

Large Bowel Obstruction In Elderly Patients In Al Imamain Al Kadhimein Medical City

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ABSTRACT

Background: Large bowel obstruction in elderly is a common problem constitutes 20% of whole intestinal obstruction, usually presented as subacute onset as in tumors or acutely as in volvulus, it can be of a mechanical causes or functional, delay in operative intervention may lead to an unnecessary bowel resection and worsening of patient morbidity and mortality.

Aim: Evaluation of large bowel obstruction among elderly population in term of pathology, incidence, management and outcome. **Methods:** One year prospective study conducted on 40 patients of large bowel obstruction in age population > 60 years admitted in the surgical ward of Al Imamain Al Kadhmain Medical City from October 2016 to October 2017.

Results: Male: Female ratio was 3:1. Etiology was malignant tumors 55%, fecal impaction 20%, sigmoid volvulus 10%, pseudo-obstruction 7.5%, external hernia 5% and diverticular disease 2.5%. Seventy five percent of our patients managed surgically while 25% managed conservatively. Wound infection was the commonest complication in which it appears in 17 patients (42.5%). Mortality rate was 22.5%. **Conclusions:** From this study we found that large intestinal obstruction in old age group is a serious condition that associated with high morbidity and mortality. Malignant tumors of colon are the most common causes. Pseudo obstruction and fecal impaction should be always excluded before any surgical intervention.

Keywords: Large bowel obstruction, elderly.

Introduction:

Intestinal obstruction is the partial or total interruption of transit of the alimentary bolus through the intestinal tract. It is second to abdominal trauma as a cause of surgical emergency.^(1,2) Large bowel obstruction can be classified as mechanical (nonfunctional) or pseudo-obstruction (functional). Mechanical obstruction is characterized by blockage of the large bowel (luminal, mural, or extramural), resulting in increased intestinal contractility as a physiologic response to relieve the obstruction. Absence of intestinal contractility is what characterize the pseudo-obstruction, often associated with decreased or absent motility of the small bowel and stomach.^(3,4,5)

The large bowel obstruction in elderly patient: Large bowel obstructions are caused commonly by carcinomas, volvulus, or diverticulitis. So due to this fact management of large bowel obstruction should be taken in consideration. Large bowel cancer is the most common etiology of obstruction in patients with large intestinal obstruction.⁽⁶⁾

Acute intestinal obstruction is an urgent disease to be diagnosed and treated promptly. And as a cause of acute abdomen it is five times more common in the older as compared to younger patients.⁽⁷⁾

Acute intestinal obstruction in older age patients may be due to intestinal malignancies, sigmoid colon volvulus, or fecal impaction.⁽⁸⁾ Fecal impaction may be an important and preventable cause of colonic obstruction.⁽⁹⁾

Treatment:

A better understanding of the pathophysiology of bowel obstruction and the use of isotonic fluid resuscitation, intestinal tube decompression, and antibiotics have greatly reduced the mortality rate for patients with mechanical bowel obstruction.^(10,11)

The problem facing the surgeons in this condition include first he should decide that the diagnosis is intestinal obstruction, secondly the timing of surgical intervention putting in mind possibility of intestinal ischemia (strangulation) which needs urgent exploration.^(13,14,15)

In strangulation obstruction, both venous and arterial circulation of the intestine could be disturbed. Mucosal bleeding and thrombosis leads to ischemia, which easily causes bacterial translocation and leakage of the metabolites of ischemia into the circulation and the abdominal cavity. Such a situation can lead to sepsis and multiple organ failure.^(16, 17, 18)

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Patients and Methods:

A prospective study conducted on 40 patients with LBO admitted in surgical department of AllmamainAlkadhmain Medical City from the first of October 2016 to the first of October 2017.

Inclusion criteria:

-All cases with different causes of large bowel obstruction (LBO).

-Patients age above 60 years old.

-Patients admitted and managed by different surgical teams.

