

Characteristics of Colorectal Carcinoma in Kano, Nigeria: An Analysis of 50 Cases

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ABSTRACT

Background: Several recent publications have shown a rising incidence with high morbidity and mortality of colorectal cancer amongst blacks. The aim of this study was to determine the epidemiological profile of the colorectal carcinoma in our hospital, a major referral centre in northwestern Nigeria.

Methodology: A retrospective analysis of all histologically proven cases of colorectal carcinoma was performed from January 1999 to December 2002.

Results: Fifty patients were managed during the study period with an average presentation of 12.5 cases per year. There were 36 (72%) males and 14 (28%) females (M:F=2.5 to 1). The mean age at presentation was 42.9 years with 36 patients (72%) below 50 years of age. Carcinoma of the colon occurred in 22 (44%) patients and rectal carcinoma in 28 (56%) patients. Twenty (71.4%) of the 28 rectal cancers were digitally palpable. Thirty-eight (92.7%) patients had palliative resection, while 3 (7.3%) had curative resection. Adenocarcinoma was the only histologic type, with 15 (30%) cases of the mucinous variety.

Conclusion: There is need to increase awareness through public education about this malignancy and its management. Any adult with complaints of vague abdominal pain, blood or mucus in the stool or features of haemorrhoids which may herald the onset of colorectal cancer should be adequately investigated with digital rectal examination (DRE) and proctosigmoidoscopy and barium enema where appropriate.

KEY WORDS: Colorectal cancer; Characteristics; Palliation; Northwestern Nigeria.

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INTRODUCTION

Colorectal cancer is among the leading causes of cancer mortality in Western Europe and United States¹. It is relatively uncommon in Africans compared to the Caucasians, and this is arguably related to our high fibre/low fat diet and low incidence of pre-malignant conditions such as adenomatous polyposis coli, and ulcerative colitis^{2,4}. The gradual decline in incidence and improvement in outcome in the western world largely has been attributed to a combination of factors including more widespread colorectal carcinoma screening, early presentation, advances in diagnostic tools and treatment modalities^{5,6}.

Majority of patients in the West African sub-region present with advanced disease with consequentially poor prognosis⁷⁻⁹.

This retrospective study was carried out to determine the prevalent clinical features, histologic types, as well as site distribution of colorectal cancer in Kano, Northern Nigeria.

MATERIALS AND METHODS

This is a 4-year retrospective study of patients with colorectal carcinoma admitted to the General Surgical Unit of Aminu Kano Teaching Hospital (AKTH) Kano, from January 1999 to December 2002.

All patients with histologically proven diagnosis of colorectal cancers managed during the study period were included in this study. Relevant clinical data were obtained from patients' folders retrieved from Medical records library, operation notes, histopathology and ward registers. The data collated included the age and sex of each patient, clinical features, site of the tumours, associated pre-malignant conditions, treatment modalities, histologic types and staging. The staging was according to Dukes' classification. Histological classification was based on WHO histological typing of tumours¹⁰. Results were presented as means, frequency tables, and figures where appropriate.

RESULTS

A total of 50 patients with histologically proven colorectal cancers were managed during the 4-year study period representing a mean of about 12.5 cases per year.

The age and sex distribution is shown in Figure 1. There were 36 males (72%) and 14 females (28%) with a sex ratio of 2.6 to 1. The age range was 18 to 80 years with peak age prevalence in ages 31 to 40 years, and a mean age of 42.9 years. Overall 14 (28%) patients were below 30 years, and 36 (72%) were below 50 years of age. Three (6%) patients, all males were between 18 to 20 years of age.

Table I. shows the clinical features of colorectal carcinoma. The duration of presentation of symptoms varied from 5 months to 4 years. Eleven patients (22%) presented less than 6 months, while 39 patients (78%) presented after 6 months of commencement of symptoms. The main features of colonic carcinoma were weight loss, abdominal pain, anaemia, alteration of bowel habits, anorexia and abdominal mass. Major clinical manifestations of rectal carcinoma were bleeding per rectum, alteration of bowel habits, weight loss, low back pain and tenesmus. Faecal incontinence, difficulty in passing urine and recto-vaginal fistula were seen in some patients with locally advanced rectal carcinoma. Fifteen (30%) patients with colorectal carcinoma presented with acute intestinal obstruction. Six patients had been managed for haemorrhoids prior to presentation. One of them had haemorrhoidectomy in our centre only to present a month later with acute intestinal obstruction from advanced caecal tumour. One patient with advanced rectal carcinoma was managed for amoebiasis for 2 years before presentation. A 25-year old woman, who presented with rectal carcinoma in the second trimester of pregnancy, had an uneventful full term delivery after an abdomino-perineal resection of the rectum.

