Causes of delayed diagnosis in patients with colorectal cancer (A Prospective study)

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Summary

Back ground: *Colorectal cancer is one of the leading causes of death allover the world especially in the developed countries. Each year approximately one million veterans aged 50 and older will develop colorectal cancer over the remainder of their lives and nearly 433,000 will die from it. Because most cancers are diagnosed after local or regional spread, nearly half of all patients diagnosed with colorectal cancer will die lWarly detection and management definitely decrease mortality.*

Patient and methods: *This is a prospective study on fifty patients with colorectal cancer admitted at the first surgical unit in Baghdad teaching hospital since March 2000 till March 2003 The data collected from those fifty patients were analyzed according to the history, physical examination and investigations with special consideration to the mode of presentation , type of investigations and the cause of delay in diagnosis,*

Results: *The most valuable investigation was colonoscopy and biopsy Abdominal ultrasound was very helpful tool in diagnosis of right sided colonic tumors.Also barium enema has a good role in diagnosis of patients with colorectal cancer.*

Conclusion: *We concluded that most delay in diagnosis of patients with colorectal cancer was patient related (fifty percent of cases).A significant delay was related to the patients and general practitioner In a few cases the delay was related to the patients and consultant surgeon and a single case related to the general practitioner only.*

Introduction:

Colorectal cancer has a world wide distribution ,with the highest incidence rate in the United State, Canada Australia New Zealand Denmark, Sweeden and other developed countries (1,2).It's incidence substantially lower up to 30 folds in India, South America, and Africa, The incidence in Japan which formerly was very low, has now rises to the intermediate level observed in the United Kingdom (Crawford and Kumer, , 2003).[1,3]

In Iraq and according to the latest Iraqi cancer registry reports, the colonic malignancies represented about 4.7% of all malignant primary tumors registered during the period from 1995-1997(2.2% in females and 2.5% in males) while rectal malignancies represented about 3.4%(1.5% in females and 1.9% in males).The crude incidence rate in Iraq for colonic malignancies in 1997 was 1.03/100 000 of population and that of the rectal malignancies was 0.86/100 000 of population In addition the annual number of new cases of colorectal cancer in 1997 was 354(193 in the colon and 161 in the rectum).(Iraqi cancer board 1999))[4]

The main guidelines for urgent referral of patients with suspected colorectal cancer based on symptoms presented. The combinations of symptoms and signs when occurring for the first time should be used to identify patients for urgent referral for all ages- (5) Definite palpable right sided abdominal mass, Definite palpable rectal (not pelvic) mass, Rectal bleeding with change in bowel habit, Iron deficiency anemia less than 10 gm/dl in postmenopausal female without obvious cause, Rectal bleeding without anal symptoms, and change in bowel habit to more frequent defecation or looser stool or both

The early diagnoses of colorectal cancer lead to the treatment of the disease at earlier stage, improving the overall five years survival rate. There are many areas of potential delay in the diagnosis of colorectal cancer, namely delay in presentation to general practitioner physician, delay in diagnosis and referral to consultant surgeon or hospital delay. Recent guidelines from the association of coloproctologists of Great Britain and Ireland in conjunction with the Royal College of surgeons of England, have stated that the time to diagnose from the first presentation should be as short as possible. (3,4) the aim of this study is to identify whether the delay in diagnosis of patients with colorectal cancer in iraq is related to patients, general practitioner or first consultant surgeon, and to verify the role of full history, clinical examination and investigations which can clench early diagnosis.

Patients and methods:

A prospective study was conducted on fifty patients of different age groups, gender and related

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to many surgeons. All patients were managed at Baghdad teaching hospital throughout the period from March 2000 to March 2003.

