Treatment Delay in Rectal Cancer

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SUMMARY

Early diagnosis of rectal cancer is important for prompt treatment and better outcome. Little data exists for comparison or to set standards. The primary objective of this study is to identify factors resulting in delays in treatment of rectal cancer, the correlation between the disease stage and diagnosis waiting time, treatment waiting time and duration of symptoms. A five year retrospective audit was undertaken in University of Malaya Medical Centre (UMMC). There were 137 patients recruited and the median time to diagnosis was nine days after the first UMMC Surgical Unit consultation with a mean of 18.7 days. Some 11% had to wait more than four weeks for diagnosis. The median time from confirmation of diagnosis to surgery was 11 days with a mean of 18.6 days. Sixty-two percent of patients were operated upon within two weeks of diagnosis and more than 88% by four weeks. However, 10% of them had delayed surgery done four weeks after diagnosis. Long colonoscopy waiting time was the main cause for delay in diagnosis while delay in staging CTs were the main reason for treatment delays.

KEY WORDS:
Rectal cancer, Diagnosis waiting time, Treatment waiting time

INTRODUCTION

Rectal cancer is a slow growing tumour. It is potentially curable if discovered and treated at an early stage. The stage of a rectal cancer represents the most important prognostic factor regarding the probability of survival. The primary objective of this study is to identify factors causing delay in treatment of rectal cancer in University of Malaya Medical Centre (UMMC), Kuala Lumpur, Malaysia. In this study, we studied the correlation between the disease stage and diagnosis waiting time, treatment waiting time and duration of symptoms prior to presentation to UMMC surgical unit. There are many areas of potential delay in initiating treatment for rectal cancer: for example, delay in seeking medical advice, delay in referral to a specialist, delay in making the definitive diagnosis and delay in performing surgery. The purpose of this study was, therefore, to verify whether this perceived delay was correct, and to identify and rectify factors felt to contribute to an undue delay.

MATERIALS AND METHODS

This is a retrospective study carried out in University of Malaya Medical Centre (UMMC). One hundred and fifty patients undergoing surgical resection for rectal cancer between January 1999 and June 2004 were identified from the surgical log book. Case note review was undertaken. ANOVA statistics test was used for statistical analysis. Only the newly diagnosed rectal cancer cases were selected while recurrent cases were excluded from the study. Data regarding the duration of symptoms, dates of initial specialist consultation in UMMC, confirmation of diagnosis and surgery performed were all entered onto a standard proforma. Any gastrointestinal investigations organised were also documented. The diagnosis waiting time was defined as the time from initial specialist consultation to definitive histological or radiological diagnosis while treatment waiting time was taken as from confirmation of diagnosis to surgery.

RESULTS

One hundred and fifty patients who underwent surgery for rectal cancer were identified from the surgical logbook. Thirteen patients were excluded from the study because they were recurrent cases, hence only 137 of them were recruited in the study. Sixty-seven percent were Chinese, 19% Malay, 13% Indian and 1% from other ethnic groups. The patients' ages ranged from 20 to 86 years old, with a mean age of 62.2 years old. Male to female ratio was 1.63 to 1.

In our study, 96.4% of the patients presented with insidious symptoms suggestive of rectal cancer. 0.7% presented after a positive screening test while another 2.9% with acute symptoms such as intestinal obstruction and bleeding.

Out of 137 patients, 41 cases (30%) presented to the UMMC Surgical Unit with a confirmed diagnosis of rectal cancer from a private practitioner. Twenty-seven of them came with histopathological results of rectal biopsy while another 14 were referred after positive imaging findings. Out of the remaining 96 cases (70%) who presented without a confirmed diagnosis, 34 were referred from a private doctor, and 62 patients presented directly to us after noticing symptoms.

