

PATTERN OF INTESTINAL OBSTRUCTION A HOSPITAL BASED STUDY

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ABSTRACT

Objective: To determine the pattern of Intestinal Obstruction in local settings.

Design and Duration of Study: This is a descriptive study of 100 cases of intestinal obstruction from January 2001 to December 2003

Setting: Rawalpindi Medical College, Rawalpindi.

Patients and Methods: 100 cases of intestinal obstruction collected from Rawalpindi General Hospital from January 2001 to December 2003. The data of all patients was analyzed as regards to presentation, treatment and outcome.

Results: Total number of cases presented with intestinal obstruction requiring operative management was 100. Among them 81 were males & 19 were females. As far as the age distribution is concerned the age range was 5 months to 82 years. Mean age was 33 years. In our study commonest cause of intestinal obstruction was obstructed inguinal hernia followed by adhesions. Commonest postoperative complication encountered was postoperative fever & wound infection. In our study frequency of mortality was 7 (7%).

Conclusion: Despite all the improvements in the health care system, inguinal hernias are the commonest cause of intestinal obstruction in our setup.

Keywords: Intestinal obstruction, obstructed inguinal hernia, adhesions.

INTRODUCTION

Intestinal Obstruction is a major cause of morbidity and financial expenditure in hospitals around the world [1]. Mechanical intestinal obstructions form important part of pathologies which necessitates emergent surgical intervention [2]. While the most frequent etiological factor is postoperative adhesions in developed countries; strangulated hernias are more common in developing countries [1,3]. Purpose of this study was to determine the presentation, etiological pattern, management & outcome of intestinal obstruction in our set up.

PATIENTS AND METHODS

This was a descriptive study with retrospective data of 100 cases of intestinal obstruction collected from Rawalpindi

General Hospital from January 2001 to December 2003. Patients who were treated conservatively & relieved were excluded from the study. Similarly patients presenting with intestinal obstruction due to obstructed inguinal hernia with no evidence of strangulation that reduced spontaneously were also excluded. Manual reduction of obstructed hernia was avoided due to complications associated with it like reduction of gangrenous segment into abdominal cavity resulting in generalized peritonitis, perforation of viscera and en-mass reduction.

All patients presenting with features of intestinal obstruction were admitted in emergency. Complete history was taken especially eliciting cardinal features of intestinal obstruction namely abdominal distention, pain, vomiting & absolute constipation along with history of previous

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surgery. It was followed by thorough examination looking for dehydration, haemodynamic stability, abdominal distention, hernial orifices, palpable masses, scars of previous operations & bowel sounds. After clinical diagnosis of intestinal obstruction, investigations were performed. These included routine investigations including serum electrolytes. X-ray abdomen erect was also done to have an idea of level of obstruction from air fluid levels. When abdominal mass was suspected, abdominal ultrasound was performed. Contrast studies & C.T. Scan was performed in cases where urgent operative management was not required; depicted by improvement in general condition of the patient by conservative measures. All such data was recorded in a proforma.

However if patient was not haemodynamically stable, immediate resuscitation was started; central venous line passed, hypovolaemia corrected with normal saline infusion with addition of Potassium Chloride. Blood was also arranged depending upon the levels of Hemoglobin. Nasogastric tube and passed to decompress the intestine & Foley catheter passed to monitor urine output.

Continuous monitoring of patient was done by monitoring:

- N/G output
- Abdominal distention
- Bowel sounds
- Haemodynamic stability

However if obstructive features persisted or in case of obstructed / strangulated hernia, immediate operation was done. Patient improved with conservative treatment were excluded from study. At time of induction of anesthesia third generation cephalosporin with metronidazole was given. Obstructed / strangulated hernia was approached through inguinoscrotal incision. Every effort was made to prevent spontaneous reduction of gut to peritoneal cavity during handling.

Fluid present in the sac was taken for culture & sensitivity & its spillage to wound was checked.

Other causes of intestinal obstruction were approached through midline laparotomy incision. Site of obstruction was identified by observing condition of cecum. If it was distended, then cause of obstruction was in large gut, if collapsed then it was in small intestine. Then underlying pathology identified & treated accordingly.

The data regarding postoperative management was collected. Frequency of various complications was noted. If there was death in such cases, that case was noted.

STATISTICAL ANALYSIS

SPSS version 10.0 was used to analyze the data. Descriptive statistics ie. Mean \pm SD for numerical valuables and frequencies alongwith percentages for categorical variables were used to describe the data.

RESULTS

Total number of cases presented with intestinal obstruction requiring operative management was 100. Year wise distribution was given in (fig. 1). There were 19 (19%) males and 81 (81%) females with male to female ratio of 1:43.

