

CARCINOMA OF THE LARGE BOWEL

THE DISEASE AS SEEN AT THE KENYATTA NATIONAL
HOSPITAL OVER A 5 - YEAR PERIOD

1969 - 1973

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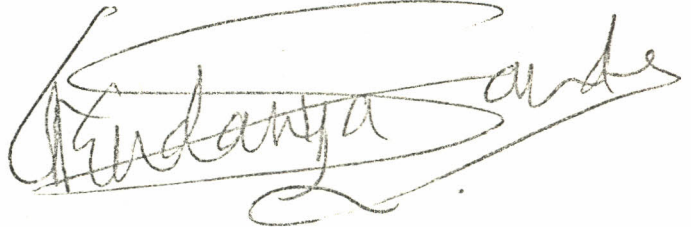
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CANDIDATE:

This thesis is my original work and has not been presented for a degree in any other University.



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This thesis has been submitted for examination with my approval as University supervisor.



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4th March 1975.

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S U M M A R Y
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CARCINOMA OF THE LARGE BOWEL

THE DISEASE AS SEEN AT THE KENYATTA
NATIONAL HOSPITAL OVER A 5 - YEAR

PERIOD : 1969 - 1973

Carcinoma of the large bowel is uncommon in East Africa. Infective intestinal pathology is common. The symptoms of large bowel cancer often simulate those of infective intestinal disease. When opportunity to undertake this study occurred, therefore, it was predicted that when cancer of colon and rectum does occur, there is a "doctor's" delay in the diagnosis. It was undertaken therefore:

- (i) To establish whether such a delay, in fact occurs, and if so to suggest means whereby it might be reduced.
- (ii) To correlate such a delay in diagnosis to operability of tumour at the time of diagnosis.
- (iii) To study the acceptability of a permanent colostomy if and when opportunity arose.

49 patients with carcinoma of colon and rectum were treated at the Kenyatta National Hospital between 1969 and 1973. Of these 31 were male and 18 female. The youngest was 16 and the oldest about 75 years old. Their average age was about 45 years. The average age of patients with carcinoma of colon and rectum in Europe and North America is about 65 years. There is thus a shift to the left in this study.

The duration of symptoms at the time of diagnosis was approximately three times that reported from North America and Western Europe. The tumours were resectable in only 38.8 per cent

of the patients. This compares unfavourably with a resectability rate of 94.2 per cent reported from the United States of America (Franklin, et al. 1968). It is suggested that the delay in diagnosis was, at least in part, responsible for the poorer prognosis of patients treated at the Kenyatta National Hospital. Indeed, the delay in diagnosis at the Vanderbilt Hospital in 1925 was comparable to that found at the Kenyatta National Hospital to-day. The duration of symptoms at the former Hospital fell from 11.5 months in 1925 to 5.5 months in 1968. The resectability rate improved from 50 per cent to 94.2 percent in the same period (MacSwain et al. 1962, Franklin, et al. 1968).

The need for adequate evaluation of large bowel symptoms in this community is emphasized.

Abdominal pain or discomfort, diarrhoea, blood in the stool and constipation are the commonest presenting symptoms. The 'Classical' symptom of morning diarrhoea was absent in this study. Weight loss, though frequently evident on clinical examination, is often not complained of. Carcinoma of the rectum tends to be diagnosed earlier than that of the colon.

Patients who present with acute intestinal obstruction give a shorter history of symptoms than other patients although this does not correlate with the curability of the disease. Indeed, the curability rate in the patients who presented with intestinal obstruction was lower than that of the rest of the

group. Factors which may contribute to this are discussed.

That most cancers of the large bowel can be diagnosed by simple investigative procedures - abdominal palpation, digital rectal examination and proctosigmoidoscopy - is clearly brought out in this study.

Ten patients in this series were offered and accepted a permanent colostomy, 5 as a palliative measure and 5 following a curative procedure. One patient refused a colostomy. The problems to be overcome by a patient with a permanent colostomy in this community are briefly discussed. The acceptability of an artificial anus appears to be related to the social environment, the education of the individual patient and the availability of appliances. In an environment of poverty, poor lay education, poor toilet facilities and great distances from urban centres the rehabilitation of a patient with a permanent colostomy is especially difficult. So that as a palliative procedure, it should be limited to those with complete obstruction in whom resection of tumour with end-to-end anastomosis or a by-pass procedure with re-establishment of bowel continuity is impossible. Even in the presence of metastases and obstruction, extirpation of the tumour provides greater comfort to the patient.

CHAPTER I

I N T R O D U C T I O N

PURPOSE OF THE PRESENT STUDY

All published reports on cancer in East Africa indicate that carcinoma of the colon and rectum constitutes no more than 2-4 per cent of all malignant tumours in this region (Davies, et al, 1965; Eshleman, 1966; Linsell, 1967, Buckley, 1967). It is thus rare.

One was, therefore, surprised when, late in 1970, 4 patients with carcinoma of the colon were admitted within two weeks to a general surgical unit of 48 beds (24 male and 24 female) at the Kenyatta National Hospital, Nairobi. None of these patients had been referred directly from a peripheral hospital although two of them had been treated at various health centres and district hospitals for abdominal complaints during the 6 months prior to admission to the Kenyatta National Hospital. It was this coincidence which prompted this study.

A review of the literature concerning the aetiology of cancer of the large bowel suggests that this neoplasm may become increasingly common in the under developed parts of the world - parallel with improving standards of living.

This study was undertaken:

- (i) To assess the delay (if any) in diagnosis of cancer of the large bowel in an area where the disease is rare and infective intestinal disease common.
- (ii) To relate such a delay to curability of the tumour at the time of diagnosis.
- (iii) To examine the acceptability of a permanent colostomy in a largely rural and unsophisticated community; and to examine the problems that a patient with a colostomy has to overcome in such a community.

A REVIEW OF THE LITERATURE

The incidence of carcinoma of the colon and rectum varies greatly throughout the world, probably because of the differences in environment; geographical conditions, living habits and diet. (2, 16-19, 32, 37, 65, 76, 87, 118, 124, 127, 131, 132).

