**INTRODUCTION**

Acute abdomen is one of the important surgical emergencies throughout the world. Twenty percent of admissions of acute abdomen are due to intestinal obstruction. A particular portion of these are because of large bowel obstruction [1]. The obstruction may be of benign or malignant origin. The risk of obstruction increases with age, more in left colon than right colon due to narrower lumen and solidification of fecal matter. Patients are often come with advanced diseases.

Large bowel obstruction is an emergency condition that requires early identification and intervention. It is important to distinguish colonic obstruction from ileus, as well as to distinguish true mechanical obstruction from pseudo-obstruction and treatment differs. Large gut obstruction often presents as an emergency that requires early and accurate diagnosis for prompt treatment. Although large gut obstruction is 4–5 times less common than small bowel obstructions, it accounts for nearly 2%–4% of all surgical admissions [2, 3]. In our country majority of patients present very late when the pathophysiological effect of obstruction arein advance stages. In addition, there is further delay in proper resuscitation and operative treatment [4]. So, mortality and morbidity is higher in patients with large bowel obstruction. The patients with large bowel obstruction present with absolute constipation, abdominal distention, colicky abdominal pain and vomiting. Some of them present with extreme dehydration and with sock. Successfully management largely depends upon early diagnosis, skilful treatment and an appreciation of the importance of treating the pathological effects of the obstruction just as much as the cause itself [5].

The early recognition and speedy relief of strangulated obstruction helps to reduce mortality. In this study our main goal is to assess treatment outcome of patients with large gut obstruction.
OBJECTIVE
General objective
• To evaluate treatment outcome of patients with large gut obstruction

Specific objectives
• To identify common cause of large gut obstruction.

METHODOLOGY

| Type of study | Prospective study |
|---------------|-------------------|
| Place of study | Different surgical units of Shaheed Ziaur Rahman medical college hospital, Bogra. |
| Study period   | May 2009 to April 2010. |
| Study population | Total 50 patients possessing the symptoms and signs of suspected large bowel obstruction irrespective of age and gender included in this study. |
| Sampling technique | Random sampling |

METHOD

The diagnosis was made on clinical findings and radiological reports. In history, attentions were paid to the age and gender of the patient, duration and sequence of appearance of the symptoms, history of previous operation, dietary history and bowel habit. On general examination each patient was evaluated specially for state of dehydration and vital signs. During examination of the abdomen attention was paid to the location of tender lump and degree of abdominal distention, visible peristalsis, abdominal tenderness, muscle guard and rigidity and presence or absence of bowel sound or increased bowel sound. In all cases examinations of the hernial orifices and per rectal digital examination were done.

STATISTICAL ANALYSIS

Collected data was collated and appropriate statistical analysis was done using computer-based SPSS (Statistical program for scientific study) package.

RESULTS

In table-1 shows age distribution of the patients where maximum numbers of patients were in the age group 51-60 years (28%) followed by 41-50 years (24%). The following table is given below in detail:

Table-1: Age distribution of the patients

| Age     | Percentage | Number of cases |
|---------|------------|-----------------|
| 10-20 years | 2          | 1               |
| 21-30   | 8          | 4               |
| 31-40   | 20         | 10              |
| 41-50   | 24         | 12              |
| 51-60   | 28         | 14              |
| 61-70   | 14         | 7               |
| >70     | 4          | 2               |

In table-2 shows gender distribution of the patients where out of 50 patients 31 (62%) were male and 19 (38%) were female. The following table is given below in detail:

Table-2: Gender distribution of the patients

| Gender | Percentage | Number of cases |
|--------|------------|-----------------|
| Male   | 62%        | 31              |
| Female | 38%        | 19              |

In table-3 shows causes of large gut obstruction in this study where various cases of large bowel obstruction highest incidence was due to Volvulus (46%). Next common cause was neoplasm (36%) and third most common cause was fecal Impaction (8%). The following table is given below:

