

PATTERN OF INTESTINAL OBSTRUCTION IN A SEMIURBAN NIGERIAN HOSPITAL

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ABSTRACT

Introduction: Intestinal obstruction remains one of the commonest causes of acute abdomen worldwide. The pattern of intestinal obstruction varies from one place to another. We report the pattern of intestinal obstruction observed in a semi urban Nigerian hospital over a 5 year period.

Materials and Methods: Records of patient admitted and managed for intestinal obstruction between April 2001 and April 2006 at the federal medical centre, Owo, Southwestern Nigeria, were reviewed. Demographic data as well as parameters relating to the symptoms, duration, onset, type, diagnosis, intraoperative findings, as well as postoperative outcomes were retrieved. All data was entered into a personal computer and analyzed using SPSS for windows version 11.

Results: A total of 95 patients were managed during the period. The mean age was 39 years. The male: female ratio was 1.8:1. Adhesive intestinal obstruction was the commonest cause of symptoms in 44%, followed by volvulus in 14% and external hernias in 11% of the patients. A correct preoperative diagnosis was made in over 70% of the patients. Out of those with adhesive obstruction, 75% had a previous abdominal or groin operation while 57% had surgical exploration for failed conservative management. The mean duration of hospital stay was 6 days and the overall mortality rate was 20%.

Conclusion: Adhesive intestinal obstruction is the commonest cause in this semi-urban population which was studied. Obstructed hernia is becoming increasingly less common as a cause of intestinal obstruction.

Key Words: Pattern, Intestinal Obstruction, Semiurban Hospital.

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INTRODUCTION

Intestinal obstruction is a common cause of acute abdomen worldwide. It is the leading cause of morbidity and mortality from all causes of acute abdomen. The pattern of intestinal obstruction varies between communities and in different age groups. The etiology and clinical presentation of intestinal obstruction in children is similar¹.

In adults however, various patterns are reported. In Ibadan Southwestern Nigeria, obstructed hernia is the commonest cause of mechanical intestinal obstruction in adults.² This is corroborated by other studies^{3, 4, 5}. *Ascaris* infestation is no longer an important etiologic factor in this age group compared to children.^{2, 6} The proportion of mechanical intestinal obstruction due to tumors is on the increase.^{7, 8} In Nyeri, Kenya, sigmoid volvulus is a leading cause of mechanical intestinal obstruction in adults followed by external hernias.⁹ In Ethiopia small bowel volvulus is the most common cause of acute abdomen¹⁰. Adhesive intestinal obstruction has been reported as the most common cause of

intestinal obstruction in other reports.^{11, 12}

Besides differing from place to place, the pattern of intestinal obstruction has been observed to be changing over time in the same location.^{13, 14} These changes have been linked to several factors which, include change in lifestyle, especially diet, improved level of education, increased accessibility to and improvement in health care facilities.

With more external hernias being electively repaired, adhesive intestinal obstruction has gradually emerged as the leading cause of mechanical intestinal obstruction in places where external hernias had hitherto been the most common. Colonic neoplasms have been on the increase as a cause of intestinal obstruction.^{8, 13}

The purpose of this study was to document the pattern of intestinal obstruction in this semi urban Nigerian hospital and to compare with patterns reported from other centers urban, semi urban and rural.

MATERIALS AND METHODS

The study was done at the Federal Medical Centre, Owo, southwestern Nigeria. A retrospective review of all patients with a diagnosis of intestinal obstruction from April 2001 to April 2006 was carried

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out. Demographic data, duration of symptoms before presentation, preoperative diagnosis, intraoperative findings, and outcome of treatment were retrieved. All data collected were analyzed using the statistical package for social sciences software version 11 and the results are presented.

RESULTS

A total number of 95 patients were managed for intestinal obstruction during the study period. There were 61 males (64.2%) and 34 females (35.8%). The male: female ratio was 1.8:1. The male gender was significantly more than females $p=0.026$. The age ranged from 1 month to 90 years and the mean age was 40 years and the median was 39 years. *Table 1.*

Thirty-three, (34.7%) of them were farmers while 24 (25.3%) were traders. The other occupational distributions are as shown in *Figure 1.*

Sixty-two (65.3%) presented within the first 24 hours while sixty- six (78.9%) of them presented within 48 hours of onset of symptoms. Sixty-two of them (65.3%) had no past history of groin or abdominal surgery.