The disease is particularly frequent in England, Scotland, Canada, the United States of America and Denmark; it is less common in most European countries, South Africa, Israel and Japan; and it is rare in countries of sub-Sahara Africa and most countries of South America (1, 7, 11, 12, 26, 31, 38, 47, 62, 74, 82).

More than the incidence of any other malignant disease, the incidence of large bowel cancer is so closely related to economic development that it has been aptly described as a disease of Western civilization, (17-19, 99, 125). It seems to be conditioned by the most recent residence rather than the ecological factors existing in the place of birth before migration. It does not appear to be related to familial factors, with the exception of familial polyposis (47, 67, 94, 112, 122).

If the observed association with economic improvement is real, then the high incidence in the Western world may, like that of bronchogenic carcinoma, be a relatively recent feature. It may be significant in this regard that the incidence of large bowel cancer in the United States has remained fairly constant over the last three or four decades. It may then be expected that with

improvement in the standard of living in the underdeveloped parts of the world, carcinoma of the colon and rectum will occur more frequently.

Faget first attempted to cure carcinoma of the rectum by resection in 1737; and by 1826, Lisfranc had successfully removed such a tumour. Carcinoma of the colon was successfully resected for the first time in 1833 by Reybard. The idea, conceived in the 18th century, was thus put into successful operation in the 19th century. About all the 20th century has contributed in a practical way has been extension of the operation as a result of aids offered by general anaesthesia and improvements in supportive therapy along with some refinements in technique, (20, 23, 35, 73, 75, 109, 115, 120, 121).

Surgery is still the principal form of treatment and the only curative therapy for carcinoma of the large bowel, (70, 75 86, 116) and until the aetiological factors are identified and more specific treatment designed, every effort needs to be made to improve the results of surgical treatment and to facilitate rehabilitation. Epidemiological factors, important though these are, are as yet of little practical value in the control of the disease.

Early diagnosis for a greater proportion of the patients has, for a long time, been recognized as one of the most important

areas of potential overall substantial improvement for survival for patients with intestinal cancer, (5, 10, 14, 15, 29, 32, 52, 72, 78, 105, 108). It is this realization for cancer in general that has led to the evolution of special "Cancer Detection Centres" in the United States of America, (45, 64, 84). However, few countries in the world have the material and manpower resources necessary to establish and run such centres. Most of the world must rely on the general surgical and medical clinics for the recognition of the very early symptoms of intestinal cancer. To this end, public education and increased awareness, on the part of the clinician, of the need for complete evaluation of large bowel symptoms are vital.

The term 'early' needs definition since in addition to the biological sense of recency or newness it may mean many things to different people. Steiner (73) has suggested that early cancer in the clinical sense is merely temporal and means the recent onset of signs and symptoms. In the histologic sense, early may mean pre-invasive; in the anatomic sense, early implies a tumour which is small, freely mobile without evidence of tumour cells circulating in the blood stream; in the therapeutic sense, it denotes a well localized lesion which is capable of complete extirpation and in the prognostic sense, an early tumour is one with a favourable chance of cure.

Thus, earliness cannot be measured in terms of time alone. It must be measured by many perimeters, some of which embrace the broad biologic behaviour of malignancy and metastases. Viewed in this light, the observation that the duration of symptoms does not necessarily correlate with the stage of the tumour, that a long history of symptoms may be associated with better survival rates than a short history of symptoms at the time of diagnosis can be understood (72, 112, 122).

There is no significant controversy at present regarding the surgical management of intestinal cancer. The choice of procedure is determined by such factors as the site of the tumour, presence or absence of obstruction (or perforation), local extension of disease, metastases and the presence of synchronous tumours and adenomata (54, 59, 60, 130). Improvements in pre-operative and post-operative care, aseptic technique, simplified methods of bowel preparation, better general anaesthesia, availability of blood for transfusion and of other surgical adjuvants as well as better control of post-operative sepsis have rendered surgery less hazardous for the patient and more rewarding to both patient and surgeon.

Some controversy still exists as to whether resection or colostomy alone is the preferred treatment for cases that are obviously not curable because of distant metastases or local

fixation. Colostomy alone does little for the patient unless it relieves obstruction, and it seems reasonable to assume that colostomy alone does not usually prolong life.

Resection of the lesion is desirable whenever feasible, even in the presence of metastases, to increase the comfort of the patient (24, 47, 54, 93, 107).

The symptoms of intestinal cancer often simulate those of infective intestinal pathology. The former is rare, the latter common in Kenya. When this work was undertaken, therefore, it was predicted that when cancer of the large bowel does occur, there is an undue delay in diagnosis. It was set up to find out whether in fact, such a delay occurs and, if so, to examine the factors that contribute to it with a view to suggesting means by which the delay could be reduced. During the study, it became increasingly clear that it would be useful to examine the attitude of our patients to a permanent colostomy; and consider any special problems that need to be overcome by patients with colostomies in this community.

CHAPTER II
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T H E C L I N I C A L P I C T U R E

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CLINICAL MATERIAL

During the month of November, 1970, 4 patients with carcinoma of the colon were admitted to a small general surgical unit at the Kenyatta National Hospital, Nairobi. They were all admitted within two weeks of one another for a disease which is generally accepted to be rare in this region, this was striking. It was then that the opportunity was taken to initiate this study. The object was to record, in detail, the signs and symptoms of carcinoma of the colon and rectum as seen at the hospital.

The study includes all the patients with histologically proved carcinoma of the colon and rectum treated at the Kenyatta National Hospital (K.N.H.) over a five year period, January, 1969 through December, 1973. There were 49: 19 restrospective and 30 prospective. Records in the General Surgical Units and the Records Department of the Kenyatta National Hospital, and those of the Cancer Registry Department of Pathology, University of Nairobi Medical School, for the relevant period have been studied, Table (i) below.

The signs and symptoms in patients studied prospctively were similar to those in the retrospective group. The two groups have, therefore, been combined.

TABLE (i):PROVEN CARCINOMA OF THE LARGE BOWEL AT K.N.H.

