowel obstruction in our set up.

Correspondence:

Dr. Naseer Ahmed Baloch
Surgical Unit-III,
Bolan Medical Complex Hospital, Quetta.
E mail: rindnaseer@aim.com

METHODOLOGY:

All patients who presented with symptoms and signs of mechanical bowel obstruction, admitted and managed surgically from June 2007 to July 2009 in

the Department of Surgery Bolan Medical Complex Hospital Quetta were included. The patients who were managed conservatively without surgical intervention were excluded.

Diagnosis was based on history, clinical findings, and supported by ultrasonography and radiological studies (plain x-rays) in all patients. Contrast studies were done in selected cases. Final diagnosis was made at exploratory laparotomy, which was attempted after thorough initial assessment, investigations and resuscitation. Surgery was defined as urgent in those cases where operation was performed within 36 hours. The operative details, postoperative complications, outcome and mortality were noted.

RESULTS:

Two hundred and fifty two patients presented with intestinal obstruction and underwent surgical exploration. Majority were males with male to female ratio of 2: 1. The mean age of the patients was 37.4 years (range 13-80 years). Table -I shows the age and sex distribution.

Out of 252 cases 188 (74.6%) were admitted through Accident & Emergency Department and 64 (25.4%) patients through surgical OPD. Seventy seven patients (30.6%) had abdominal tuberculosis. In 14 patients (18.2%) there were multiple strictures in ileum, in 5 patients (6.5%) there were associated strictures in jejunum besides ileum, while in 58 (75.3%) there was single stricture in distal ileum (within 30 cm from ileocaecal valve). Ileocaecal mass causing small bowel obstruction was found in 25 (32.5%) patients.

In 40 (15.9%) patients malignancy was the cause of mechanical bowel obstruction. Among these patients 7 (17.5%) had small bowel carcinoma which included 2 (28.5%) non-Hodgkins lymphoma ileum, one (14.3%) adenocarcinoma jejunum and 4 (57.2%) carcinoma of ileum. In 33 (82.5%) patients the cause of bowel obstruction was colonic carcinoma. Out of these 18 patients (54.5%) had carcinoma of caecum and ascending colon, 9 (27.3%) patients had adenocarcinoma of sigmoid colon and 6 patients (18.2%) had carcinoma of rectosigmoid junction and rectum.

Bands and adhesions were noted in 57 (22.6%) patients, while in 44 (17.5%) the cause of bowel obstruction were hernias. Among 44 patients of hernias 30 (68.2%) had inguinal hernias, 11 (25%) obstructed/strangulated umbilical and paraumbilical hernias, and 3 (6.8%) femoral hernias. Among other causes of mechanical intestinal obstruction volvulus

was found in 29 patients (11.5%), which includes 19 (65.7%) sigmoid volvulus, 7 (24.3%) volvulus caecum and 3 (10%) volvulus affecting ileocaecal region (table II).

Postoperative complications were noted in 40 patients. The most common was wound sepsis in 21 (52.5%) patients, treated conservatively by daily dressing. Twelve (30%) patients developed atelectasis, pneumonia and acute exacerbation of chronic bronchitis, treated by chest physiotherapy, steam inhalation and antibiotics. Two (5%) patients developed anastomotic leak, one in ileum and one at the site of ileocolic anastomosis. In 5 patients (12.5%) residual abscess were noted – two in pelvis, one in right subphrenic, one in paracolic gutters and one between bowel loops. The pelvic abscesses were drained per rectally and patients with right subphrenic abscess and inter loop abscesses underwent relaparotomy and abscesses drained. Overall mortality was 2.4% (n 6).

DISCUSSION:

The diagnosis of intestinal obstruction is based on the classic features of pain, vomiting distension and

Table I: Age and Sex distribution (N-252)

| Age | Male | Female | Total |
|---------|------|--------|-------|
| 11 - 20 | 16 | 10 | 26 |
| 21 - 30 | 43 | 19 | 62 |
| 31 - 40 | 47 | 19 | 66 |
| 41 - 50 | 35 | 21 | 56 |
| 51 - 60 | 16 | 09 | 25 |
| 61 - 70 | 10 | 05 | 15 |
| 71 - 80 | 02 | 00 | 02 |