Exclusion criteria:-

-Patients with recurrent colonic tumors.-

-Patients had previous colonic surgery.

After resuscitation with intravenous fluids; gastrointestinal decompression with nasogastric tube, Foleys catheter insertion, close follow up electrolyte status and antibiotics cover, diagnosis of LBO was done clinically depending on good history and thorough physical examination, X-ray examination in supine and erect positions. Some patients can tolerate investigations and sent for CT scan, watersoluble enema and colonoscopy.

In patients needs surgical intervention decision about the type of management of LBO was done at laparotomy and was taken by various surgical teams with different experience.

Results:

1. Gender distribution:

Table 1: Distribution of patients according to the gender

Patients	Number (No.)	Percentage (%)
Male	27	67.5
Female	13	32.5

2. Distribution of patients according to the etiology

Table 2: Distribution of patients according to the etiology

Etiology	No.	%
Tumors	22	55
Fecal impaction	8	20
Sigmoid volvulus	4	10
Pseudo-obstruction	3	7.5
External hernia (Inguinal)	2	5
Diverticular disease	1	2.5
Total	40	100

3. Distribution of patients according to the tumors site

Table 3: Distribution of patients according to the tumors site

Colonic Tumors		No.	%
Rectal & Recto-sigmoid tumors		9	40.9
.	Rectal	1	4.5
▶	Recto-sigmoid tumors	8	36.3
Descending colon tumors		7	31.8
Cecum & Ascending colon tumors		5	22.8
Transverse colon tumors		1	4.5
Total		22	100

4. Distribution of patients according to the tumors grade and stage

Table 4: Distribution of patients according to the tumors grade and stage

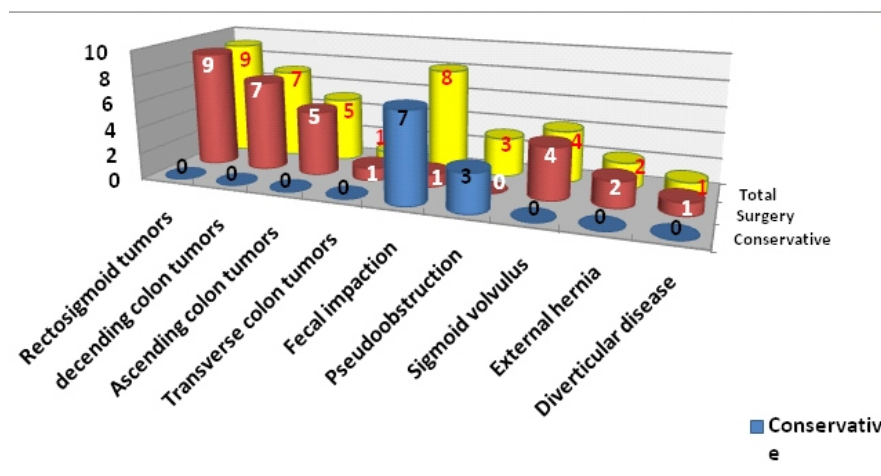
Tumors	Grade			Stage			
	I	II	III	IIa	IIIb	IIIc	IV
Rectal & Rectosigmoid	0	6	3	1	3	3	2
Descending colon	1	4	2	0	1	3	3
Cecum & Ascending colon	0	3	2	0	2	3	0
Transverse colon	0	0	1	0	1	0	0
Total	1	13	8	1	7	9	5
Percentage	4.5	59.1	36.3	4.5	31.8	40.9	22.7

5. Distribution of patients according to the management

Table 5: Distribution of patients according to the management

Etiology	No	Conservative		Surgery	
		No.	%	No	%
Tumors	22	0	0	22	100
▶ Rectal tumors	1	0	0	1	100
▶ Recto-sigmoid tumors	8	0	0	8	100
▶ Descending colon tumors	7	0	0	7	100
▶ Cecum & Ascending colon tumors	5	0	0	5	100
▶ Transverse colon tumors	1	0	0	1	100
Fecal impaction	8	7	87.5	1	12.5
Pseudo-obstruction	3	3	100	0	0
Sigmoid volvulus	4	0	0	4	100
External hernia (Inguinal)	2	0	0	2	100
Diverticular disease	1	0	0	1	100
Total	40	10	25	30	75