YEAR	COLON	RECTUM	TOTAL
1969	2	2	4
1970	9	6	15
1971	7	5	12
1972	2	4	6
1973	9	3	12
TOTAL	<u>29</u>	<u>20</u>	<u>49</u>

AGE AND SEX:

There were 31 men and 18 women. The site of tumour in relation to sex is shown in table (ii) and the age distribution in fig. (i).

The youngest was a 16 year old school boy, the oldest a 75 year old peasant. The mean age was about 46 years. This is about 20 years lower than the mean age reported from Western Europe and North America. The maximum incidence occurred in the sixth decade; 10 years earlier than is reported from high risk regions of the world. This shift of the incidence of intestinal cancer to the left in low risk countries has been previously observed by others. Its significance is not clear. It is, at least in part, due to the relatively younger population one is dealing with.

THE DURATION OF SYMPTOMS

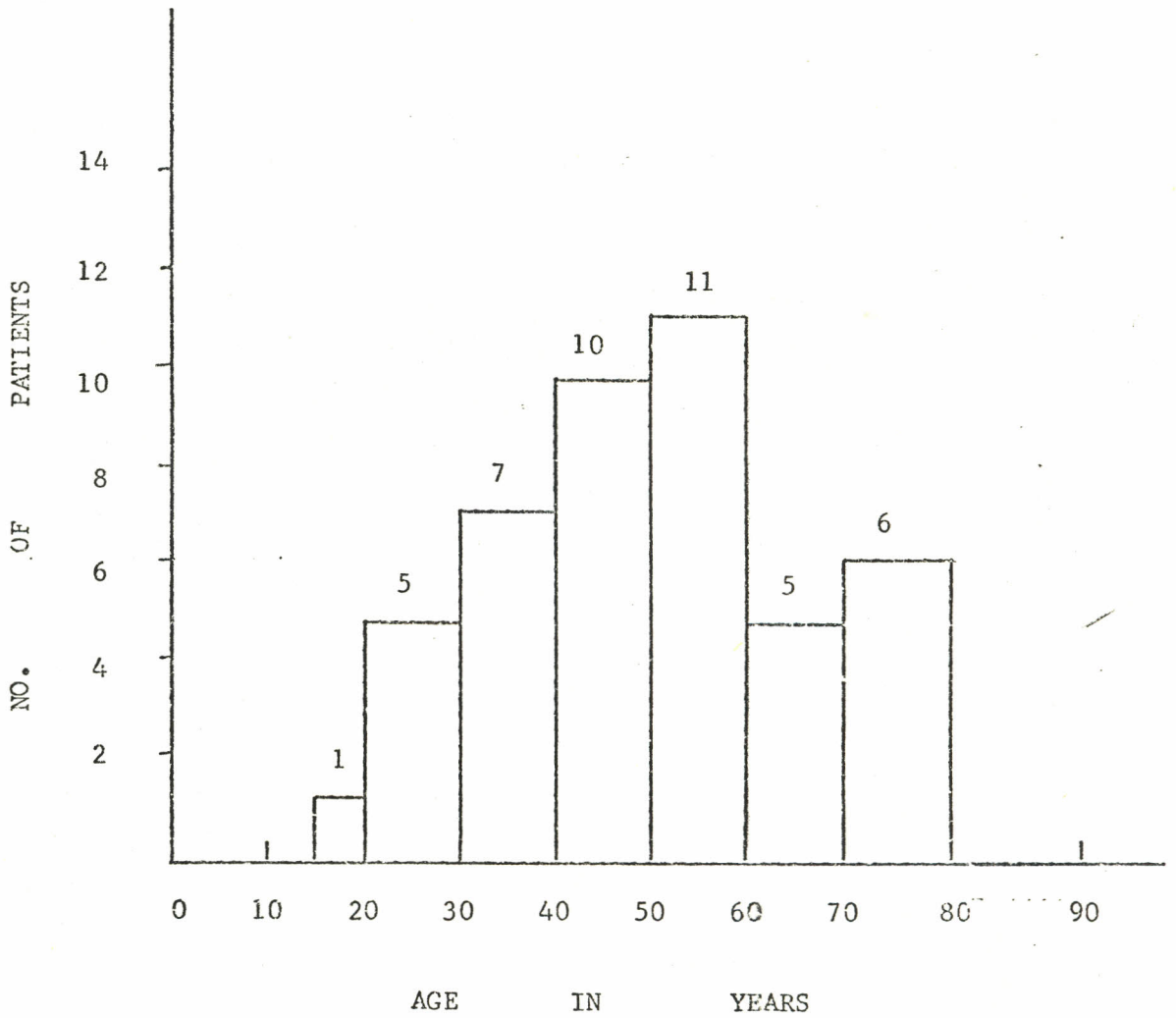
Figure (ii) summarizes the period from the onset of symptoms to the time of diagnosis. This varied from a few days to four years. The average was about 12 months. Carcinoma of the rectum tended to be diagnosed slightly earlier (average 10 months); possibly because of the insistence of patients with frank rectal bleeding. One patient presented with one day's

TABLE (ii):

