

ISSN 1728-0435

# USTA 2014

University of Science & Technology Annual

Volume 21, No.1

June 2014



UNIVERSITY OF SCIENCE AND TECHNOLOGY CHITTAGONG  
BANGLADESH

## Obstruction of Large Intestine: A Retrospective Analysis of 120 Cases

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**Abstract:** Large gut obstruction is a common surgical problem and very often patients having this problem are managed in general surgical units where limitation is there. A retrospective analysis is done on 120 patients who were managed in general surgical unit of University of Science and Technology Chittagong during the year 2000-2013 to get information regarding the age, sex method of diagnosis, a etiology, treatment and results of treatment. Male: female is 70:50 and age range is 40-80 years where 60, (50%) patients are between the age of 60-70 years. Diagnosis was made on history, clinical examination and investigations which includes: plain X-ray of abdomen, colonoscopy followed by biopsy, CT scan of abdomen and barium enema X-ray of large gut which were designed according to need for an individual patient. In 70, (58%) cases obstruction was due to carcinoma in colon and in 30, (25%) it was due to volvulus of sigmoid colon and in 20 cases it was due to other different causes. In 55, (46%) cases obstruction was in sigmoid colon, in 20, (17 %) it was in recto-sigmoid junction, in 40 cases it was in other sites and in 5 cases there was pseudo-obstruction. Different types of operations were done in 115 patients and 5 cases of pseudo-obstruction were managed successfully with conservative treatment. 105 patients were operated as elective case and 10 on emergency basis for acute obstruction and peritonitis. In 85, (74%) cases resection of gut and primary closure was done. Anastomosis was formed in two layers: inner through and through sutures by 3/0 polyglactin and outer interrupted sero-muscular sutures by 2/0 silk. 12 patients (10%) who was operated for carcinoma died within first week due to massive MI, pulmonary embolism and severe pulmonary infection. Leaking of an astomosis was noted in 5, (5%) cases. Three of them were diabetic and 2 were with COPD. Anastigmatic ends were

exteriorized as soon as diagnosis was made. Successful secondary closure was done in these cases after two and a half months. Wound infection was noted in 23 cases (20%) that were cured with appropriate antibiotics and regular dressings. Mortality rate is 10%. Patients who were operated for carcinoma referred to oncologist for subsequent treatment. Twenty patients came to us for regular check-up. Ten of them were operated for carcinoma and received 5-Fluorouracil as adjuvant therapy and ten were with benign pathology. Ten years survival is recorded in 8 cases and all of them were operated for benign lesion. Patients who were operated for carcinoma five years survival was recorded in 5 cases. The study shows that carcinoma is the commonest cause of obstruction of large intestine and aged persons are the common victims. Colonoscopy followed by biopsy is the commonest investigation done for diagnosis of carcinoma. CT with rectal contrast enema provides valuable information regarding a etiology, sites and extent of the disease. In spite of limitation of modern tools and fund results are encouraging but high wound infection rate and prolong hospital stay are notable drawbacks.

**Key words:** Obstruction of large intestine, retrospective analysis.

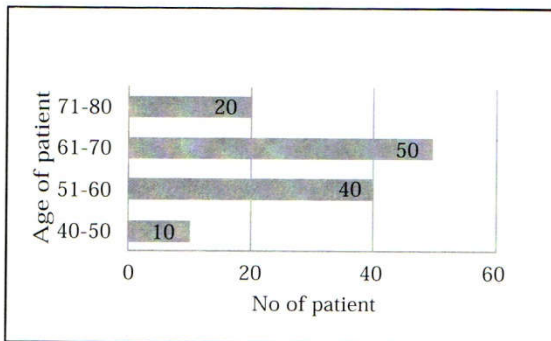
**Introduction:** Intestinal obstruction is a common surgical problem and 15% of it is due to large gut obstruction<sup>1</sup>. The most common site of large gut obstruction is in sigmoid colon<sup>2</sup>. Cancer colon is the most common cause of it<sup>2</sup>. Mortality rate is from 15%-20% and if there is caecal perforation it is about 40%<sup>2</sup>. Ways are to be found out to reduce the mortality and morbidity. Analysis of such cases managed in different surgical units will certainly help to find out a way to formulate a better management policy.

