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One misfortune is better than thousands of pieces of advice: The warning role of rectal bleeding

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ABSTRACT

Objective: Rectal bleeding is one of the most important symptoms of colorectal cancer that fast-tracks the patient's consultation with a physician. This study aims to assess the warning role of rectal bleeding in a risk group for colorectal cancer. Besides, the relationship among awareness, various socio-demographic criteria and the reasons for visiting or not visiting the physician was evaluated among greater than or equal to 40 years old.

Methods: This descriptive study was conducted thousand one hundred and sixteen (1116) individuals greater than or equal to 40 years old. Awareness of rectal bleeding as a warning sign in participating individuals was assessed by a questionnaire in addition to their family history of cancer or polyps and reasons for visiting or not visiting a physician.

Results: A prior history of rectal bleeding was found in 51.9% of subjects. Among those with rectal bleeding history, the rate of visiting a physician due to this bleeding was 49.7%. No statistically significant relationship was found between the frequency of those who contacted their physician and gender, education or age. The frequency of visiting a physician was significantly higher among individuals with a family history of colorectal cancer as compared with no family history and was directly proportional to the degree of family relationship ($p = 0.007$).

Conclusion: Even rectal bleeding does not raise enough attention for visiting a physician. Therefore, public education and screening still have paramount importance in the prevention of colorectal cancer.

Key words: *Colorectal cancer, rectal bleeding, colorectal polyps, adults greater than or equal to 40 years old, awareness*

Introduction

Colorectal cancer is a significant health problem throughout the world and has been associated with increased age. However, in recent years, an increased incidence of colorectal cancer has been reported in a younger population [1,2]. The disease can be avoided by targeting the adenoma-carcinoma process by removal of precancerous polyps, and early detection of colorectal cancer can allow us to cure the disease. Due to these facts, awareness and screening tests play a ma-

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jor role. Recent studies documented that oncologic outcomes of colorectal cancer can be improved by screening alone when the screening leads to visiting a physician immediately [3].

The clinical symptoms of colorectal cancer include rectal bleeding, changes in bowel habits (constipation-diarrhea), abdominal pain, weakness, fatigue, development of abdominal masses, bloating, weight loss, urge to defecate and feeling of incomplete discharge. Among these, rectal bleeding is the most common symptom [4-7].

This study aims to assess the effectiveness of the warning role of rectal bleeding for colorectal cancer among individuals with a history of rectal bleeding.

Methods

This descriptive study was designed to investigate if subjects with a history of rectal bleeding visited their physician because of this bleeding and their reasons for doing so. The study was conducted among the volunteers visiting the Maternal and Child Health and Family Planning Center between February 1st, 2013 and November, 30th, 2013. Eligible subjects were interviewed and asked to complete a questionnaire.

Inclusion criteria

To be eligible, subjects had to meet the following inclusion criteria: 1) age greater than or equal to 40 years, 2) no known or symptomatology of gastrointestinal disease or previous history of gastrointestinal surgery, 3) no signs of active rectal bleeding, 4) no known malignant tumors, 5) no history of anticoagulant - antiplatelet therapy, 6) no admittance to a hospital within 6 months prior to interview, and 7) no additional complicating or disabling disease that necessitated nursing help (e.g., mental illness).

Questionnaire

In order to assess the warning role of rectal bleeding for colorectal cancer among individuals greater than or equal to 40 years old, a questionnaire was constructed by the Department of Colorectal Surgery. This questionnaire covered the following areas: 1) a history of rectal bleeding, 2) family history of cancer or polyps, 3) whether the subjects visited a physician regarding their rectal bleeding symptomatology, 4) what they thought when they realized that blood was in their stool and 5) which diagnostic tool was used to examine them (digital rectal examination, colonoscopy, proctoscopy). Also, demographic information (gender, age, and education level) was also recorded.

Interview Process

Medical students were trained to administer the questionnaire in a standard fashion and practiced using the questionnaire on healthy volunteers before the study began. To avoid embarrassing patients when questioning them, patients were interviewed in a private room by one of the medical students of the same gender. Data entry and scoring were also performed by medical students.

Statistical Analysis

Frequency (percent) for categorical variables and mean ± standard deviation and median (minimum-maximum) were used as descriptive statistics. The Chi-Square test for categorical variables and Student's t-test for metric variables were used in order to compare two independent groups. SPSS for Windows Version 22.0 software (Armonk, NY: IBM Corp. USA) was used for statistical analysis. A p value less than 0.05 was considered significant.