SITE OF TUMOUR IN RELATION TO SEX

	COLON	RECTUM	TOTAL
MEN	20	11	31
WOMEN	9	9	18
TOTAL	29	20	49

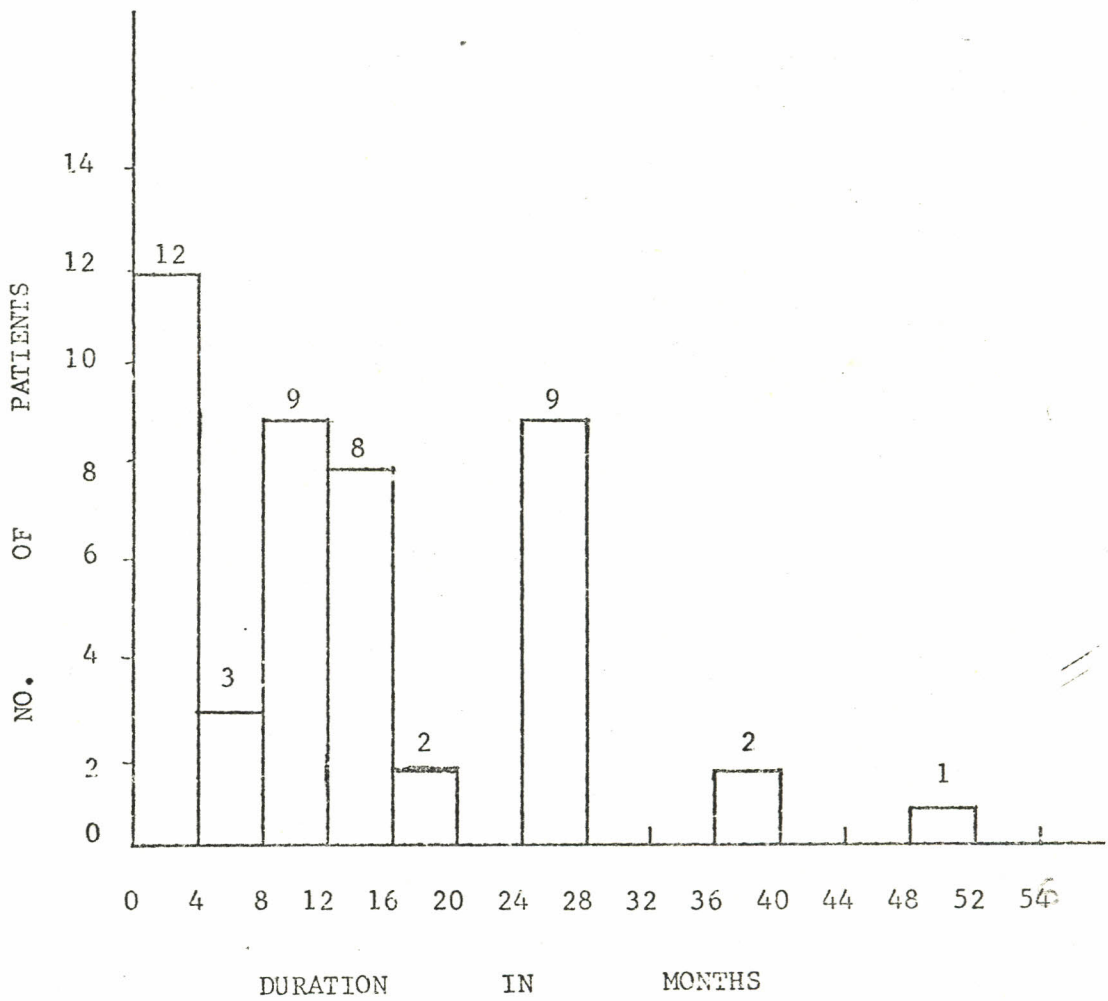
FIG. (i):

AGE DISTRIBUTION

The age Distribution of 45 patients

The age of 4 of the patients in the study was not given

FIG. (ii):

THE DURATION OF SYMPTOMS

The Duration of symptoms in 46 patients with cancer of colon and rectum. It was not given in 3 cases.

history of colicky abdominal pain, having been previously "well" and another had been treated for haemorrhoids for two years before the diagnosis was made. By this time, he was incontinent of faeces and had a fixed rectal mass (Duke's stage C₁).

THE SYMPTOMS:

These are summarized in table (iii) below.

Abdominal pain or discomfort, diarrhoea or constipation and blood in the stool were the most frequent symptoms. They were complained of, either individually or in combination, by more than 75 per cent of the patients.

ABDOMINAL PAIN:

Was present in 28 (56 per cent) of the patients. In right sided cancer, pain was usually, but not always postprandial. Often, however, it was a dull ache, always present and not necessarily localized to the site of the tumour.

It was a presenting symptom in 8 (40 per cent) of those with rectal cancer; three of these had liver metastases and two had inguinal node involvement. The pain was colicky in nature only in those who presented with acute intestinal obstruction.

TABLE (iii):

THE SYMPTOMS ACCORDING TO SITE OF TUMOUR

SYMPTOMS	TRANS. COLON (5 CASES)	RIGHT COLON (13 CASES)	LEFT COLON (11 CASES)	RECTUM (20 CASES)	TOTAL	
					NO.	%
Abdominal pain	4	8	8	8	28	56
Tenesmus	-	-	-	1	1	2
Pruritis Ani	-	-	-	3	3	6
Abd. Mass	-	5	3	1	9	18
Ano. Rectal Mass	-	-	-	2	2	4
Dysuria	-	-	1	2	3	6
Diarrhoea	1	2	3	9	15	30
Blood	1	1	5	14	21	42
Mucus	-	-	-	1	1	2
Constipation	1	6	5	5	17	34
Weight Loss	1	1	1	1	4	8
Anorexia	1	-	1	1	3	6
Vomiting	1	3	-	2	6	12
Fatigue	-	-	-	1	1	2
Backache	-	-	-	1	1	2
None	-	1	-	-	1	2

DIARRHOEA:

Was the main complaint in 15 (30 per cent) of the patients. 9 of these had rectal cancer. All admitted to having had blood in their stool at one time or another; indeed, 14 of them had been treated for 'dysentery' at either a health centre or peripheral hospital within six months of the diagnosis being made.

OTHER SYMPTOMS:

Constipation occurred in 17 (34 per cent) of the patients, those with tumour in the left colon were affected more often than the others. Usually, however, it was not a presenting symptom. Only four patients complained of having lost weight even though at the initial clinical examination, 18 (36 per cent) were noted to be wasted: Our patients rarely weigh themselves and do not, therefore, notice minor weight losses. Only one patient complained of fatigue.

PHYSICAL FINDINGS:

These are summarized in table (iv).

21 (42 per cent) had a palpable abdominal mass. 12 of these had themselves noticed the mass. It was the primary tumour in 19 of the patients, in the other two, it represented secondaries in the liver from rectal cancer. These two patients had ascitis.