As far as the age distribution is concerned the age range was 5 months to 82 years. Mean age was 33 years (fig. 2).

Common symptoms with which the patients presented (table-1).

Various signs that was present in patients (table-2).

Commonest investigation in addition to routine investigations was x-ray erect abdomen. Most important finding was multiple air fluid levels more than 2.5cm in length over and above three fluid levels present in stomach, duodenum and terminal ileum. Multiple air fluid levels were present in 88 cases. In addition to these, sigmoid volvulus showed bean shaped shadow of gas. In illeocecal intussusception, barium enema

was also performed which is diagnostic as well as therapeutic. Typical claw shaped barium is seen. Similarly contrast enhanced studies in patients of adhesions, bands and strictures showed, narrowing of lumen of gut. Filling defects (apple core appearance) were seen in patients of carcinoma of colon presenting as intestinal obstruction.

Based upon investigations and operative findings, the various causes of intestinal obstruction presented (fig. 3).

Different operative procedures were performed according to the etiology of the disease (table-3).

Table-3: Procedure performed according to etiology (n=100).

Etiology	No. of cases (%)	Procedure Performed
Obstructed Inguinal/femoral hernia	34 (34) 1 (1)	In 31 cases gut was viable. In 3 cases of gangrenous intestine resection and end-to-end anastomosis was performed & in 1 case gangrenous omentum was resected. Hernioraphy was done in all cases.
Adhesions	25 (25)	Adhesionolysis in 21 cases In 2 cases jejunostomy. In 2 cases tube ileostomy
Bands	14 (14)	Release of band in 13. In one case with gangrenous segment of ileum, resection and end-to-end anastomosis.
Strictures	10 (10)	In 8 stricturoplasty. In remaining 2, resection and end-to-end anastomosis.
Volvulus	6 (6)	Resection and exteriorizing both ends.
Intusception	5 (5)	Manual reduction in 4. In one case resection of Gangrenous segment & illeostomy.
Carcinoma of Colon	3 (3)	Proximal colostomy
Pseudoobstruction	2 (2)	Tube cecostomy

Commonest post operative complications encountered (table-4).

Frequency of mortality in our study was 7 (7%). Out of seven cases, 3 were of Carcinoma colon presenting late with intestinal obstruction. Remaining 4 cases were intestinal tuberculosis presenting with dense adhesions and fistula formation in postoperative period.

DISCUSSION

Intestinal obstruction though a common surgical presentation has a number of underlying causes responsible for it, ranging from external hernias to adhesions [4]. In our study consisting of 100 cases requiring operative management presenting at Surgical unit II, Rawalpindi General Hospital, the male

Table-1: Common symptoms (n=100).

Symptoms	No. of Patients (%)
Pain	100 (100)
Vomiting	92 (92)
Abdominal distention	97 (97)
Absolute constipation	97 (97)

Table-2: Common signs (n=100).

Signs	No. of Patients(%)
Tachycardia	98 (98)
Hypotension	36 (36)
Tenderness	91 (91)
Guarding	73 (73)
Rebound tenderness	39 (39)
Rigidity	21 (21)
Bowel sounds Hyper dynamic	81 (81)
Absent	19 (19)

Table-4: Common complications encountered (n=100).

Complications	Number of Cases (%)
Wound infection	12 (12)
Post operative fever	16 (16)
Chest infection	11 (11)
Wound dehiscence	04 (4)
Fistula	04 (4)

to female ratio was 4.2:1 whereas Muyem et al reported 2.8:1 & Adesun Kanmi et al reported 1.7:1 [5,6]. In western literature a male to female ratio of 1:1.3 is quoted [7].

Thus in our set up there is higher incidence of intestinal obstruction among males. In our study 43 patients belonged to 11-year to 30-year age group followed by 35 patients in above 50-year age group. Adesun Kanmi et al noted similar pattern [6]. Second

Table-5: Comparison of different studies.

Etiology	Present Study	Mohammed et al	Adesun Kanmi et al	Hasnain SQ et al	Miller G et al
Obstructed Inguinal/ Femoral Hernia	34% 1%	20%	16.9%	16%	2%
Sigmoid Volvulus	6%	3.6%	-	-	-
Carcinoma of Colon	3%	4.8%	2.8%	13.5%	5%
Pseudo Obstruction	2%	9.5%	-	-	-
Intussuption	5%	7%	14.1%	-	-
Strictures	10%	3.6%	-	10%	7%
Bands	14%	-	-	-	-
Adhesions	25%	45%	41.5%	34%	74%
Miscellaneous	-	6%	3.5%	-	12%

