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ORIGINAL RESEARCH

To evaluate the colonic carcinoma in patients with acute intestinal obstruction

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Abstract
Aim: To evaluate the colonic carcinoma in patients with acute intestinal obstruction
Methods: The study was cross sectional study was done in the department of surgery from January 2018 to September 2021, after taking the permission of ethical committee. 150 Patients presented with acute onset of vomiting, constipation and abdominal distension were included in this study. Diagnosis of intestinal obstruction was made based on clinical examination, history, image evidence in X ray and ultrasonogram.
Results: The most common diagnosis was obstructive hernia (35.3), followed by adhesion obstruction (27.3%) and Carcinoma colon (13.3%). There was higher prevalence of Carcinoma Colon among males compared to females (70% vs 30%) which was statistically significant with chi square of 4.13 and p value 0.041.
Conclusion: We concluded that the rise in the number of cases of colon cancer presenting as acute intestinal obstruction. Small bowel obstructions were much more common mainly due to adhesions and obstructed herniae.
Keywords: Acute intestinal obstruction, Colonic carcinoma, Obstructed hernia

Introduction

Colorectal carcinoma is one of the most widespread malignancies worldwide. In 2012, colorectal carcinoma became the third most common cancer globally, with nearly 1.4 million new cases diagnosed.[1] The age-standardized rate for both sexes differs from country to country; the age-standardized rate for males was 41.5 to 61.6 per 100,000, and the age-standardized rate for females was 25.4 to 35.8 per 100,000.[1] The incidence rate was found to be higher in developed countries than in developing countries for both sexes.1 Colorectal carcinoma was most frequently reported cancer in males and the second most frequently reported cancer in females in peninsular Malaysia according to the 2006 report of the Malaysian National Cancer Registry.[2] Many factors affecting the prognosis of colorectal carcinoma have been studied. According to Park et al.[3] colorectal carci- noma is a complex clinical problem, and high risks of mortality were associated with advanced-stage tumours, elevated preop- erative serum carcinoembryonic antigen, rectal cancer, and ulceroinfiltrativetumours. In the present study, we assessed the prognosis of colorectal carcinoma patients with and without intestinal obstruction. Malignant large bowel obstruction is a clinical presentation associated with a significant likelihood of colorectal carcinoma. Markogiannakiset al.[4] found that colorectal carcinoma was one of the top three causes of intestinal obstruction (13.4%) among 150 patients who presented with intestinal obstruction. The effects of obstruction on the large bowel included ischemia (16.6%), necrosis (16.6%), and perforation (11.1%).[4] It still remains a challenge as it causes morbidity and increased

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financial expenditure worldwide.[5] In the USA IO accounts for about 30,000 deaths plus $3 billion per year in direct medical costs which are responsible for approximately 15% of hospital admissions for acute abdominal pain with approximately 20% of these cases needing acute surgical care.[6,7] Regional studies at non-governmental hospitals of Uganda documented its incidence and management.[8,9] However at Mulago National Referral and Teaching Hospital (MNRTH), which is the nation's tertiary health care institution offering free services to patients, has anecdotal data from a study done in 1961.[9] Also raw admission data from MNRTH ED shows an increasing surgical burden of averagely 30 patients monthly with suspected diagnosis of IO.[10]

Material and methods

The study was cross sectional study was done in the department of surgery from March 2018 to February 2021, after taking the permission of ethical committee. 150 Patients presented with acute onset of vomiting, constipation and abdominal distension were taken into study. Diagnosis of intestinal obstruction was made based on clinical examination, history, image evidence in X ray and ultrasonogram. The diagnosis of colonic carcinoma was based on follow up of the patient's by contrast enhanced CT abdomen, biopsy following laparotomy and CEA levels. Patients who had improvement of suggestive symptoms, symptoms due to obstruction at the level of gastric outlet and adynamic intestinal obstruction cases were excluded from the study.

Results

The age of the participants ranged from 12 to 88 years. The mean (SD) of the participants was 58.05 (15.9) years. The average age of patients diagnosed with carcinoma colon was 59.03. Majority of the participants 132 (88%) were having non vegetarian diet. In total 44 (29.3%) patients had history of previous laparotomy.

Table 1: diagnosis of the patients

Final diagnosis	N (%)	95%CI
Obstructed hernia	53 (35.3)	27.00-41.25
Adhesive obstruction	41 (27.3)	20.50-33.79
Carcinoma colon	20 (13.3)	11.71-22.82
Intestinal metastasis	2 (1.33)	0.56-6.44
Intussusception	4 (2.6)	2.22-8.00
Carcinoma rectum	10 (6.6)	5.07-13.21
Ileocaecal TB	6 (4)	3.37-10.28
Sigmoid volvulus	5 (3.3)	2.97-9.53
Appendicular malignancy	1 (0.67)	0.07-5.17
Malrotation	2 (1.33)	0.28-5.69
Pseudoobstruction	2 (1.33)	0.28-5.69
Lymphoma	2 (1.33)	0.28-5.69
Congenital bands	1 (0.67)	0.07-5.17
Acute appendicitis	1 (0.67)	0.07-5.17

The most common diagnosis was obstructive hernia (35.3), followed by adhesion obstruction (27.3%) and Carcinoma colon (13.3%).