TABLE (iv):

THE CLINICAL FINDINGS ACCORDING TO SITE OF TUMOUR

S I G N S	TRANS. COLON (5 CASES)	RIGHT COLON (13 CASES)	LEFT COLON (11 CASES)	RECTUM (20 CASES)	TOTAL	
					NO.	%
Wasting	2	5	2	9	18	36
Abd. Mass	2	8	7	4	21	42
Rectal Mass/Ulcer	-	-	1	13	14	28
Abd. Distension	-	-	-	2	2	4
Blood/Rectum	-	1	2	13	16	32
Acute Int. Obst.	1	-	4	2	7	14
Anaemia	1	4	2	8	15	30
Inguinal Glands	-	-	-	2	2	4
None	-	1	-	-	1	2

RECTAL MASS/ULCER:

13(65 per cent) of those with rectal tumours were found to have an ulcerated mass on rectal examination. 2 of these complained of the mass and one had had treatment for a bleeding rectal mass (thought to be haemorrhoids) for two years. In one patient with carcinoma of the lower sigmoid colon, a mass was palpable on digital examination.

ANAEMIA:

15(30 per cent) were noted to be anaemia at the initial clinical examination. They all had a haemoglobin of less than 10 G per cent. Three of these, two with advanced rectal cancer and one with carcinoma of the caecum, had a haemoglobin of 4.0., 5.5 and 6.0, grams per cent respectively.

IMPORTANT DIAGNOSTIC PROCEDURES:

The diagnostic procedures yielding a definite diagnosis in this series are shown in table (v).

The most important procedure in the diagnosis of large bowel cancer is abdominal palpation and digital rectal examination (Table iv). A clinical diagnosis was thus made in 35 (70 per cent) of the patients.

The tumour was visualized in a further six cases at proctosigmoidoscopy. In one patient, the diagnosis of early carcinoma of the caecum was made during a routine inspection at laporatomy for a co-existing chornic duodenal ulcer.

TABLE (v):

THE INVESTIGATIVE PROCEDURES YIELDING
A DEFINITIVE DIAGNOSIS

PROCEDURE	NUMBER OF PATIENTS		
	DONE	POSTIVE	% POSITIVE
Rectal Digital Exam.	48	11	22
Proctosigmoidoscopy	30	12	40
Barium Enema	27	17	60
Exploratory Laparatomy	8	8	100
Incidental Finding		1	
	Total	49	

NB. In 7 of the 27 patients who where investigated with barium enema the diagnosis had already been made. The investigation was done to exclude synchronous tumours.

FIG. (iii) & (iv):

THE SITE OF TUMOUR

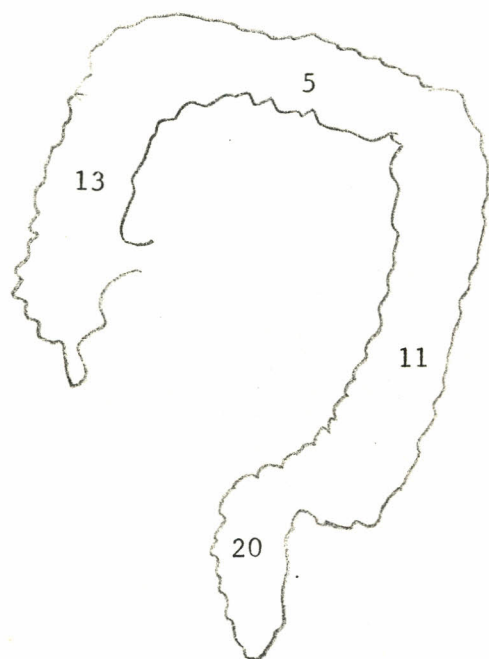


FIG. (iii)

The site of Tumours in patients reported here.

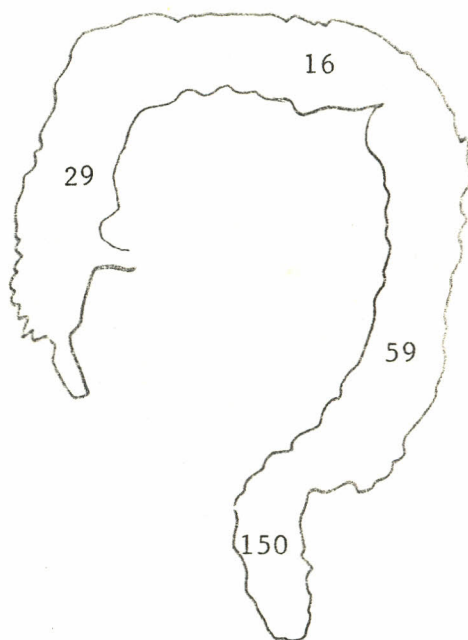


FIG. (iv)

The site of Tumours in 254 patients reported by Keddie et al. (Manchester, 1968).

A barium enema gave the most specific diagnosis. This investigation was non-specific in three cases who at exploratory laparotomy, had early carcinoma of the right colon.

SITE INCIDENCE:

This is shown in Fig. (iii) and Fig. (iv)

The majority of large bowel tumours occur in the left colon and rectum (Keddie et al. 1968. Floyd et al. 1966; Glenn et al. 1966; McSherry et al. 1969). This is borne out in this study, Fig. (iii).

MISTAKEN DIAGNOSIS AND ASSOCIATED DISEASES:

The diagnosis was delayed in 14 (28 per cent) of the patients because they were thought to be suffering from infective diarrhoea. One patient was investigated for aplastic anaemia ("other causes of anaemia having been excluded") for six months at another hospital before a stool occult blood test finally suggested cancer. Another patient was treated for bacillary dysentery, amoebic dysentery and malaria before a digital rectal examination was done. The patient with a four-year history of rectal bleeding would probably have been saved if a rectal examination had been done before treatment for haemorrhoids was instituted. One patient had co-existing duodenal ulcer. This last was the only patient with a proven second pathology.

CHAPTER III

T R E A T M E N T

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SURGICAL TREATMENT

The operative procedures used, correlated with the average duration of symptoms in each of the two groups are shown in table (vi).

The 7 patients who presented with acute intestinal obstruction are not included in the calculation for average duration of symptoms in table (vi): During the study, it became clear that the relatively short histories of illness obtained from these patients and their relatives were inaccurate. The reasons for this are discussed on page 27 (b).