Table II: Clinical Features

| Symptoms/Signs | No. | Percentage |
|--|-----|------------|
| Abdominal Pain | 240 | 95.2 |
| Vomiting | 224 | 88.9 |
| Absolute Constipation | 212 | 84.1 |
| Abdominal distension | 200 | 79.4 |
| Abdominal Tenderness | 207 | 82.1 |
| Rebound Tenderness | 207 | 82.1 |
| Shock | 31 | 12.3 |
| Fever | 139 | 55.2 |
| Weight loss | 99 | 39.3 |
| Bleeding per rectum | 59 | 23.4 |
| Irreducible and tender. Swelling in the inguinal & Umbilical region. | 44 | 17.5 |

absolute constipation.⁶ The relative magnitude of each differs according to the cause and site of intestinal obstruction. The pattern of mechanical intestinal obstruction shows variation in different areas of one country and as well as globally; because of availability of health care facilities.^{7,8} The most common cause in present study was intestinal tuberculosis (30.6%) which is slightly different from the studies conducted in our country, but comparable with the recent studies.^{9,10,11} The frequency of abdominal tuberculosis as the cause of bowel obstruction in our region is quite high as compared to other studies. The obvious reasons are the non-compliance of patients to antituberculous therapy, poor socioeconomic conditions and most importantly by the lack of health facilities and expertise in rural areas.

Bands and adhesions were noted in 22.6% of patients. This observation is different from the studies carried out in western countries, where 50% of the cases were due to adhesions^{5,12,13} The obstructed/strangulated herniae were found as the 3rd common cause in the present study, while it was the second common cause in the previous study, which almost is analogous with the other studies conducted in the country.^{9,10} Malignancy was encountered in 15.9% while in Malaysia malignancy was found to be a common cause of bowel obstruction¹⁴

Based upon the observations of the present study it is evident that the spectrum of bowel obstruction varies from time to time in the smaller geographical areas of the country. Intestinal tuberculosis and strangulated hernia are quite common in Balochistan. This may be due to delay in seeking medical advice due to lack of healthcare services.

Tuberculosis is still a major health problem. Intestinal obstruction is common in Pakistan and other tropical countries, but majority of cases present late. This leads to delay in its management and high incidence of complication. Six patients died as a result of severe abdominal sepsis and chest infection. The prognosis is worse in elderly patients, especially if they are in poor general health.

CONCLUSIONS:

Tuberculosis is a common cause of mechanical intestinal obstruction. Late presentation with advanced stage of disease are the causes of high mortality.

REFERENCES:

1. Macutkiewicz C, Gardon L Carlson. Intestinal obstruction. *Surgery Int* 2005; 70:10-4.

2. Holds W PJ. Intestinal obstruction. *Surgery* 1995; 13:217-21.

3. Fuzam M, Kaymak E, Harmacioglu O, Astarcioglu K. Principle causes of mechanical bowel obstruction in surgically treated adults in Western Turkey. *Br J. Surg* 1991; 78: 202-3.

4. Atiq A. Aetiological aspects of dynamic intestinal obstruction, a Mayo Hospital experience. *Pakistan Surg* 1996; 12: 118-9.

5. Botterill ID, Sagar PM. Intestinal obstruction. *Surgery* 2000; 18:33-9.

6. Kirk RM, Williamson RCN. Laparotomy for intestinal obstruction in Kirk RM General Surgical Operations, 4th edition, Churchill living Stone Edinburgh 2000; pp 97-102.

7. Kuruvilla MJ, Challani, FR, Rajagopal AK. Major causes of intestinal obstruction in Libya. *Br J Surg* 1987; 74:314-5.

8. Memon AS, Memon JM, Malik A, Soomro AG. Pattern of acute intestinal obstruction. *Pakistan J Surg* 1995; 11:1-3.

9. Manzoor A, Maingal MA. Pattern of mechanical intestinal obstruction in adults. *J Coll Physicians Surg Pakistan* 1999; 9: 441-3.

10. Ahmed M, Mahmood T, Ansdari AS. Spectrum of mechanical intestinal obstruction in adults. *Pak J Surg* 2001; 6:19-21.

11. Baloch NA, Babar KN. Spectrum of mechanical intestinal obstruction. *J Surg Pakistan* 2002; 7:7-9.

12. Nelson IW, Ellis H. Spectrum of intestinal obstruction today. *Br J Clin Pract* 1984; 38:249 -51.

13. Perdue P, Johson H, Staffprd P. Intestinal obstruction complicating pregnancy. *Am J Surg* 1992; 164:384-8.

14. Lee SH, Ong ET. Changing pattern of intestinal obstruction in Malaysia; a review of 100 consecutive cases. *Br J Surg* 1991; 78:181-2.