After taking a complete history and conducting full physical examination the patients were subjected to different types of investigations either to confirm the diagnosis of colorectal cancer in those who had few investigations done prior to their admission to Baghdad teaching hospital or to establish a diagnosis in patients with no investigations done at all. The investigations used included colonoscopy, Barium enema , abdominal ultrasound , CT- scan, MRI , plain abdominal x-ray (erect and supine position)and diagnostic laparoscopy. Twenty nine patients had been subjected to colonoscopy in the endoscopy unit of Baghdad teaching hospital. The patients were prepared by multiple plain water enemas and examined by Olympus colonoscopy (CE 0197 type 40m1 2800249 length140-160 cm) under the effect of 10mg diazepam and hyoscine bromide intravenously.

Two patients presented as emergency cases and colonoscopy was not done for them because it was not available at the time of their admission. Nineteen cases refused doing colonoscopy either because they were shy or afraid from the procedure.

Thirty four patients had abdominal ultrasound done either at Baghdad teaching hospital or in private clinics to identify the primary or metastatic lesion within the abdomen.

Barium enema was done for seven patients. Five patients were examined by CT-Scan and two were examined by MRI. Plain abdominal x-ray was done for twelve patients and only a single patient had to undergo diagnostic laparoscopy.

Two patients presented as intestinal obstruction in the emergency unit, were diagnosed by x-ray and confirmed by emergency laparotomy. Carcino embryonic antigen estimation was not done as a routine Complete biochemical and hematological investigations were done for all patients.

The cancer originated from different parts of the colon. In eighteen cases the site of origin was the sigmoid colon. The rectum was the site of the origin in fourteen cases. Eleven cases showed origin from the ascending colon and four cases from the caecum while two cases originated from the splenic flexure and only a single case showed origin from the transverse colon.

Results:

The mean age of patients was 53.3 years (ranged from twenty nine years to eighty years) with a male to female ratio of 1.8/1.

Two patients had a positive family history of colorectal cancer ; one with a cancer of the sigmoid colon and the other with a cancer of the ascending colon.

The most common symptom was abdominal pain which was present in 38 patients (76%)followed by weight loss in 35 patients (70%) (table 1) . anorexia, change of bowel habits, lower gastrointestinal bleeding and other symptoms were present butto a lesser extent

Table(1 :-The clinical presentation of patients with colorectal cancer

(Signs and symptoms)	Number of Cases	percent
Abdominal pain	38	76%
Weight loss	35	70%
Anorexia	29	58%
Change in bowel habits	24	48%
Lower GIT bleeding	20	40%
Vomiting	10	20%
Constipation	7	14%
Anemia	2	4%
Diarrhea	2	4%
Abdominal distension	1	2%

Table (2) :-The incidence of combined presentation of abdominal pain, lower GIT bleeding and change in bowel habits.

Main clinical presentation	No. of causes	percent
Lower GIT bleeding & abdominal pain	20	40%
Change in bowel habits &Abdominal pain	24	48%
Lower GITbleeding & change in bowel habits 7 abdominal pain	6	12%

Table (2) shows that the most common clinical presentation is the change in bowel habits and abdominal pain which was present in twenty four patients followed by the combination of lower GIT bleeding and abdominal pain which were present in twenty patients .

Six patients only presented with a combination of all three symptoms (abdominal pain, lower GIT bleeding and change in bowel habits)

Table (3):-The duration from the onset of symptoms till first medical consultation according to the art of colon i volved with cancer.

Part of colon with cancer	Mean duration (days)
Caecum	228
Ascending colon	47.6
Transverse colon	30
Splenic flexure	183
Sigmoid colon	65.9
Rectum	124.3

Table (3) showed ;The average duration between the onset of symptoms till first medical consultation was the least in tumors of transverse colon and ascending colon , (30 days) and (47.6 days) respectively , followed by pathology in the sigmoid colon,(65.9 days) . Cancer of caecum, splenic flexure and rectum were very lately presented . The average duration from the onset of symptoms till first medical consultation was (83.9 days) for colonic tumors and (124.3 days) for rectal tumors

Table 4):-The duration from the onset of symptoms till diagnosis according to the part of colon involved with cancer.