19 (38.8 per cent) were considered curable and had a curative resection of tumour. 14 (28.6 per cent) accepted some form of palliative operation; one would not accept a colostomy, he was treated with repeated enemata. Of the 14 patients in this group, 5 had a colostomy only. A permanent colostomy was only advised when the tumour was not resectable, there was obstruction and a by-pass procedure with re-establishment of bowel continuity impossible. 15 (30.6 per cent) of the patients had advanced tumour but without obstruction. They received no treatment.

HOSPITAL MORTALITY

One patient died 6 days following a curative resection of tumour. She was making good post operative progress and was talking to her husband when she suddenly collapsed and died. A postmortem examination was not done but it was presumed that she had died from a massive pulmonary embolus. Another patient with advanced cancer of caecum died within 48 hours after a palliative resection. Two of those with advanced rectal cancer were moribund and died within 48 hours of hospitalization.

TABLE (vi):

TREATMENT CORRELATED WITH THE DURATION OF SYMPTOMS

OPERATIVE PROCEDURE	NUMBER OF PATIENTS	AVERAGE DURATION OF SYMPTOMS IN MONTHS
<u>1. CURATIVE</u>	19(38.8%)	15.5
a) Abd. Perineal Excision of rectum	5	
b) Rt. Hemicolectomy	5	
c) Excision of Tumour with Colocolic anastomosis	9	
<u>2. PALLIATIVE</u>	14	16.9
a) Colostomy only	5	
b) Ileo-Transverse Anastomosis	5	
c) Excision with Ileo-Transverse or Colo-colic anastomosis	4	
3(a) Nil (Biopsy only)	15	
(b) Refused colostomy	1	
TOTAL	49	16.2

OPERABILITY AND DELAY IN DIAGNOSIS:

When operability is correlated with the duration of symptoms, table (vi), two fascinating observations are apparent:

- (a) The duration of symptoms does not, as one would expect, necessarily relate to the stage of the tumour at the time of diagnosis. The average delay in diagnosis for operable and inoperable tumours was 15.5 and 16.9 months respectively. This is in agreement with the findings of others (Keddie, 1968; Donald et al. 1967). The operability of a tumour depends not only on the duration of symptoms but also, perhaps more significantly, on the intrinsic biologic characteristics of the individual tumour. A tumour may present 'early' because it is rapidly growing and may therefore be inoperable at the time of diagnosis. Another tumour, with similar histological characteristics may be so slow growing that it is resectable in spite of a long history of symptoms.
- (b) Patients presenting with acute intestinal obstruction gave the shortest history (average 4.4. months) yet most had advanced disease; only two of the seven (28.6 per cent) had resectable tumours (38.8 per cent for the whole series). One had had symptoms for one day, a second had been ill for two weeks, two for one month, one for two months and another two for 18 and 24 months respectively.

This suggests either one or both of two considerations:-

- (i) The patients and their relatives, faced with the dramatic episode of acute intestinal obstruction, ignore past ill health. Such a history could have been deliberately concealed from the clinician: Patients tend to fear that a long history of ill-health may prejudice the treatment; that it may prompt inquiry as to why treatment was not sought earlier. That the patient may have been to various hospitals for abdominal symptoms may also be concealed for fear either that a referral letter may be asked for or that the clinician may frown on the fact that a peripheral hospital has been by-passed.

- (ii) The clinician may have not had time, after dealing with the emergency, to check on the past medical history.

Both these factors appear to have affected our series to a considerable extent: Two of the patients who gave a history of two weeks and one month respectively were noted to be wasted at the initial clinical examination. The patient who presented with a one day's history of recurrent episodes of vomiting, colicky abdominal pain and constipation, when interviewed by the author after full recovery from a curative operation admitted to progressive loss of stamina, recurrent episodes of abdominal pain and loss of appetite for about one year.

It appears, then, that the duration of symptoms in patients with intestinal cancer who presented with acute obstruction in this series is highly inaccurate. The seven patients with this presentation have, therefore, been excluded from the calculation for average duration of symptoms for resectable and non-resectable tumours, table (vi). Others (Keddie, 1968; Floyd et al. 1965) have noted that patients presenting with obstruction partial or complete, often have advanced disease with poor 5 -year survival rates.

ACCEPTABILITY OF A PERMANENT COLOSTOMY

Ten of our patients were offered and accepted a permanent colostomy. Five of these following a curative abdomino-perineal excision of the rectum and five had advanced rectal cancer with obstruction. It took 4 weeks of consultation with relatives before the first patient would accept the procedure. Patients tended to accept this operation more readily after talking to another patient who had had it. One patient, however, would not accept the idea of an artificial anus in spite of prolonged exposure to another patient with a colostomy.

Patients with colostomies stayed on the wards for an average time of two weeks longer than the others after surgery. It took just that longer for them not only to learn how to manage the colostomy but, more important, to gain confidence in their changed life.

Psychosocial problems of adjustment and rehabilitation apart, it was essential, yet often difficult, to guarantee that the patient will be able to obtain the necessary appliances - in terms of availability and cost - when he returned to his village. For those who live in and around urban areas, the problem is largely one of cost; these are nevertheless much better off than those from far and away in rural areas. For these, toilet facilities are poor and the appliances may not be available. Whenever possible, our patients were supplied with colostomy bags free. They were encouraged to attend the surgical out patient clinics often.

CHAPTER IV
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DISCUSSION

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D I S C U S S I O N

In Western Europe and North America, carcinoma of the bronchus and carcinoma of large bowel compete for first place as the cause of the largest number of cancer-caused deaths (Mc Swain, et al, 1965; Floyd, et al, 1966; Gilbertsen, et al, 1967; Donald, et al, 1967). Unlike cancer of the bronchus, cancer of the large bowel is equally important as a cause of death in both men and women (Gilbertsen, et al, 1967). In such parts of the world, the symptoms of carcinoma of the large bowel are readily recognized and it may be expected that the diagnosis will be made early. This is particularly so since, in addition to a high index of suspicion on the part of the clinician, lay education is good and the doctor/patient ratio high.