6. Distribution of patients according to the management

Figure 6: Distribution of patients according to the management

7. Distribution of patients according to the complications

Table 6: Distribution of patients according to the complications

Complication	No.	%
Wound infection	17	42.5
Respiratory complications (Cx.)	7	17.5
Small bowel obstruction	5	12.5
Urinary Cx.	5	12.5
Cardiac Cx.	4	10
DVT	3	7.5
Wound dehiscence	2	5
Colo-cutaneous fistula	1	2.5
Stoma Cx.	1	2.5

8. Distribution of patients according to the mortality

Table 7: Distribution of patients according to the mortality

Management/Mortality	No.	%
Patients managed Surgically	7	17.5
Patients managed conservatively	2	5
Total	9	22.5

Discussion:

Large bowel obstruction (LBO) is an important abdominal emergency that can result in significant morbidity and mortality, especially in cases of acute complete obstruction and/or delayed diagnosis or treatment. LBO often presents as an emergency that requires early and accurate diagnosis for prompt treatment.⁽¹⁹⁾

Imaging plays a vital role in the management of LBO by identifying the location, degree, and cause of obstruction and also aids in the detection of complications. Plain radiographs are the initial imaging modality in the evaluation of patients with suspected bowel obstruction with computed tomography (CT) being the definitive investigation.^(13,20)

Colorectal cancer is the most common cause of LBOs, representing approximately 60% of all cases.⁽¹⁴⁾ Acute LBO is the initial presentation to approximately 7%–29% of patients with colorectal cancer.⁽¹⁴⁾ In addition, nearly 20% of all colorectal carcinomas are complicated by some degree of obstruction. Over 75% of obstructing colorectal cancers are distal to the splenic flexure, with the Sigmoid colon being the most common location due to its fecal contents and relatively narrow diameter.^(14,21)

Regarding our study the gender distribution was more in male 27 patients (67.5%) while in females were 13 patients (32.5%), this is consistent with Bansod⁽¹⁵⁾ in which male were 60% and females were 40% and also in Zakuit⁽¹⁶⁾ where the ratio was 2:1 to the males but differ from study in Korea by Buyun where male and female equally affected. Males more presented with LBO because of alcoholic ingestion and Cigarette smoking which are associated with an increased risk of colonic carcinomas (the most common cause of LBO in elderly).^(5,22)

Malignant tumors were the most common cause of LBO in our patients 22 patients (55 %) followed by fecal impaction 8 patients (20%), in other studies like Chen⁽¹⁷⁾ also showed that tumors are the commonest cause of LBO, while Weledji⁽¹⁸⁾, Zakuit⁽¹⁶⁾, Jumah', Hopkins⁽¹⁹⁾ agreed that volvulus was following the malignant tumors as the main causes of LBO in different percentages Weledji⁽¹⁸⁾ tumors 50%, Zakuit⁽¹⁶⁾ tumors 35.5% volvulus 26.5%, Jumahtumors 70% volvulus 24%, Hopkins⁽¹⁹⁾ tumors 60% volvulus 5%. High incidence of carcinomas may be due to increase consumption of diet high in saturated or polyunsaturated fats which increases risk of colorectal cancer, fats may be directly toxic to the colonic mucosa and thus may induce early malignant changes. In contrast, a diet high in *vegetable fiber* appears to be protective.^(5,23)

Fecal impaction is the second cause of LBO because its incidence increases with age. The most important risk factors is inadequate dietary fiber and water,

Lack of mobility because of aging, laxative abuse and medications known to retard gastrointestinal motility include opiate analgesics, anticholinergic agents, calcium channel blockers, antacids, and iron preparations. All are causes of fecal impaction in this age group.