We were unable to determine the diagnosis waiting time for 33 patients (24%) since there was no documentation of either the date of first presentation or the date of diagnosis in the case notes. For the remaining 104 patients, the diagnosis waiting time ranged from 1 to 160 days, with a mean of 18.7 days and median of 9 days. Eighty-nine patients (65%) had their diagnosis confirmed within 4 weeks, of which 46 (33%) had the diagnosis confirmed by one week; 15 patients (11%) had their diagnosis achieved more than four weeks after presentation. Five cases of the delay were due to an initially erroneous diagnosis and another 10 were due to late imaging appointment because of low index of suspicion. (Table I) The patient who had waited for 160 days before the correct

Table I: Reason for time to diagnosis of more than 28 days

Erroneous diagnosis (33%)	Cases	Duration of delay
Fournier's gangrene	1	32 days
Anaemia	1	36 days
Rectal stricture secondary to traditional piles treatment	1	41 days
Bleeding piles	1	160 days
Ovarian tumour	1	68 days
Late imaging appointment (67%)		
Sigmoidoscopy	1	29 days
Colonoscopy	8	34 – 78 days
Barium enema	1	54 days

Table II: Relationship between total waiting time and disease stage

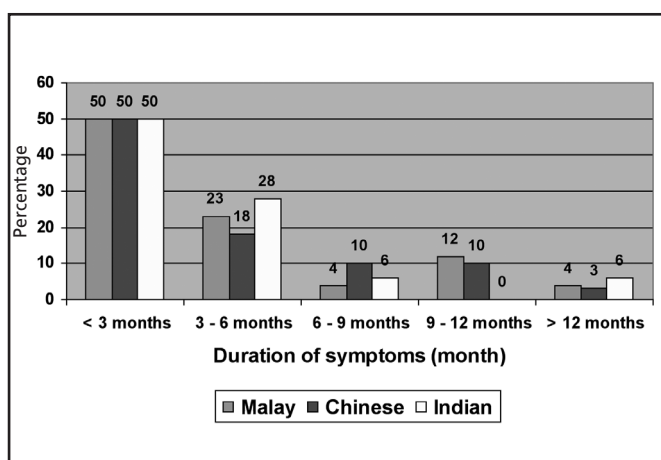| Total waiting time (Diagnosis & treatment)	Duke's A	Duke's B	Duke's C	Duke's D
Range (day)	15 – 65	3 - 191	9 - 276	1 - 104
SD (day)	28.04	47.08	62.65	24.57
Median (day)	18.00	20.00	39.00	19.00
Mean (day)	32.67	40.89	53.71	24.58

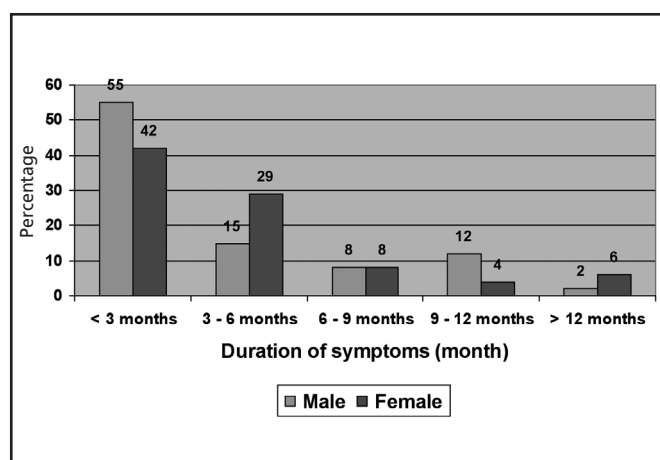Fig. 1: Duration of symptoms according to ethnic group

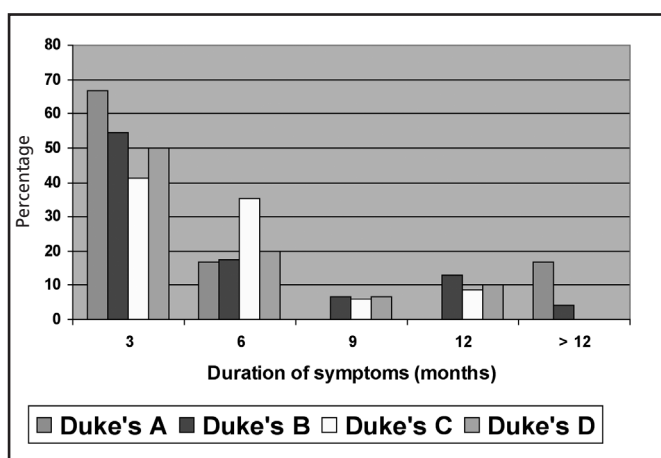Fig. 2: Duration of symptoms according to gender

Fig. 3: Duration of symptoms according to tumour stage

diagnosis was initially treated as hemorrhoids with rubber band ligation. Sigmoidoscopy was performed much later when he continued to bleed despite his hemorrhoids had improved.