In the underdeveloped countries of the world, the tumour is uncommon, lay education scanty and the doctor/patient ratio low. Here, the tumour, even though its symptoms are generally regarded as well known, may often be lost in the load of infective intestinal pathology. Infective intestinal disease is very common in these areas. It is predictable, therefore, that there will be a longer delay in the diagnosis of this tumour than is reported from the developed parts of the world. The curability of cancer is not necessarily directly related to the duration of symptoms at the time of diagnosis. Even so, it has been frequently demonstrated that the earlier a diagnosis is made and treatment given the better the 5-year and 10-year survival rates for tumours of the large bowel.

Change in bowel habits, rectal bleeding and weight loss are the cardinal complaints of patients with cancer of the large bowel, (Keddie, et al. 1968; McSherry, et al. 1969). This study suggests that abdominal pain should always be added to these, if only as a reminder in areas where this symptom is so common in busy out patient departments that it is often ignored. The presence of amoebae or schistosoma ova in the stool should not be allowed to mask intestinal cancer. Change in bowel habit is often referred to merely as diarrhoea and it is only on specific enquiry that episodes of constipation are elicited. The Classical symptom of morning diarrhoea was not present in this series. It is not common.

The average duration of symptoms from the time of onset to the time of diagnosis was 12 months; if one excluded the seven patients who presented with acute intestinal obstruction, this delay goes up to 16 months. This is three times the average delay in North America (McSherry, et al. 1969; Gilbertsen, 1971). McSwain, Sadler and Main, (1962) reviewing carcinoma of the large bowel and anus at the Vanderbilt University Hospital between 1925 and 1960 report a definite decrease in the time from the onset of symptoms until the definitive treatment, "the delay having dropped from nearly 11.5 months in the early period to less than 5.5 months in the later years". This they ascribe to improvement in lay education and in the physician's awareness of the need for complete evaluation of symptoms suggestive of large bowel disease.

Franklin, et al(1970) in a study of patients at the same hospital between 1961-1968 reported a delay of 5.5. months and find that "in the period 1925-1968, the resectability rate improved from 50 per cent in the earlier period to 94.2 per cent in the later period". I can see no explanation for the long delay in our cases other than a low index of suspicion on the part of the clinician and perhaps poor general education. The resectability rate in this series was 38.8 per cent.

It seems reasonable to conclude that the much lower operability rate in the patients treated at the Kenyatta National Hospital is, to a significant extent, due to the longer delay in diagnosis. It will be interesting to see what the picture will be like in twenty or thirty years: Given than both the doctor/patient ratio and lay education will continue to improve, the delay in diagnosis must decrease. The outlook for these patients should thereby improve.

When the cause of a disease is known (or its aetiological associations clearly understood) efforts to control it are mainly directed at prevention. In a retrospective study of 791 patients with colorectal cancer and a review of the literature, Wynder, et al, (1971) conclude that dietary factors are important in the causation of intestinal cancer. Burkitt (1971) and Haeszel, et al, (1971) arrive at the same conclusion on epidemiological grounds. We looked into the dietary habits of our patients, especially with regard to the animal protein content of their diet. It is difficult

to be accurate about this in a rapidly changing population with a high rate of rural-urban movement. However, those patients with colorectal cancer were no different from the general hospital population with regard to their food habits.

Nevertheless, if diet has indeed, a cause-effect relationship with large bowel cancer, the specific dietary factors involved and the part they play in the evolution of the disease are not yet known. So that epidemiological observations, though important, are as yet of little practical value in the control of the disease.

While efforts to discover the cause of large bowel malignancy continue, clinical studies aim at improving the prognosis of the victims of this disease. Early diagnosis has repeatedly been shown to be the most important factor in this respect. Hertz, et al, (1960) found that of patients with colorectal cancer who had no symptoms, 88 per cent survived 5 years. When symptoms had been present for 3 months, only 44 per cent survived, and when symptoms were present for 7 months, only 25 per cent were alive at 5 years. Thus, even though it has been observed that the duration of symptoms does not necessarily relate to the stage of the tumour at the time of diagnosis for the individual patient, for the majority of patients early diagnosis means a favourable outlook.

Early diagnosis is possible if both the public and clinicians are alive to the early symptoms of the disease and if symptoms of intestinal disease are adequately investigated.

In a majority of cases, the diagnosis can be made by simple investigative procedures: In 70 per cent of our cases, cancer was suspected on abdominal palpation and rectal examination alone.

A majority of colorectal cancers occur at or distal to the sigmoid colon. But the ordinary 30 -cm sigmoidoscope is of value only in tumours situated in the rectum and distal sigmoid. With the now available fiberoptic colonoscope, it is possible to inspect the entire large bowel in a majority of patients. This investigation is safe. Its routine use in all patients with chronic large bowel symptoms is worthwhile.

The occult blood test was done in only one case in this series. Greegor (1971) reporting on the results of this investigation on 12 patients with silent colon cancer states that with only one exception, "all had at least one of three stool specimen which was guaiac positive." In an area with a high incidence of infective intestinal pathology (bacillary and amoebic dysentery, hook worm and schistosoma infection), the occult blood test will be frequently positive. Nevertheless, the test should be done more frequently: It is simple and quick to do, and infective disease also needs to be treated.

A barium enema was diagnostic in 17 of 27 patients. It was non-specific in 3 patients. This examination is mandatory in all cases of chronic large bowel disease:

1. It provides the most specific diagnosis.

2. In the evaluation of large bowel symptoms where clinical and sigmoidoscopic examinations are negative.
3. When a diagnosis of large bowel carcinoma is certain, a barium enema is essential to diagnose or exclude synchronous tumours.

An early tumour will not be palpable and may not be visualized on a conventional barium enema radiograph (Donald et al, 1967). Therefore, reliance on a negative barium enema may induce a false sense of security in the clinician and cause delay in treatment. Where symptoms persist, this investigation should be repeated at regular intervals. An exploratory laparotomy should be done where an enema is not specific.

