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RESEARCH ARTICLE

Changing pattern of mechanical bowel obstruction and management outcome in north-eastern Nigeria

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ABSTRACT

Background The study reviewed mechanical bowel obstruction over a five year period in North-Eastern Nigeria. **Patients and Methods.** The study retrospectively reviewed all patients that presented with mechanical bowel obstruction between January 2011 and December 2015. Permission for the study was granted by the Hospital management and informed consent obtained from all patients. Information extracted from clinical and laboratory records and data analyzed using SPSS statistical analysis. All patients were resuscitated using intravenous fluids, antibiotics (ceftriaxone/ metronidazole), tetanus toxoid, blood, and diverting colostomy where necessary. All patients had bowel preparation before definitive surgery under general anesthesia. **Results.** A total of 94 patients were managed age ranged between 20 and 72 years with male to female ratio of 1.4:1. The peak age group was 21- 30years accounting for 29.78%, followed by age group 51-60 years in 27.66% **table 1**. Tumour was the commonest cause in 27.66% followed by external hernias and intra peritoneal adhesions that failed to resolve on conservative management in the same proportion of 25.53% each **table 2**. The procedures carried were bowel resection in 54.26% and herniorrhapy in 25.53% **table 3**. The post operative complications were surgical site infection in 22.34%, enterocutaneos fistula in 3.19%. The mortality recorded was 15.96% majority due to metastatic colonic tumour. **Conclusion.** The rising incidence of colonic tumours and late presentation in the developing world and falling complicated external hernias due to availability of elective operations makes the former to become the most frequent cause of mechanical bowel obstruction in this environment.

Keywords: Mechanical bowel obstruction, Changing pattern, Management outcome.

INTRODUCTION

Mechanical bowel obstruction is one of the commonest indications for emergency laparotomy, perhaps second to peritonitis[1]. Among such causes of mechanical obstructions are obstructed external hernias, volvolus, colonic tumour obstruction, and adhesions[2-4]. There is a changing pattern in clinical presentation of external abdominal hernias favoring elective procedures for such hernias when compared to a decade ago where complicated hernia presentation were common. There is a rising incidence in colonic tumours with bowel obstruction at presentation[5]. The rising incidence is being attributed to changing diet, urbanization with its attendant social habit like alcohol ingestion and smoking[6-8]. One of the cardinal principles in the management of intestinal obstruction is adequate resuscitation before definitive surgery in order to reduce morbidity and mortality[9]. The aim of this study was to determine the pattern and outcome of mechanical bowel obstruction.

Patients and methods

The study retrospectively reviewed all patients presented with mechanical bowel obstruction between January 2011 and December 2015. Permission for the study was granted by the Hospital management and informed consent obtained from all patients. Information extracted from clinical and laboratory records and data analyzed using SPSS statistical analysis. All patients were resuscitated using intravenous fluids, antibiotics (ceftriaxone/ metronidazole), tetanus toxoid, blood, and diverting colostomy where necessary. Investigations done were full

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blood count; blood chemistry, random blood sugar, proctosigmoidoscopy, colonoscopy and biopsy. Others were barium enema, abdominopelvic ultrasound scan; chest x-ray, plain abdominal x-rays (erect and supine), and ECG. Computerized Tomography scan and MRI were done where indicated. All patients had bowel preparation before definitive surgery under general anesthesia.

RESULTS

A total of 94 patients were managed age ranged between 20 and 72 years with male to female ratio of 1.4:1. The peak age group was 21- 30years accounting for 28(29.78%) **table 1**.

TABLE 1: Age Distribution

Age years	No	%
10-20	2	2.13
21-30	28	29.78
31-40	12	12.77
41-50	16	17.02
51-60	26	27.66
61-70	8	8.51
71-80	2	2.13
Total	94	100.00

Tumour was the commonest cause in 26(27.66%) **table 2**.

TABLE 2: Diagnosis

Diagnosis	No	%
Hernia	24	25.53
Tumour	42	44.68
Volvolus	4	4.24
Adhesion	24	25.53
Faecal mass	3	3.19
Total	94	100.00

The procedures carried were bowel resection in 51(54.26%) **table 3**.

TABLE 3: Procedures

Procedures	NO
Herniorrhapy	24
Bowel resection	51
Adhesiolysis	24
Faecal evacuation	3

NB: Bowel resection: Tumour- 42, Volvolus-4, hernia-5

The post operative complications were surgical site infection in 21(22.34%), and enterocutaneos fistula in 3(3.19%), which closed on conservative treatment. The mortality recorded was 7(7.45%), and 5(5.32%) due to metastatic colonic tumour.

DISCUSSION

The incidence of MBO was found to be higher among the age groups 21-30 years accounting for 29.78% which is similar to the findings by Soressa et al (2016) [10]. Colonic tumours was found to be the commonest cause of mechanical bowel obstruction in 44.68% which is in sharp contrast to similar study in the same environment a decade ago by Madziga et al(2008) [11] that reported external hernias as the commonest. Obstructed external hernias are declining due to increase in elective herniorrhapy on the other hand there is increasing incidence in colonic tumours in the young due to change in diet and social habit. The highest procedure performed was bowel resection because it is the recommended primary treatment for volvolus and tumour as a global best practice[12-13]. In addition, late strangulation of hernia contributed to the high bowel resection rate. The commonest post operative complication was surgical site infection in 22.34% which was similar to the findings by Chang et al (2000)[14] due to the fact that colonic procedures are dirty. Enterocutaneos fistula was 3.19%, due to the fact that colonic anastomosis has potential to leak. This was similar to the findings by Moghadamyeghaneh et al (2016)[15] that recorded 3.8% in their studies. The current study had a mortality of 7%, which was higher than Bjorg(2000) et al[16] who recorded a declining mortality of 4% from 5% over a decade. The higher mortality in this study can be attributed to tumour patients presenting with metastatic disease.

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