Table-3: Causes of large gut obstruction in this study

| Causes           | Number of cases | Percentage |
|------------------|-----------------|------------|
| Volvulus         | 23              | 46         |
| Neoplasm         | 18              | 36         |
| Fecal impaction  | 4               | 8          |
| Tuberculosis     | 2               | 4          |
| Pseudo obstruction | 1              | 2          |
| Intussusception  | 1               | 2          |
| Bands and adhesions | 1            | 2          |

In table-4 shows distribution of cases according to site of lesion (n=50). Out of 23 cases of volvulus, 20 cases (86.96%) were sigmoid volvulus. Among the cases of neoplasm, rectal neoplasm were more common (27.77%), fecal impaction were most common in rectum (75.00%). The following table is given below:

Table-4: Distribution of cases according to site of lesion

| Causes           | Number of cases | Percentage |
|------------------|-----------------|------------|
| Volvulus         | 23              | 86.96%     |
| Neoplasm         | 18              | 68.88%     |
| Fecal impaction  | 4               | 15.38%     |
| Tuberculosis     | 2               | 7.69%      |
| Pseudo obstruction | 1              | 4.00%      |
| Intussusception  | 1               | 3.85%      |
| Bands and adhesions | 1            | 3.85%      |
Table 4: Distribution of cases according to site of lesion

| Cases       | Sites                | Number of cases | Percentage |
|-------------|----------------------|-----------------|------------|
| Volvulus    | Sigmoid              | 20              | 86.96      |
|             | Cecum                | 3               | 13.04      |
| Neoplasm    | Rectum               | 5               | 27.77      |
|             | Recto sigmoid        | 4               | 22.22      |
|             | Sigmoid colon        | 2               | 11.11      |
|             | Cecum                | 2               | 11.11      |
|             | Ascending colon      | 1               | 5.55       |
|             | Descending colon     | 2               | 11.11      |
|             | Anus                 | 1               | 5.55       |
|             | Neoplasm             | 1               | 5.55       |
| Fecal impaction | Rectum           | 3               | 75         |
|             | Sigmoid colon        | 1               | 25         |
| Tuberculosis | Cecum               | 1               | 50         |
|             | Rectum               | 1               | 50         |
| Pseudo obstruction | Cecum             | 1               | 2         |
| Intussusception | Sigmoid colon    | 1               | 2         |
| Bands and adhesions | Colon         | 1               | 2         |

In table 5 shows treatment procedures (n=50) of the patients. 4 patients (8%) were treated conservatively and different operative procedures carried out for the rest of the cases. Hartmann's procedure was done in most 11 cases (22.00%) and loop colostomy was done in 8 cases (16.00%). The following table is given below:

Table 5: Treatment procedures (n=50) of the patients

| Procedures                          | Number of cases | Percentage |
|-------------------------------------|-----------------|------------|
| Conservative                        | 4               | 8          |
| Right hemicolectomy                 | 4               | 8          |
| Extended right hemicolectomy        | 1               | 2          |
| Transverse colectomy                | 2               | 4          |
| Left hemicolectomy                  | 7               | 14         |
| Hartmann's procedure                | 11              | 22         |
| Paul-Makulicz procedure             | 6               | 12         |
| Colostomy alone                     | 8               | 16         |
| Decompression                       | 6               | 12         |
| Adhesiolysis                        | 1               | 2          |

In table 6 shows histological findings where most of the neoplasms were adenocarcinoma. The following table is given below in detail:

Table 6: Histological findings of patients

| Disease                  | Number of patients | Result                  |
|--------------------------|--------------------|-------------------------|
| 1. Neoplasm              |                    |                         |
| (a) Growth in cecum      | 2                  | Adenocarcinoma          |
| (b) Growth in colon      | 10                 | Adenocarcinoma          |
| (c) Growth in rectum     | 3                  | Adenocarcinoma          |
| (d) Growth in anus       | 1                  | Squamous cell carcinoma |
| 2. Tuberculosis          |                    |                         |
| (a) Lesion in cecum      | 1                  | Tuberculosis            |
| (b) Lesion in rectum     | 1                  | Tuberculosis            |
| 3. Intussusception       | 1                  | Hyperplastic polyp      |