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**Materials and methods:** This is a retrospective analysis done in USTC on 120 cases of large gut obstruction. The cases were managed in USTC from 2000-2013. A brief analysis is done on age, sex, a etiology, method of diagnosis, treatment and results.

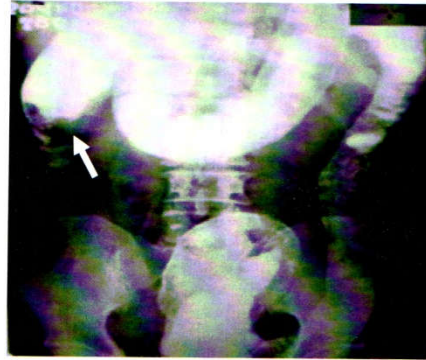
**Objectives:** To know the prevalence of this disease in different age group, a etiology, management of the disease and to identify the drawback in presence of limitation of fund and modern tools.

**Results:** 120 patients were studied. Male-female ratio is 70 : 50. Study of occurrence of disease in different age indicates that it is more prevalent in 60-70 years of age (Fig 1).

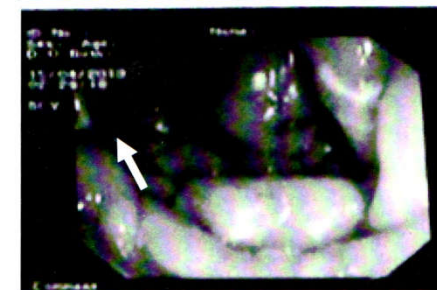
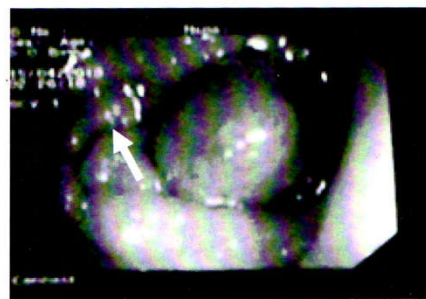


**Figure 1:** Column shows occurrence of disease in different age.

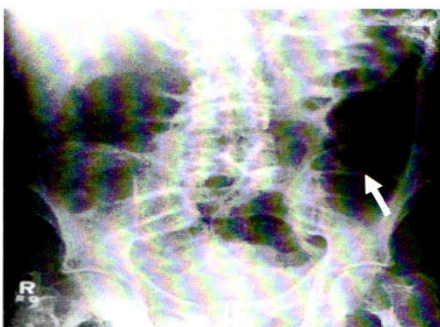
Diagnosis was made on history of abdominal pain, constipation, vomiting, per-rectal bleeding and performing clinical examination and investigations like: plain X-ray of abdomen, Barium enema X-ray of large gut, colonoscopy and biopsy from the suspected lesion, CT scan (Fig 2a, 2b, 2c and 2d).



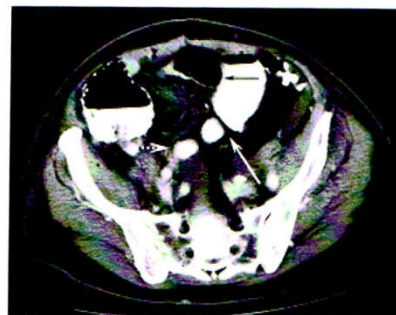
**Figure 2b:** Barium-enema X-ray showing obstruction at ascending colon



**Figure 2c:** Colonoscopy view shows growth in sigmoid colon.



**Figure 2a:** Plain X-ray abdomen showing hugely distended large gut due to obstruction.



**Figure 2d:** CT abdomen shows large gut obstruction.

Analysis of aetiology shows that carcinoma of large gut is the commonest cause and volvulus of sigmoid colon is in next place (Fig3). It is also evident that sigmoid colon is the most common site of obstruction and recto-sigmoid junction occupies the next place (Fig 4a, 4b, 4c and 4d).