In our study the most common site of tumors are in the rectum and rectosigmoid region in 9 patients (22 %), which is consistent with Abudu⁽³⁹⁾ 64.5%, Weledji⁽¹⁸⁾ 50%, Jumah 43% of tumors at the rectosigmoid region as the commonest site for the tumors. The Lt. sided tumors presented as intestinal obstruction while Rt. sided tumors present as anemia and weight loss and obstruction came late in presentation.

In this study tumors (carcinomas) with grade II and stage IIIc were the commonest 13 patients (59.1 %) and 9 patients (40.9 %) respectively, which show the late presentation and diagnosis of these carcinomas.

All patients with tumors and volvulus managed surgically while all patients with pseudo _obstruction and almost all cases of fecal impaction managed conservatively, so 75% of all patients managed surgically and only 25% treated conservatively, this similar to Zakuit⁽¹⁶⁾ 69% surgically managed and 31% conservatively. In one of the cases of rectosigmoid tumors there was partial obstruction and we successfully insert at stent through sigmoidoscopy to convert the case from emergency to elective and to allow neoadjuvant doses of chemoradiotherapy then we did resection of the tumor and anastomosis. Selfexpandable metal stents are now being used more widely in the management of malignant low (distal to the splenic flexure) leftsided LBO. These stents are placed endoscopically under fluoroscopic control through the obstructing lesion and can remain in place for a prolonged period where the stent is definitive palliative treatment or alternatively can decompress the colon, and after staging and a complete workup, a definitive onestage resection and anastomosis may be possible.⁽²¹⁾ The stents are expensive, but they appear to be cost-effective. Colonic stenting as a bridge to surgery provides surgical advantages, as higher primary anastomosis rate and a lower overall stoma rate, without increasing the risk of anastomotic leak or intraabdominal abscess.⁽²²⁾

Wound infection occur in 17 patients (42.5 %) as the most common complication in post operative patients, this consistent to Shashi⁽²³⁾, Zakuit⁽¹⁶⁾ 25.5%, Jumah 28%, followed by chest infection. Wound infection was the commonest cause because of the age of the patients and most of them had multiple medical co-morbidities like diabetes and most of the operations were emergency and contaminated surgery.

Mortality rate was 22.5% and was more in surgically treated patients were death occur in 7 patients (17.5 %) and in 2 patients (5 %) treated conservatively, other studies also show increase in mortality in surgically treated patients as in Chen⁽¹⁷⁾,

Zakuit⁽¹⁶⁾ all mortality were post operatively ,Sebastiano 18.5%. From another view the overall mortality were better than Jumah 24% but worse than Shashi^(23,24) 14%.

Table (8) comparison between different studies

	Gender Male: Female	Etiology	Site	Management Surgery/ conservative	Cx.	Mortality
Bansod	3:1	-	-	-	-	-
Zakuit	2:1	Tumors/ Volvulus	-	69%/31%	Wound infection	-
Buyun	1:1	-	-	-	-	-
Chen	-	Tumors	-	-	-	-
Weledji	-	Tumors/ Volvulus	Recto- sigmoid	-	-	-
Jumah	-	Tumors/ Volvulus	Recto- sigmoid	-	Wound infection	24%
Hopkins	-	Tumors/ Volvulus	-	-	-	-
Abudu	-	-	Recto- sigmoid	-	-	-
Shashi	-	-	-	-	Wound infection	14%
Our study	3:1	Tumors/ Fecal impaction	Recto- sigmoid	75%/25%	Wound infection/ Chest infection	22.5%

Conclusion:

We found that the large intestinal obstruction in old age group is a serious condition associated with high morbidity and mortality and it necessitate early diagnosis and treatment.

Malignant tumors of colon are the most common

Causes of LBO which need early detection and intervention to improve survival.

Pseudo obstruction and fecal impaction should be kept in mind and excluded actively in all patients with LBO to avoid over treatment.

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