The site distribution of the tumours is shown in Figure 2. Twenty-two (44%) patients had colonic carcinoma and 28 (56%) had rectal carcinoma, with a colon to rectum ratio of 0.8 to 1. Carcinoma of the ascending colon was found

in 8 (20%) patients, caecum in 6 (12%), sigmoid colon in 3 (6%), descending in 2 (4%), and hepatic flexure in 3 (6%) patients.

In 20 (71.4%) out of the 28 patients with rectal carcinoma the tumour could be palpated on digital rectal examination. Overall, colorectal carcinoma was more common on the left (33 patients, 66%) than on the right (17 patients, 34%). But when considered separately, colonic tumours were more common on the right side (77.3%) than the left (22.7%). There was one (2%) case of adenomatous polyposis coli in a woman with carcinoma of the hepatic flexure whose son had died of advanced rectal carcinoma. No synchronous tumour was found in this study.

The surgical options are presented in Table II. A total of 41 (82%) patients underwent surgery. Operation was excluded in 4 (14.5%) because of advanced disease, while 5 (17.9%) patients refused surgery. Thirty-eight (92.7%) patients had palliative resection, while 3 (7.3%) had curative resection. Ten patients had adjuvant postoperative chemotherapy using 5-fluorouracil and levamisole, thirty-six had levamisole alone, and one had chemo-irradiation.

The histological types and grading are shown in Table III. Primary adenocarcinoma was the only histological type. Six (12%) of the adenocarcinoma were well differentiated, 12 (24%) moderately differentiated, and 17 (34%) poorly differentiated. There were 15 (30%) cases of mucinous adenocarcinoma. Duke's staging was possible in 27 (54%) patients. Duke's stage A was found in 2 (7.4%), stage B in 4 (14.8), stage C in 21 (77.8%). Follow up was very poor as majority of the patients defaulted from the clinics after discharge or refused further medical treatment.

Table I. Presenting features of colon and rectal cancer in Kano

Features	Colon(%) (n=22)	Rectum(%) (n=28)
Weight loss	19 (86.3)	21 (75)
Abdominal pain	17 (77.2)	12 (42.8)
Anaemia	15 (68.2)	5 (17.8)
Constipation	14 (63.6)	20 (71.4)
Abdominal mass	13 (59.1)	5 (17.8)
Anorexia	13 (59.1)	10 (35.7)

Blood in stool	7 (31.8)	23 (82.1)
Hepatomegaly	5 (22.7)	3 (10.7)
Jaundice	4 (18.2)	1 (3.6)
Tenesmus	0 (0)	15 (53.6)
Feecal incontinence	0 (0)	2 (7.1)
Difficult micturition	0 (0)	2 (7.1)
Rectovaginal fistula	0 (0)	1 (3.6)
Low back pain	2 (9.0)	16 (57.1)

Table II. Surgical options

Colonic Carcinoma: (n=22)	
	Frequency(%)
Palliative surgery:	
Caecum/ascending colon	
Right hemicolectomy	14 (63.6)
Hepatic flexure:	
Extended right hemi colectomy	3(13.6)
Sigmoid colon:	
Sigmoid colectomy	2 (9.0)
Hartmann's procedure	1 (4.5)
Left colon:	
Left hemicolectomy	2 (9.1)
Rectal Carcinoma (n=19)	
Palliative*A- P- Resection	12 (63.2)
Colostomy and biopsy only	4 (21.1)
Curative *A-P- Resection	2 (10.5)
Curative anterior resection	1 (5.2)

*A-P=Abdomino-perineal

Table III. Histological types.