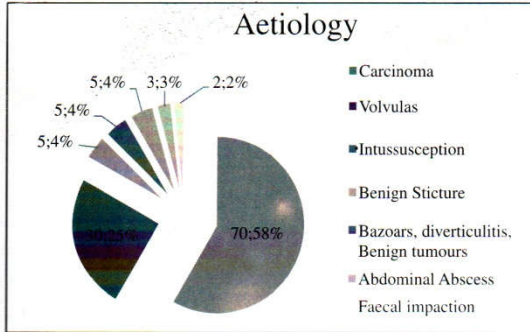


Figure 3: It shows different causes of large gut obstruction.

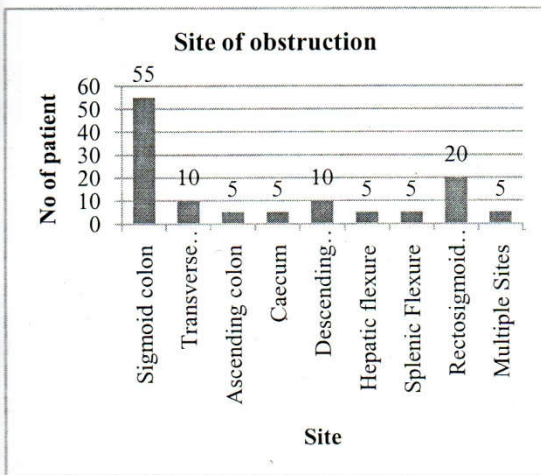


Figure 4a: It shows different sites of obstruction.



Figure 4b: Malignant stricture of transverse colon

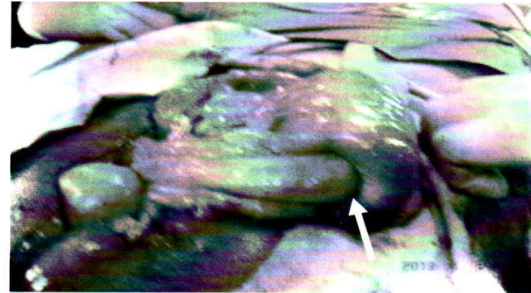


Figure 4c: Volvulus of sigmoid colon

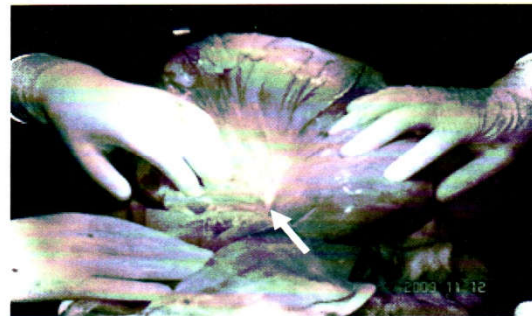
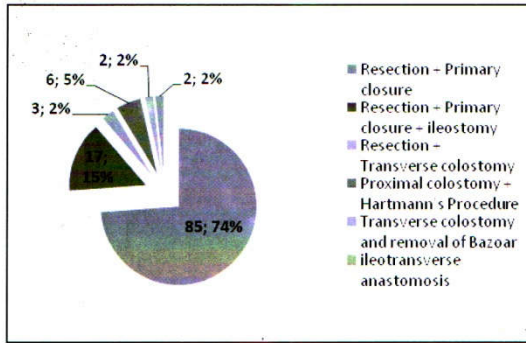