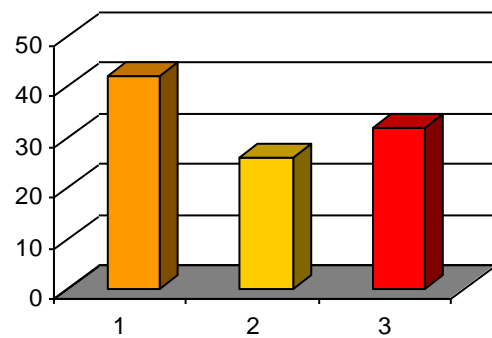
rise in incidence was related to sigmoid volvulus & Carcinoma of Colon seen in our set up in this age group along with direct inguinal hernia secondary to benign prostatic hypertrophy & chronic obstructive pulmonary disease.

Commonest symptom in our study was pain followed by abdominal distention, absolute constipation & vomiting. Similar observations were made by Adesun Kanmi et al [6]. Abdominal tenderness with hyperdynamic or absent bowel sounds were the commonest signs. Similar findings were reported by a study done in Kenya [5].

In addition to routine investigations, plain abdominal x-ray being the leading investigation in diagnosis & management, a fact reported in other studies also [5].

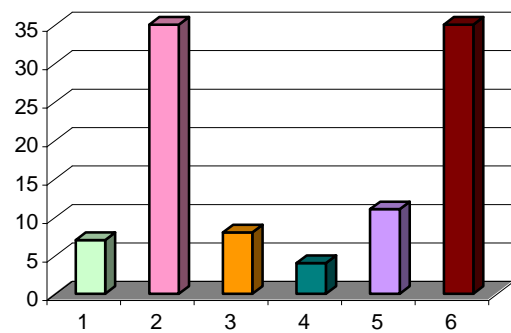
Depending upon operative findings various causes of intestinal obstruction in our study & a comparison with other studies (table-5).

Thus in our study commonest cause of intestinal obstruction is obstructed inguinal hernia followed by adhesions. This pattern is typical of developing countries because of lack of awareness in attending clinics for a painless swelling in the groin region. Similar incidence of 45.7% incidence was quoted by Shittu et al. Ti Tk has also quoted the same findings [3,8]. In contrast to our findings two studies done in Saudi Arabia revealed that adhesions after previous operations



1: 2001 (42 cases) 2: 2002 (26 cases) 3: 2003 (32 cases)

Fig. 1: Year wise distribution of cases (n=100).

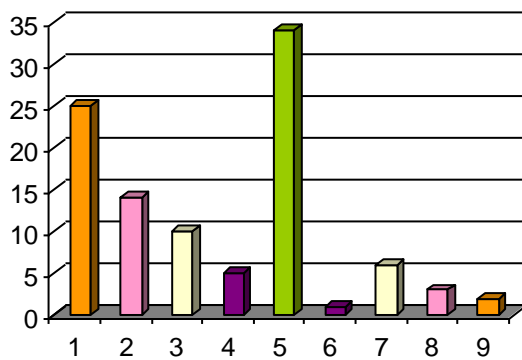


1: 0-10 years (7 patients) 2: 11-20 years (35 patients)
3: 21-30 years (8 patients) 4: 31-40 years (4 patients)
5: 41-50 years (11 patients) 6: Above 51 years (35 patients)

Fig. 2: Age distribution of the patients (n=100).

constituted the commonest cause of intestinal obstruction in their set up. Although still hernias accounted a large percentage amongst

causes presenting as obstructed/strangulated



1: Adhesions (25 patients) 2: Bands (14 patients)
 3: Strictures (10 patients) 4: Intusception (5 patients)
 5: Obstructed inguinal hernia (34 patients)
 6: Obstructed femoral hernia (1 patient)
 7: Volvulus (6 patients)
 8: Carcinoma of Colon (3 patients)
 9: Pseudoobstruction (2 patients)

Fig. 3: Various causes of intestinal obstruction (n=100).

hernias [9,10].

Commonest postoperative complication encountered postoperative fever & wound infection. Similar findings were reported in another study [5]. However main complications encountered in a study by Mohamed et al were wound infection, chest infection, prolonged ileus & intestinal fistula [9].

In our study mortality percentage was 7% that is lower as compared to 28% reported by Pal et al [11]. But is comparable to 8.2% in another study [3]. In contrast to our study mortality rate was only 3.5% in a study done by Mohamed et al [9].

CONCLUSION

Intestinal obstruction is a common cause of abdominal emergency. Despite many improvements in the health care setup, obstructed/strangulated hernias constitute commonest cause of intestinal obstruction in our setup, depicting a delay in diagnosis and treatment of this common surgical problem. Countries with the well developed health care

system, Adhesions are the commonest cause of intestinal obstruction.

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