Histological type/grading	Colon	Rectum	Total (%)
Adenocarcinoma (n = 50)			
Well differentiated	3	3	6 (12.0)
Moderately differentiated	5	7	12 (24.0)
Poorly differentiated	7	10	17 (34.0)
Mucinous adenocarcinoma	7	8	15 (30.0)
Total	22	28	50(100)

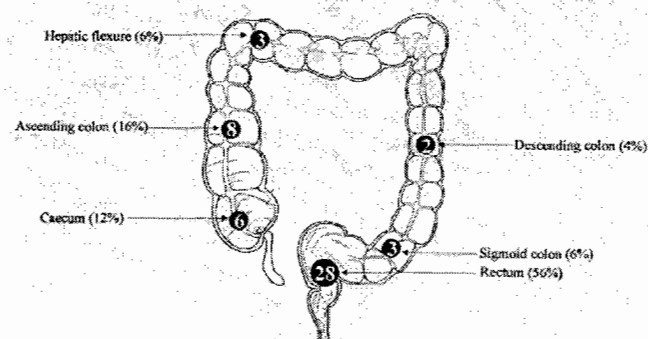


Figure 2. Site Distribution of Colorectal Carcinoma in Aminu Kano Teaching Hospital.

DISCUSSION

Recent data have continued to show an increase in incidence of colorectal carcinoma in blacks^{4,5,7-9,11,12}. Colorectal cancer is said to be

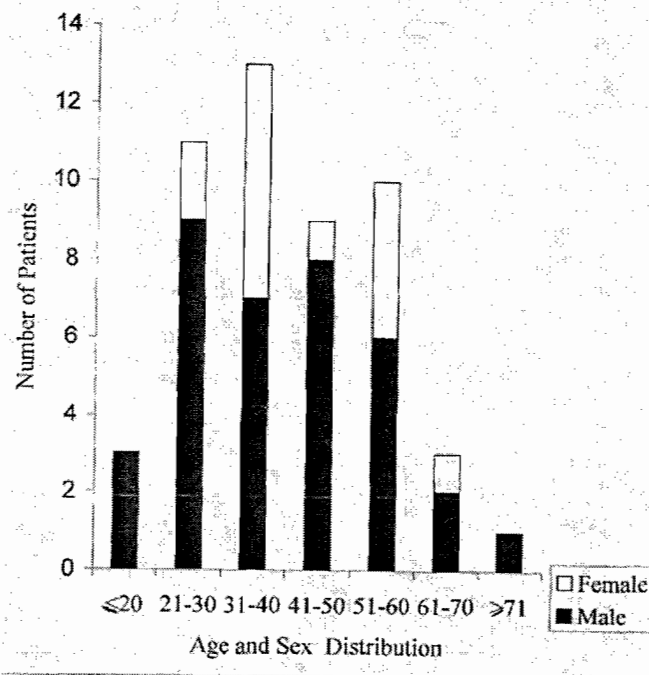


Figure 1. Age and Sex Distribution of Colorectal Carcinoma in Aminu Kano Teaching Hospital.

uncommon before the age of 40 years but increases with age thereafter⁸. The age of highest incidence of colorectal cancer in this study was 31-40 age groups. This is lower than the peak incidence in the 5th decade in Lagos⁷, and the 7th decade in Ghana and UK⁸. The mean age of 42.9 years in this study is comparable to 49 years in Lagos⁷, 53 years in Ife¹³, and 54.3 years in South Africa⁴, in contrast to the seventh decade in Caucasians. These findings affirm the assertion that patients in the West African sub-region are about 10-15 years younger than the Caucasians^{4,7}. Similarly 28% of our patients were below 30 years of age. In comparison, this is 18%, 8%, 6%, 5% and 2% from Ibadan¹⁴, Uganda¹⁵, South Africa⁴, Ghana⁸, and Ife¹³ respectively. In contrast, less than 1% of colorectal carcinoma in western world occur in patients under 30 years of age^{16,17}. High incidences in the younger age group in Africans may be related to environmental or genetic factors. This would be an interesting area for future research.

The clinical features of colorectal carcinoma in this study are not different from other reported series¹⁻¹⁴. Although, precise preoperative

staging was not possible because of lack of facilities for colonoscopy, endo-rectal ultrasound, and affordable CT-scan, late presentation with advanced disease was very common among our patients similar to other studies in our subregion^{7,8,13,14}. This is reflected in the high incidence of acute intestinal obstruction, Dukes' C disease, high palliative surgery and low curative resection rate. Thirty percent of the patients in this study presented with acute intestinal obstruction. Obstructing colorectal cancers are usually more advanced and associated with higher incidence of metastases compared to non obstructing ones¹⁸. Reasons adduced for late presentation in our environment include patronage of traditional medical practitioners^{7,8} and misdiagnosis by orthodox medical practitioners as seen in 14% of cases in this study. Misdiagnosis can be avoided by thorough clinical evaluation including digital rectal examination (DRE), and the use of proctosigmoidoscopy and barium enema in patients with colorectal complaints. The value of DRE and proctosigmoidoscopy for early detection of colorectal cancer in our environment cannot be overemphasized as 71% of rectal carcinoma in this series was digitally palpable. This figure is comparable to 69% in Ibadan⁹, and 78% in Ghana⁸, in contrast to 25-30% in the western world⁷.