Table 2: Gender and diagnosis of the patients

Diagnosis	Gender	
	Males (n=98)	Females (n=52)
Obstructed hernia	33 (33.67)	18 (34.61)
Adhesive obstruction	26 (26.53)	15 (28.84))

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Carcinoma colon	10 (10.2)	12 (23.08)
Intestinal metastasis	1 (1.02)	0 (0)
Intussusception	3 (3.06)	0 (0)
Carcinoma rectum	9(9.18)	1 (2.27)
Ileocaecal TB	4 (4.08)	4 (7.69)
Sigmoid volvulus	5 (5.1)	1 (1.92)
Appendicular malignancy	0 (0)	1 (1.92)
Malrotation	2 (2.04)	0 (0)
Pseudoobstruction	2 (2.04)	0 (0)
Lymphoma	2 (2.04)	0 (0)
Congenital bands	1 (1.02)	0 (0)
Acute appendicitis	1 (1.02)	0 (0)

Table 3: Gender association of carcinoma colon.

Parameter	Final Diagnosis		P value
	Other diagnosis (n=100)	Carcinoma colon (n=50)	
Gender			
Female	33 (33)	15 (30)	0.041
Male	67 (67)	35 (70)	

There was higher prevalence of Carcinoma Colon among males compared to females (70% vs 30%) which was statistically significant with chi square of 4.13 and p value 0.041.

Table 4: Clinical features and carcinoma colon

Parameter	Final Diagnosis		P value
	Other diagnosis n=100	Carcinoma colon n=50	
Diet			
Vegetarian	18 (18)	0 (0)	
Non vegetarian	82 (82)	50 (100)	0.13
Previous laparotomy			
Present	62 (62)	4 (8)	
Absent	38(38)	36 (72)	0.02
Abdominal distension			
Present	79 (79)	24 (48)	0.10
Absent	21 (21)	6 (12)	
Vomiting			
Present	83 (83)	27 (54)	0.98
Absent	17 (17)	23(46)	
Guarding			
Present	65 (65)	36 (72)	0.88
Absent	35 (35)	14(28)	
constipation			
Present	82 (82)	38 (76)	0.09
Absent	18 (18)	12 (24)	
Dehydration			
Present	46 (46)	25 (50)	0.09
Absent	54 (54)	25 (50)	

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Table 5: Age group of different studies.

Age group	Adhikari[13]	ColeGJ[15]	Harban Singh[16]	Present study
12-19	9%	10%	10%	3%
20-29	11%	10%	16%	5%
30-39	15%	18%	18%	7%
40-49	24%	16%	15%	19%
50-59	13%	15%	10%	27%
60-69	20%	16%	20%	19%
70-79	8%	9%	5%	18%
80-89	4%	6%	4%	9%

Table 6: Symptoms

Study group	Painabdom- en	Vomi-ting	Distens-ion	Consti- pation
Present study	100%	64%	69%	79%
Adhikari[13]	72%	91%	93%	82%
JahangirSarwar Khan[14]	100%	92%	97%	97%

Discussion

The most common cause for intestinal obstruction in this study was obstructed inguinal hernia. This was followed by adhesive intestinal obstruction. On comparison, a study by McEntee et al showed adhesions as the most important cause of intestinal obstruction in western population.[11]The higher incidence of obstructed hernia as the leading cause in developing countries could be due to absence of accessibility to surgeons in rural areas. This results in most of the asymptomatic hernias to be left untreated and ultimately becoming obstructed. Colorectal tumors formed 21.6% of the cases in this study. The proportion of colon cancer in cases presenting with symptoms of intestinal obstruction was around 15%. The average age of patients diagnosed with carcinoma colon was 60. The sex ratio in this study showed a male predominance by almost 1.88:1. In the study by Pillai et al the male to female ratio was 1.75:1.[12]In the study by Adhikari et al the male to female ratio was 4:1.[13] It was noticed that none of the patients who were vegetarian were diagnosed with carcinoma colon.

Most of the patients were managed with hernia repair owing to the increased proportion of cases. The next most common line of management was resection and anastomosis. Non operative management played a definite role in the cases presenting with post-operative adhesion causing intestinal obstruction especially during the first episode. Among the cases which were diagnosed with carcinoma colon, 35% of the cases underwent Hartmann's procedure. Palliative loop stoma creation was done for 23% of the patients. The rest of the patients underwent resection and anastomosis (42%). The aim of this study was to highlight the increasing trend of malignant bowel obstruction, specifically colon cancer. This study found that 15% of the cases which presented to the hospital with acute intestinal obstruction was due to colon cancer and 7% of the cases was due to carcinoma rectum. The most consistent symptom among patients presenting with acute intestinal obstruction is obstipation followed by abdominal distension. All patients who presented to the hospital in this study came with complaints of abdominal pain. This is similar to a study conducted by Jahangir Sarwar et al where 100% of the cases had pain abdomen as a presenting complaint.[14] constipation was a complaint in 80% of the patients in this study. This corroborates with the study finding by Khan et al (97%) as well as Adhikari et al 15 (82%). Unlike other studies, only about 73.33% of patients in present study came with vomiting and only 47.33% were dehydrated on presentation.

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Conclusion

We concluded that therise in the number of cases of colon cancer presenting as acute intestinal obstruction. Small bowel obstructions were much more common mainly due to adhesions and obstructed herniae.

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