Adhesive intestinal obstruction was the commonest diagnosis and occurred in 42 (44.2%) of patients. It was followed by volvulus which was present in 14 (14.7%). Hernias were next being present in 11 patients (11.6%). Intussusception occurred in 8 patients (8.4%), followed by large bowel tumors 7 patients (7.4%). Two patients (2.1%) had no definite diagnosis and died within 48 hours of presenting. The other diagnoses are shown in *Table 2.*

Seventy patients (73.7%) had a correct preoperative diagnosis. The others had their diagnosis confirmed at surgery.

The diagnosis of adhesions was correct 84.4% of the time, being confirmed either by the patient improving with conservative management or at open laparotomy, in those in whom surgery was indicated. The sex distribution in patients with adhesive intestinal obstruction was equal. Twenty-four patients (75 %) of patients diagnosed with adhesive intestinal obstruction had a previous abdominal or groin operation.

Of the patients who had adhesions, 19 (57.5%) had surgical exploration for adhesiolysis following failed conservative management.

Overall 37 patients (38.9%) were managed conservatively, while 58 (61.1%) had surgical operations.

Sixty-five (68.4%) of all those treated were discharged home and were followed up in the surgical outpatient unit. The overall mortality rate was 20% as 19 patients died. Out of these, 10 had surgery, while 9 did not as they either died while being resuscitated for surgery or during treatment. Details of mortality are as shown in *Table 3.*

Table 1. Age and Sex Distribution of Diagnosis

Age range (years)	Gender		Total (%)
	Female (%)	Male (%)	
0-9	3 (3.2)	9 (9.5)	12 (12.6)
10-19	0 (0)	3 (3.2)	3 (3.2)
20-29	5 (5.3)	8 (8.4)	13 (13.7)
30-39	10 (10.5)	10 (10.5)	20 (21.1)
40-49	6 (6.3)	6 (6.3)	12 (12.6)
50-59	5 (5.3)	6 (6.3)	11 (11.6)
60-69	1 (1.1)	10 (10.5)	11 (11.6)
70-79	3 (3.2)	7 (7.4)	10 (10.5)
>80	1 (1.1)	2 (2.1)	3 (3.2)
Total	34 (35.8)	61 (64.2)	95 (100)

Mean = 40, Median = 39.

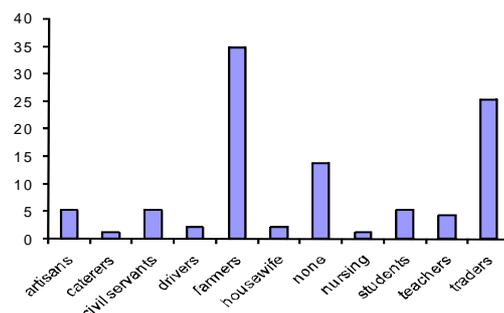
Table 2: Diagnosis

Diagnosis	Female (%)	Male (%)	Total (%)
Adhesions	20 (21.1)	22 (23.3)	42 (44.2)
Volvulus	3 (3.2)	11 (11.6)	14 (14.8)
Hernia	3 (3.2)	8 (8.4)	11 (11.6)
Intussusception	4 (4.2)	4 (4.2)	8 (8.4)
Cancer	2 (2.1)	5 (5.3)	7 (7.4)
Hirschsprung's disease	1 (1.1)	3 (3.2)	4 (4.3)
Paralytic ileus	0 (0)	3 (3.2)	3 (3.2)
Fecal impaction	0 (0)	3 (3.2)	3 (3.2)
Aneurysm	1 (1.1)	0 (0)	1 (1.1)
None	0 (0)	2 (2.1)	2 (2.1)
Total	34 (35.5)	61 (64.5)	95 (100)

Table 2: Summary of Causes of Mortality

Patient category	Diagnosis	No (%)	Total (%)
Patients who had surgery	volvulus	6 (6.3)	10 (10.5)
	adhesions	3 (3.2)	
	hernia	1 (1.1)	
Patients who had no surgery	hernia	1 (1.1)	9 (9.5)
	Hirschsprungs disease	2 (2.1)	
	Neonatal sepsis	1 (1.1)	
	Paralytic ileus	1 (1.1)	
	Volvulus	1 (1.1)	
	none	2 (none)	
	cancer	1 (1.1)	
Total			19(20)

Figure 1: Occupational Distribution Of Patients With Intestinal Obstruction



Seven (7.4%) discharged themselves against medical advice at different points in the course of their management, while 4 (4.2%) of them were referred out of the hospital for further management.