We were unable to identify the treatment waiting time for three patients (2%) because they were diagnosed by private practitioners, where the dates of diagnosis confirmation were not available. Out of the remaining 134 patients, the treatment waiting time ranged from 1 to 270 days with a mean of 18.6 days and median of 11 days. Eighty-five patients (62%) were operated upon within two weeks of diagnosis and 120 patients (88%) by four weeks. However, 14 patients (10%) had delayed surgery done 4 weeks after diagnosis. Out of those 14 cases, 5 cases had treatment delayed due to neoadjuvant radio or chemotherapy; 4 cases due to pre-operative CT staging of tumour; 1 patient defaulted and in 4 cases the cause of delay could not be identified.

For pre-hospital delay, the duration between the first symptoms noticed to presentation at UMMC Surgical Unit ranged from 1 to 36 months with a mean of 4.56 months and median of three months. There were no significant differences in the duration of pre-hospital delay among different ethnic groups in Malaysia. Fifty percent of all the patients presented within three months of their first

symptom. (Figure I) Generally, males seemed more concerned about their symptoms and sought advice earlier. (Figure II)

It is often felt that the duration of the symptoms and total waiting time before initiating treatment will affect the tumour stage. But from our study, there seemed to be no correlation between tumour stage and duration of symptoms. (Figure III) Similarly, there is no statistically significant relationship between the disease stage and total waiting time. (Table II)

DISCUSSION

The age and sex distribution of the patients forming the study population was consistent with the demographic pattern of UMMC Surgical Unit admissions[1]. Our median time to diagnosis is 9 days. Other quoted median time to diagnosis for both colonic and rectal cancers is 31 days in Wales–Trent Audit[2], 20 days in Wessex Cancer Audit[2] and 17 days in a study conducted by Mark A. Potter et al[3]. Our diagnosis time is shorter because most of the rectal cancers can be felt on digital rectal examination or detected by sigmoidoscopy, hence leading to earlier diagnosis. For those patients with an initially erroneous diagnosis, their symptoms were misleading or they had double pathology, e.g. rectal cancer and bleeding hemorrhoids. For those due to a delay in imaging, a long waiting list for colonoscopy was the main reason, especially when there was no high index of suspicion.

Our median time from diagnosis to treatment of 11 days is shorter than other published times of 18 days in Wessex Cancer Audit[2] and 20 days in Wales–Trent Audit[2]. Out of the reasons for delayed surgery, a long waiting time to obtaining staging CT could be improved.

The stage of a rectal cancer represents the most important prognostic factor regarding the probability of survival[4,5]. It is often felt that the duration of the symptoms and total waiting time before initiating treatment, will affect the tumour stage. But from our study, there seemed to be no correlation between tumour stage and duration of symptoms. Also, there was no statistically significant relationship between the Duke's stage and total waiting time. This corresponds with other work which suggested that a mean delay in diagnosis of 48 weeks (from the onset of symptoms) in colorectal cancer does not significantly affect survival rates[4,6,7,8]. Similarly, there

is no correlation between the length of delay and Dukes' stage. However, another study concluded that patient in whom diagnosis was delayed had more advanced disease then those without delay[9].

Being a retrospective study, besides some missing data, we could not address sources of pre-hospital delay. The study might be more representative if we could have had a larger sample size. To overcome the above limitations, a prospective study could be designed in future, looking into the duration between the initial symptoms and first medical consultation. Further details regarding the first medical consultation, for example results of abdominal or digital rectal examinations at the time, and the diagnosis given then, are important to differentiate between patient delay and doctor delay. It would be interesting to determine any association between the diagnosis time and non-surgical referral prior to surgical opinion.

Being a specialist training hospital, UMMC has better resources compared to general hospitals. Therefore, it would be more representative of the country's situation if the same study could be repeated in other General Hospitals which have a larger patient load with relatively more limited resources.

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