The difficulties of cleansing the large bowel have made clinicians pay less attention to exfoliative cytology for diagnosis of large bowel cancer than the investigation probably deserves. Raskin, et al, (1971), lamenting "Fifteen years of lost opportunity", report that when distinguishing between malignant and non-malignant appearing radiologic lesions, a good exfoliative cytology technique maintains an 80-85 per cent diagnostic cancer accuracy rate. Given patience and a good technique, the large bowel can be adequately cleansed for a good smear to be obtained from the right colon. When a positive occult blood test cannot be explained in a patient whose barium enema is negative, exfoliative cytology is worth considering.

Suspicion is the most important tool in early cancer detection. Digital rectal examination, proctosigmoidoscopy as well as stool guaiac test for occult blood should be done more frequently in our out patient departments. This in addition to a high index of suspicion, will lead to earlier diagnosis of this disease which, detected in time, is potentially curable.

Eleven patients in this study were offered a permanent colostomy. It is a basic philosophy in palliative treatment for chronic disease "that the maintainance and longevity of life is important only if it has an acceptable quality to the patient" (Shapiro and Schwalbach, 1971). Only then can comprehensive care be realised.

Like with any other amputation procedure, excision of the rectum and the establishment of a permanent colostomy creates immediate psychosocial and physical rehabilitation problems. In male patients, impaired bladder and sexual function may also ensure. Rehabilitation needs, therefore, to start immediately after surgery.

Our patients were prepared as follows before the operation: The surgen himself explained the procedure and its consequences to the patient; when possible, a patient previously operated on was brought to the ward for discussion with the new patient. Each patient had ample opportunity to discuss the problem with his relatives and was encouraged to do this.

After surgery, the patients were left on the ward for as long as was judged necessary to get them adjusted to their new life. The problems of how and where to obtain colostomy appliances were discussed. Where necessary, these appliances were supplied free of charge to the patients.

In the absence of enterostomal therapists (and I cannot see their availability in this country for a long time to come) one can only echo Prudden's (100) words: "There is no area of Surgery which calls for greater patience and compassion on the part of the surgeon. But this is as much a part of the treatment as is the technique of colostomy itself. Therefore, if one is not prepared to give of himself to this degree, he ought to refrain from the performance of the colostomy itself".

In a largely poor, unsophisticated rural population far removed from urban centres - and therefore from colostomy appliances and sound toilet facilities - such as obtains in East Africa, it is inadvisable to offer a permanent colostomy to a patient unless it confers definite advantages: i.e. following a curative resection of the rectum; or as a palliative measure, to relieve obstruction; for "what is a man profited if you save his life from cancer and he loses his ability to live - if he loses his ability to make a livelihood if he loses his social acceptability," (Letton, 1971).

CHAPTER V:

C O N C L U S I O N

COLORECTAL CANCER AND THE REHABILITATION OF PATIENTS WITH
COLOSTOMY

That only 49 patients with large bowel cancer were treated at the Kenyatta National Hospital in five years supports the view that this rumour is uncommon in this region. When it does occur, however:

- 1 (a) There is often a long delay in the diagnosis. This is related not only to delay in seeking treatment but, perhaps more significantly, to a low index of suspicion on the part of clinicians

- (b) The outlook of patients with colorectal cancer in the setting of the Kenyatta National Hospital is poor: By the time the diagnosis is made, the tumour is often not resectable.

It is expected that with improving public education and doctor/patient ratio, the diagnosis will be made "earlier" and the prognosis will improve. This will be helped if medical schools in this region urge their students always to remember that even RARE DISEASES DO OCCUR.

2. The majority of large bowel tumours can be diagnosed by a good clinical examination supplemented by simple outpatient investigative procedures.

3. Patients in Kenya will readily accept a permanent colostomy provided:-

- (i) The need for the procedure is clearly and kindly, but firmly, explained to them - preferably by the surgeon himself or his senior assistant.
- (ii) That they are given ample time and are encouraged to discuss the matter with their family.
- (iii) The question of availability and cost of colostomy appliances is adequately discussed.

4. All the colostomy patients in this study need constant and continuing encouragement to overcome both the physical handicap and the psychosocial problems which arise from living with an enterostomy. Many cannot afford the necessary appliances.

Perhaps it is time an organisation, preferably a voluntary one, got interested in enterostomy patients in this community. Such an organisation could either be formed by patients themselves or by the more enlightened members of the community. The former is unlikely to get off the ground because of the great distances involved and the poor general education. The latter, probably on the lines of the "League of Friends" of the Kenyatta National Hospital, is immediately feasible.

For the moment, it would do for only a small committee of such an organisation as the "League of Friends" to take special interest in this direction.

True, there are not many patients with enterostomies here yet. But if the experience elsewhere, and the conclusions so far drawn from the epidemiology of large bowel disease in general and colorectal cancer in particular, are anything to go by, the number of such patients will increase.

DEFINITIONS

The division of the large bowel, an organ with remarkable anatomical and physiological continuity, into different parts can only be arbitrary. Because of this, certain terms may be used by different people to mean different things. Some definitions are therefore necessary:-

1. COLON: The part of the large bowel situated above the sacral promontory (3rd piece of scrum).
2. RIGHT COLON: Appendix, caecum. Ascending colon and hepatic flexure.
3. CAECUM: That portion of the colon situated below the ileo-colic valve.
4. MIDDLE COLON: The transverse colon and splenic flexure.
5. LEFT COLON: The descending colon and sigmoid.
6. RECTUM: That part of the large bowel situated between the promontory and the pectinate line.

7. SYNCHRONOUS
TUMOURS:-----
Those found at the same time in the same patient.
8. METACHRONOUS
TUMOURS:-----
Found at different times in one patient.
9. OPERATION FOR
CURE:-----
(Curative Resection) - An Operation where all cancer tissue was removed according to the surgeon's opinion and where the pathological - anatomical diagnosis did not contradict this.
10. THE LEAGUE OF
FRIENDS:-----
A voluntary organisation based at the Kenyatta National Hospital whose main activity is to assist patients in Kenya with their physical and social rehabilitation needs.
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