Table 7 shows the postoperative complications where wound infection occurred in 8 cases (50.00%), chest complications in 6 cases (56.25%), wound dehiscence in 2 cases, stoma related complications in 7 cases (43.75 %), anastomotic leakage, fecal fistula, septicemia occurred in 1 case (6.25%) each. The following table is given below:
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In table-8 shows duration of hospital stay where 17 patients (37.77%) left hospital within 7-10 days, 12 patients (26.66%) within 11-15 days, 7 patients (15.55%) within 16-20 days, 4 patients (8.88%) within 3-6 days and 5 patients (11.11%) stayed in the hospital for more than 21 days. The following table is given below:

Table-8: Duration of hospital stay

| Duration (Days) | Number of patients | percentage |
|-----------------|--------------------|------------|
| 3-6             | 4                  | 8.88       |
| 7-10            | 17                 | 37.77      |
| 11-15           | 12                 | 26.66      |
| 16-20           | 7                  | 15.55      |
| >21             | 5                  | 11.11      |

In table-9 shows outcome of patients with large gut obstruction. Total 50 patients were admitted, out of these 29 patients (58%) were cured without complication, 16 patients (32%) were cured in spite of some complications and 5 patients (10%) expired. The following table is given below:

Table-9: Outcome of patients with large gut obstruction

| Outcome                   | Number of patient | Percentage |
|---------------------------|-------------------|------------|
| Cure without complication | 29                | 58         |
| Cure with complication    | 16                | 32         |
| Death                     | 5                 | 10         |

**DISCUSSION**

Patients were treated conservatively and surgically. Operations were performed with the primary objective of saving life by the simplest procedure consistent with ultimate recovery. Adequate exposure was achieved by a midline incision. The further policy was considered according to the site of obstruction, the nature of obstruction, causes of the obstruction and the viability of the gut.

Various operative procedures like right hemicolocrectomy, extended right hemicolocrectomy, transverse colectomy, left hemicolocrectomy, Hartmann’s procedure and Paul-Makulicz procedure, colostomy, decompression, adhesiolysis were carried out. Hartmann’s procedure was done in 11 patients (22.00%), colostomy in 8 patients (16.00%), left hemicolocrectomy in 7 patients (14.00%), Paul-Mikulicz procedure in 6 patients (12.00%). It was found that Hartmann’s procedure was suitable in volvulus and loop colostomy was suitable in case of large gut obstruction due to neoplasm for temporarily relief. All patients were counseled before operation especially for stoma [6, 7].

After operation histopathological examinations were done and found most of the neoplasms were adenocarcinoma (15 cases), single patient was squamous cellcarcinoma, 2 patients were tuberculosis and one patient was Intussusception due to hyperplastic polyp. In all study it was found that 95% of malignancies in large gut were due to adenocarcinoma which was similar in this study [7].

Regarding the duration of hospital stay, 17 patients went home within 7-10 days 12 patients within 11-15 days and only 5 patients stayed for the second surgery in the form of secondary suture were done. Long term follow up of the patients were beyond the scope of this study. Which is supported by other studies [8-13].

The mortality rate in this study recorded was 5 patients (10%) among 50 patients (3) because of obstruction with advanced carcinoma, rest 2 were due to anastomotic leakage each), which is less as compared to other studies [14, 15]. This may be because of meticulous approach towards resuscitation, proper peritoneal washnormal saline and judicious antibiotic coverage against aerobes & anaerobes.

**LIMITATIONS**

- Very limited scope and time for the study.
- Collection of data from limited sample.
- No previous experiences regarding this type of study.
- There were no easily available books, journals and research paper regarding large gut obstruction in our country.
- Investigations facilities and economic solvency were not up to the mark.

**CONCLUSION**

From our study we can say that, a careful approach is required to avoid the increased morbidity and mortality associated with delay in the diagnosis of gangrenous obstruction. The study confirmed that the single most important antecedent of a grave prognosis in large gut obstruction is late presentation of the patient. It is concluded that increasing the patient awareness will help to decrease the incidence of large gut obstruction significantly.
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