The duration of hospital stay ranged from 1 to 28 days. The mean duration of stay was 6 days.

DISCUSSION

Intestinal obstruction remains a common encounter in general surgical practice in the study population. The mean age of 40 years in this study is similar to that reported by Adesunkanmi et. al.¹⁴ Their study also reported a male: female ratio of 1.7:1 and adhesions were the most common cause of intestinal obstruction accounting for 41.5%.

A male preponderance (m: f = 3.7:1) of intestinal obstruction has been reported from northwestern Nigeria,¹⁵ where external hernia which account for 32.2% of cases, were the commonest cause. Earlier studies from Ilesa southwestern Nigeria revealed that more than a quarter of abdominal hernias presented with intestinal obstruction¹⁶ but the pattern of intestinal obstruction has however been observed to be changing with time.

Adhesive intestinal obstruction has been emerging as the most common cause of intestinal obstruction.^{17,11,14,12}

This was also observed in this study. This pattern has been associated with communities with developed or developing health care system. Of the patients with adhesions, 39.9% were managed conservatively while the others had surgery. It is documented that up to 50% of adhesive obstruction could be managed conservatively¹². In this study, 42.5% were managed conservatively. Bowel resection and re-anastomosis may be required in up to 43.8 % of patients being managed for adhesive intestinal obstruction.¹² Mortality from adhesive intestinal obstruction is usually low¹² and despite being the commonest cause, accounted for only three cases of mortality in this study. All the patients presented late and had bowel gangrene and perforation in the ileum or caecum, with septic complications.

Intestinal volvulus was the second most common cause of intestinal obstruction in this study. Eleven out of 13 patients with volvulus were farmers confirming this as a disease of the predominantly rural population with high fiber diet¹⁸. There were three females and ten males and the mean age for patients with volvulus was 50 years. The degree of twisting was not documented and mortality in the patients with volvulus in this study was 53.8%. The high mortality rate is connected with the late presentation, the associated gangrene, and septic complications which often follow perforation. A larger series on sigmoid volvulus among Africans¹⁹ had shown an overwhelming male preponderance,

and 64% were under 50 years of age. Most of the patients in that study also presented with intestinal obstruction and the mortality was 12%. In western societies, there is a female preponderance. When volvulus necessitates emergency surgery it carries substantial mortality therefore, reduction of the volvulus using sigmoidoscopy should be followed by elective resection during the same hospital admission.¹⁹ Facilities for endoscopic untwisting are not readily available in this practice environment. *Hernias* remain an important cause of intestinal obstruction in this review. It is the third most common cause, and accounted for two mortalities. It is responsible for the most mortality in a review from northwestern Nigeria.¹⁵

Mass public health campaigns for elective repairs of hernias may help ensure that this preventable cause of death is averted.

Intussusceptions occur predominantly in children, with 90.6% of cases being seen in them. Intussusceptions in children are usually primary while that in adults are secondary with causes varying from polyps to malignancies.^{20, 21} Our review noted 8 cases of intussusceptions, but only two were infants. The others occurred in adults and the mean age in these was 49.2 years. The small number however makes far reaching conclusions difficult.

Seven patients with intestinal obstruction in this review had colonic *neoplasm*. Earlier reports from southwestern Nigeria⁷ suggest that colonic neoplasm may not be as rare as previously supposed. A sizeable number of patients suffer from colonic neoplasm and over two-thirds presented with intestinal obstruction.⁷ Due to late presentation, colonic neoplasm is assuming an increasing importance in the etiology of intestinal obstruction in younger patients⁸

An overall mortality rate of 19.7% in intestinal obstruction reported for intestinal obstruction⁵. This value is similar to the value of 20% obtained in this review. Rates as low as 3.5% have been reported from places with much more advanced health care delivery¹⁷ and where patients present early for treatment.

The reasons for such high mortality are attributable to delayed presentation, fluid and electrolyte imbalance, intestinal ischemia and gangrene with septic complications. The causes of death could not be ascertained as autopsies were not done.

CONCLUSION

Adhesive obstruction is the most common type in this study population followed by volvulus. Obstructed hernia is still an important etiologic factor. Mortality rate is rather high and can be improved upon. Late presentation is a main cause.

The high rate of missed preoperative diagnosis may be due to poor accessibility to modern radiologic imaging services which could enhance diagnosis. It would be wrong to assume a wait and see policy when in doubt and prompt surgical intervention will prevent unnecessary deaths.

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