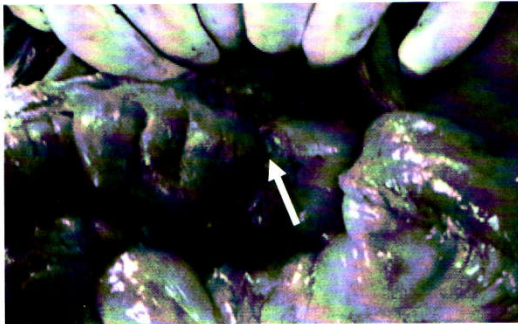
Figure 4d: Colo-colic intussusceptions

In pre-operative period, spread of malignant disease was assessed by USG in majority of cases. CT scan was done in a small number of cases because of fund limitation. Pre-operative correction of anaemia, hypoproteinaemia, electrolyte imbalance, dehydration etc was corrected properly. Preoperative preparation of gut was done in 105 elective cases with oral intake of polyethylene glycol and in 10 emergency patients it was done by on-table normal saline lavage. 115 patients were operated and 5 with pseudo-obstruction due to faecal impaction were cured by conservative treatment. Different types of operations were performed considering the aetiology, sites and spread of the disease, existing complications like, perforation and gangrene of gut. Among all operations resection and primary closure was done in 85, (74%) cases (Fig 5).



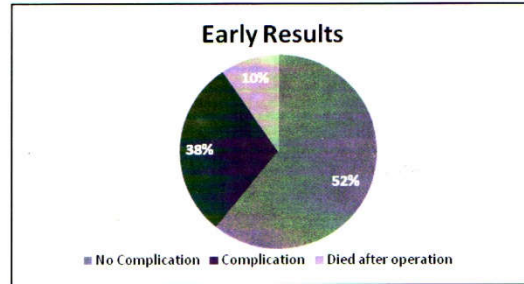
**Figure 5:** It shows different types of operations done

Harmonic scalpel, gut stapler was not used because of limitation in fund. All operations were done by laparotomy. Anastomosis between the gut was formed by hand sewn sutures (Fig 6.)

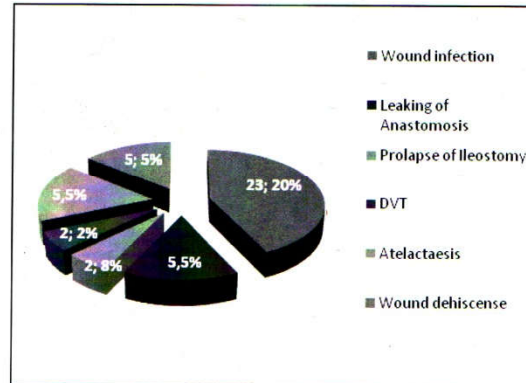


**Figure 6:** The picture shows a hand sewn anastomosis

Post-operative period was managed by IV fluid and electrolytes, antibiotics and analgesics etc. Early results are good in 52% cases and different complications are recorded in 38% cases. Wound infection is as high as 20% (Fig 7&8) that occurred in all emergency cases and cases with DM. Mortality rate is 10%. Average hospital stay is 20 days which is considered due to post-operative infection and delay in preparation of the patients for operation.