The ratio of colonic to rectal tumour in this study was 0.8 to 1, and conforms to reports from other centers in Africa⁴. Left sided tumours were more common than the right in this series. In contrast, there has been increasing incidence of right sided cancers in USA, and other parts of Western Europe, attributable to increasing use of colonoscopy¹⁹, which makes the detection of right sided tumours easy. Colonoscopy is a rarity in many centres in our sub-region. But when considered separately, colonic cancer was predominantly right sided similar to reports from our sub-region.

This study also confirms the low incidence of pre-malignant conditions such as adenomatous polyps in the Africans⁴. It is now generally agreed that colorectal cancers are preceded by adenomatous polyps³. Epidemiologic studies

have shown that countries with low rates of large intestinal cancer such as ours also have low rates of adenomas¹⁶. Therefore colorectal carcinoma in the African may not follow the well established adenoma-carcinoma sequence. On the other hand adenomas are not likely to be detected because of late presentation by our patients.

Adenocarcinoma was the only histological type in this study with more than half being poorly and moderately differentiated. Of interest is the high proportion of our patients with mucinous adenocarcinoma. These cancers are more common in younger age groups as well as being advanced at diagnosis with poorer prognosis, and also constitutes a significant proportion of colorectal cancers in low incidence countries^{4,21}. Dukes' staging was possible in 54 % of cases because biopsy only was done in some patients and it was not reported by the Pathologist in others. Of those with Dukes' staging, 77.8% were Duke C. This is a reflection of the advanced state of the disease at presentation.

Palliative resection was done in 92.7% of our patients because of advanced nature of the disease as evidenced by macroscopic residual disease, hepatic deposits, involvement of adjacent structures, and multiple mesenteric lymphadenopathy. Palliative resection was done to prevent future complications such as haemorrhage, perforation or fistulation. Intra-abdominal and pelvic recurrences were common in our patients and difficult to palliate effectively. The curative resection rate in this study was very low similar to 15% reported from Lagos⁷. In contrast, higher rates of about 60%-80% has been reported in North America and Europe where patients present with less advanced disease⁶. Nonetheless, recurrent malignant disease still develops in about 30% to 40% of patients who have undergone "curative" resection²².

There is strong evidence that adjuvant preoperative and postoperative radiotherapy²³, chemotherapy²⁴, and the adoption of total mesorectal excision (TME)²⁵ reduce local recurrence and improve survival rates. Preoperative radiotherapy reduces chances of

recurrence, shrinks tumour to allow operability, and allow sphincter saving operations. Unfortunately, radiotherapy service is not accessible and affordable in our sub-region. The adjuvant treatment of colorectal cancer with chemotherapy always involves 5-fluorouracil (5-FU), and this to some extent improves the quality of life⁴. Patients with Duke's A tumours do not need chemotherapy because the chances of recurrence is very low. The commonly used regime is intravenous (bolus) 5-FU and leucovorin for 5 consecutive days, every 28 days (Mayo clinic regimen)²⁴. Newer and more efficacious combination chemotherapy includes intravenous oxaliplatin and oral capecitabine being increasingly used in developed countries for advanced colorectal cancer²⁵. These regimes are not affordable by the majority of our patients, at least for now.

Survival data is not available in this study because of very poor follow up. But since many of them presented with advanced disease the prognosis was not expected to be good. Only four patients with potentially curative resection are still being followed up for about two years now without any clinical evidence of recurrence.

The results of this study show that colorectal cancer is not uncommon in our centre. Our patients are relatively young, and present with advanced disease. Seventy-one percent of the rectal carcinoma in this study was diagnosed by digital rectal examination, and the incidence of pre-malignant condition is low. There is need for public enlightenment campaign on colorectal cancers in the sub-region so as to increase awareness on the need for early presentation, detection, diagnosis and treatment with better prognosis.

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