Part of colon with cancer	Mean of duration (days)
Caecum	265
Ascending colon	67.7
Transverse colon	210
Splenic flexure	192.5
Sigmoid colon	128.2
Rectum	229.3

Table (4) showed ;The average duration between onset of symptoms till diagnosis was the least in tumors of the ascending colon (67.7 days) .
While the longest duration was related to tumors of the caecum, rectum and transverse colon ;it was (265 days) , (229.3 days) and (210 days) respectively.
Other parts as the splenic flexure and sigmoid colon were diagnosed in an average of (192.5 days) and (128.2 days) respectively.
The average duration from the onset of symptoms till diagnosis was (130.8 days) for colonic tumors and (229.3 days) for rectal cancer. The highest average number of medical consultations till reaching the diagnosis were more in patients with caecal cancer (5.5 medical
consultations) followed by patients with transverse colon, splenic flexure and rectal cancer (4 medical consultations).Patients with sigmoid colon and ascending colon cancer showed the least number of medical consultations (3.2 and 3.7 medical consultations respectively). The total average number of patients with single medical consultations for both colonic and rectal tumors was six patients (12%) the total average number of patients with two medical consultations was eight patients (16%) while the total average number of patients with three and more medical consultations was thirty six patients (72%).(tab 6)
table (7) shows that colonoscopy was able to detect colorectal cancer in 96.55% of patients while Barium enema could detect the disease in 85.71% of patients . Abdominal ultrasound was able to detect pathology in 29.41%. Other diagnostic tools were much less sensitive to detect colorectal cancer . The significance of CT-scan MRI anddiagnostic laparoscopy in the diagnosis of colorectal cancer could not be assessed because they were done for only few patients .

Table(5):-The efficiency of investigations in diagnosis of patients with colorectal cancer.

investigations	number of patients who did the investigations	Number of patients in whom the investigations	Accuracy rate
Colonoscopy	29	28	96.55
Abdominal	34	10	29.41
Barium	7	6	85.71
CT-Scan	5	2	40
Plain	12	2	16.67
MRI	2	1	50
Diagnostic	1	1	100

Table (6):-Causes of delay in diagnosis of patients with colorectal cancer

Causes of delay	Number of cases	Percentage
Patient	25	50%
General practitioner	1	2%
Consultant surgeon	0	0%
Patients and general practitioner	22	44%
Patients and consultant surgeon	2	4%

In twenty five patients(50%) the delay in diagnosis was related to the patients alone. In twenty two patients(44%) the delay was related to both the patients and general practitioner while in two cases the delay was related to both patients and consultant surgeon. In a single case the delay was related to general practitioner alone (table 8).

Discussion:

The risk of colorectal cancer in young people is low. Previous studies (3,4,6) pointed that (99%) of colorectal cancer occurs in people aged over forty years and (85%) in those aged over sixty years whereas in our study ; (84%) were over forty years ,

(32%) of patients over sixty years while (16%) were less than forty years . This showed that colorectal cancer occurred at earlier ages in our study as compared to H. W. Holliday and J.D. Hardcastle study(8).

Patients aged under 45 years presenting with alarming symptoms and a family history of the disease should be urgently referred for further investigations[7,8]

Patients with colorectal cancer usually present with combinations of symptoms ;primary symptoms include rectal bleeding persistently without anal symptoms and change in bowel habit most commonly increased frequency or looser stool (or both) , secondary effects include iron deficiency anemia and clear signs of intestinal obstruction .Clinical examination may show a definite ri t sided abdominal mass or definite rectal mass. 6) Unfortunately, many large bowel symptoms are common and non specific and often present late. Recently published guidelines however, make specific recommendations about which patients should be urgently referred within two weeks for further investigations[5]. In this study, combination of primary symptoms in this form of change in bowel habits abdominal pain or GIT bleeding and abdominal pain were the most prevalent presentation that were used as criteria to send the patients for further investigations. Those patients with any of these combinations described above should be subjected to a variety of investigations . The most sensitive in our study was found to be colonoscopy followed by Barium enema and that goes with F.D. Richard Hobbs conclusions (The role of primary care ABC of colorectal cancer) and the study done by H.W. Holliday and J.D. Hardcastle in 1979 (Delay in diagnosis and treatment of symptomatic colorectal caner) who showed the use of colonoscopy in well prepared patients reduces the delay in diagnosis of colorectal cancer[8] .