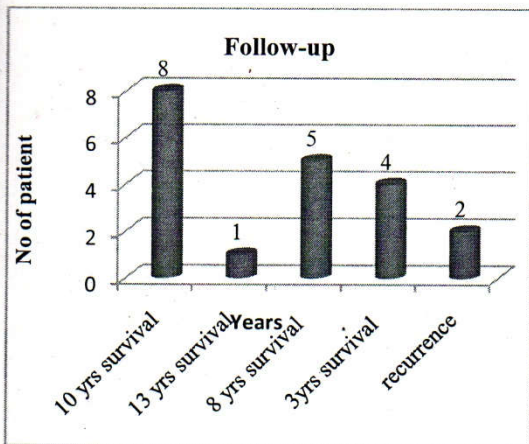


**Figure 7:** Early postoperative results



**Figure 8:** It shows complications occurred in early period

Cases operated for carcinoma were referred to oncologist for further management. Every monthly follow-up was done in only 20 cases for 10 years. Ten of them were operated for carcinoma, 6 for volvulus, 2 for TB strictures, 1 for sub-mucosal lipoma and 1 for phytobezoars. Complaints like: abdominal pain, distention, irregular bowel habit, per-rectal bleeding, anaemia are taken in consideration in follow-up procedure. Clinical examination, estimation of CEA, USG of abdomen, CBC, X-ray abdomen, colonoscopy with biopsy and CT of abdomen was done according to the indication in a particular patient. In 5 cases microcytic hypochromic anaemia was noted and it was corrected with iron rich diet and oral iron supplement. Recurrence of carcinoma in liver and abdominal lymph nodes was noted in 2 patients who survived only 2 yrs. Ten years survival is recorded in 8 patients who were operated for benign lesions and in carcinoma 5 years survival is noted only in 5 cases (Fig 9).



**Figure 9.** The column shows post-operative survival of patient in years

**Discussion:** Obstruction of large intestine occupies an important place in colorectal surgery. Abdominal pain, constipation, per-rectal bleeding, vomiting, abdominal distention, abdominal mass are common signs and symptoms<sup>3</sup>. But patients having such problem often do not attend the doctor in time rather take laxative, analgesics and antacid as remedy. As a result the disease advances. In fact a good number of them suffer from carcinoma which needs early attention. Proper history taking, clinical examination and necessary investigations are to be done in time to detect it. Colonoscopy followed by biopsy from suspicious lesion and in selective cases CT with rectal gastrografen enema is to be done to detect sites, aetiology, and extent of the disease<sup>4,5</sup>. Patients with volvulus of colon, perforation of gut etc. causing severe acute abdominal pain and vomiting usually attend the doctor on emergency basis.

It is to be remembered that large gut obstruction sometimes confused with small intestinal obstruction, paralytic ileus, pseudo-obstruction that can be excluded by taking history, clinical examination and X-ray abdomen, barium enema X-ray and colonoscopy according to need for a particular patient. Most of the patients of large gut obstruction need operation. Performing proper pre-operative preparation, assessment proper surgical technique is to be applied to achieve good results. In acute obstruction and patients having poor general condition use of colon stent gives the opportunity to prepare them for subsequent

elective surgery<sup>6</sup>. Patients with pseudo-obstruction can be cured by nasogastric suction and enema simplex<sup>7,8</sup>.

In open abdominal surgery mid-line abdominal incision is the choice. Primary anastomosis is done between healthy gut having nooedema and tension. Ensuring good blood supply at cut margins and avoiding of using intestinal clamp for prolong period reduces incidence of leaking of anastomosis<sup>9,10,11</sup>. Here a similar technique is adopted. But in 34 patients had different complications in early post-operative period and of them leaking of anastomosis is recorded in 5 cases (6%). This correlates with results in specialized centers where it is recorded 5-6%. In different literature mortality rate mentioned is 10%-25%. In our study it is 10%. But post-operative wound infection is recorded in 20% cases which is higher than that in advanced centers (10-15%). Average hospital stay is 20 days which is also too long.

**Conclusion:** The study showed that large intestinal obstruction occurs mostly in aged patients and most common cause of it is carcinoma. Most of the patients came for treatment in advance stage. Long hospital stay and high wound infection rate are remarkable drawback. Limitation of fund, lack of advanced tools and facilities are notable disadvantage. Ways are to be found out to solve these problems.

**Acknowledgements:** We are very grateful to Professor PB Roy, Dr Badiul Alam and all teachers of Department of Surgery, Radiology and Imaging, Pathology and Microbiology of USTC, Department of Oncology of Chittagong medical college and all the patients for their cooperation and consent to perform this work.

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