In this study ; colonoscopy was used in 58% of the patients and it failed to clench the diagnosis in 2% of cases with accuracy rate of 96.55% while in H.W. Holliday, J.D. Hardcastle study that involved 200 patients; colonoscopy was used in 9% of patients and it failed to clench the diagnosis in 4% of cases with accuracy rate 55. 55%. In this study Barium enema was done for 14% of patients with accuracy rate of 85.71% , as compared to the work of H.W.Holliday where Barium enema was done for 22% of them only with accuracy rate mounting up to 75%. Ultrasound was used in this study as a screening test for patients with suspected symptoms of colorectal disease with acceptable results as a screening test especially in right sided colonic tumors.

In our study , the average duration from the onset of symptoms till first medical consultation was 83.9 days for colonic tumors and 124.3 days for rectal tumors in comparison to the study done by H.W. Holliday, and J.D. Hardcastle that showed the average duration till presentation was 90 days for colonic tumors and 120 days for rectal cancer This shows that our patients with colonic and rectal tumors were usually presenting and seeking for medical advice at nearly equal duration with that of his patients.

The average duration from onset of symptoms till diagnosis was 130.8 days for colonic tumors and 229.3 days for rectal cancer while H.W. Holliday study showed the average duration from onset of symptoms till treatment was 227 days for colonic tumors which was more time than in our study and 274 days for rectal tumors which was also more time than in our study.

For the number of medical consultations H.W. Holliday mentioned that half of patients had more than three medical consultations (53.76%)[8] while in our study we found that (72%) of patients had three or more medical consultations . The present delay is considerable and most of this occurs outside the hospital The patient delay is largely the result of not recognizing the importance of bowel symptoms [7,8]

The etiology of Patient delay In the study conducted by (H.W. Holliday and J.D. Hardcastle) on two hundred patients, showed that ninety nine patients were ignorant of the implications of their symptoms and eighty six did not regard them as being serious . Thirty one patients believed their symptoms to be due to dietary indiscretion alone and only thirteen (7.5%) mentioned the possibility of cancer. 30% of patients with rectal tumors thought they had piles Most patients (90%) discussed their symptoms with family or friends and usually advised to see the doctor . Sixteen patients presented early with minor symptoms and forty four presented only after their family had insisted that they consult a doctor [20].

On the contrary In our study ; half of our patients were delayed in seeking medical advice due to ignorance of their symptoms and regarding their symptoms (especially minor symptoms) not serious .

The delay with general practitioner was the result of not examining the patients with possible rectal carcinoma and not recognizing symptoms suggestive of colonic carcinoma[6,7,8] .The so incomplete examination or initial referral to a non surgical specialty appeared to contribute to delay.

The delay related to the general practitioner alone was only 2% in our study; we had a single case delayed in diagnosis due to failure of general practitioner to take good history, perform good physical examination and do simple investigations for the patient and not taking the symptoms of the patient seriously.

In H.W. holiday,and J.D. Hardcastle study ; showed that 22% of patients with rectal disease did not have rectal examination performed at any time by their family doctor , and nearly half of the patients with rectal cancer were referred with the correct diagnosis and a further third were sent to the appropriate surgical department for further investigations. Only (17%) were inappropriately referred.

In our study there was delay in the diagnosis of colorectal cancer related to both general practitioner and the patient in 44% of patients , and 4% related to the patient and the consultant surgeon . This type of delay was related equally to both; the patient who did not follow the medical instructions and the general practitioner who either sent the patient for investigations or gave him medications to be seen later on. H.W. Holliday, J.D. Hardcastle study showed that most of the total delay in diagnosis of colorectal cancer occurs outside the hospital and evenly split between the patient delay and general practitioner delay . This definitely goes with our results.

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