Results

Fifteen hundred subjects greater than or equal to 40 years old visited the center during the time period. Of these, 194 did not meet the inclusion criteria, and 190 did not want to answer the questionnaire. This left thousand one hundred and sixteen (1116) subjects who were eligible and willing to participate in this study. The mean age of the subjects was 51±8.5 with a median age of 49 (40-86). There were 286 individuals with primary education, 403 with secondary education and 369 with higher education while 58 subjects were illiterate.

History of rectal bleeding was found in 579 subjects as detected by self-reported criteria. Among these subjects, 422 noticed blood in their stool, whereas 397 participants found blood on toilet paper or their hand, and 247 (participants had blood on their underwear before or after defecating (some of the patients noticed blood in more than one circumstance). However, only 288 (49.7 %) of the 579 participants that observed any one of the three conditions consulted a physician regarding rectal bleeding. The causes of consulting or not consulting a physician with complaints of rectal bleeding are given in Table 1.

Table 1. The causes of consulting or not consulting a physician with complaints of rectal bleeding (n=579; some of the patients picked more than one reason).

Reasons for consulting a physician	Number of individuals choosing this reason	Reasons for not consulting a physician	Number of individuals choosing this reason
Thought it might be a hemorrhoid	142	Thought it might be a hemorrhoid	149
Thought it might be due to cracks	60	Thought it might be due to cracks	32
Due to concomitant pain	81	(-Because) there was no concomitant pain	72
(-Because) the bleeding was disturbing	89	(-Because) the bleeding was not disturbing	61
Thought it might be cancer	92	Disregard	91
Other	4	Other	22

Table 2. The distribution of the rate of physician consultation due to rectal bleeding (n=288) in terms of family history in patients with a history of rectal bleeding (n=579).

Family history type	Number of patients consulting/ Number with history	Number of patients consulting/ Number without a history	χ^2; p
History of intestinal surgery in the family	[73/104] 70.2%	[215/475] 45.3%	21.21; <0.001
History of polyps in the family	[50/72] 69.4%	[238/507] 46.9%	12.77; <0.001
Colon or rectum cancer diagnosis in the family	[44/68] 64.7%	[244/511] 47.7%	6.9; 0.009
Cancer diagnosis other than colon cancer in the family	[100/177] 56.5%	[188/400] 47%	4.43; 0.035

χ^2: chi-square test statistic

Subjects with a history of rectal bleeding (n = 579) were questioned regarding their family history. We determined that individuals with a family history of intestinal surgery, colon/rectal cancer, polyps or other cancers show an increase in consultation with a physician compared to the subjects with no family history (p <0.05 - Table 2). Moreover, we assessed the relationship between the individuals that contacted a physician and having a family member with diagnosed cancer/polyps. We found that the physician consultation rate was significantly higher when the patient had a first-degree relative with history of colon disease (81.3%) as compared with a second-degree relative (63.6%) or third-degree relative (42.1%) (p = 0.007 significant difference was determined between the first-degree relatives compared to third-degree or more distant relatives).

Among the individuals that visited a physician with complaints of rectal bleeding, 55.6% were female (n=128), and 44.4% were male (n=160). There was no significant difference between genders regarding physician consultations (p = 0.825). The mean (±SD) age of individuals who did not contacted a physician regarding rectal bleeding was 51.1(±7.5) with a median (min-max) of 49 (40-82) while the mean (±SD) age of the individuals that contacted their physician was 52.2 (±8.3) with a median (min-max) of 50 (40-85), (p = 0.090). When assessing the educational status of individuals that consulted their physician, 5% were illiterate, 26.4% had primary education, 34% had secondary school education, and 34.4% had higher education. There was no significant difference among educational status regarding physician consultations (p = 0.099).

Out of 288 individuals that consulted a physician due to rectal bleeding, 281 individuals underwent physical and laboratory examinations. Of those patients, 263 individuals underwent separate digital rectal examination, 184 individuals underwent colonoscopy or proctoscopy, 61 individuals underwent double contrast radiography, and 77 individuals underwent ultrasonography - computed tomography. One hundred seventy-one patients underwent both rectal examination and colonoscopy/proctoscopy. There was no significant difference between males and females in frequencies of digital rectal examinations, double contrast radiography, ultrasonography - computed tomography. However, 72.7% of the male patients visiting a physician underwent colonoscopy/proctoscopy whereas only 56.7% of the female patient underwent colonoscopy/proctoscopy (p = 0.005).

Strengths and limitations

The study was conducted among the volunteers visiting the center for some health problems, so this was not a population-based study.

Discussion

Colorectal cancers are the most common cancers of the gastrointestinal tract, and most of them start as polyps [8,9]. However the adenoma-carcinoma sequence is a multiyear process [10-13], many years might pass before patients become symptomatic, and this might delay the diagnosis. It was reported that the time between the onset of the symptoms and the diagnosis is usually between 3 to 6 months [14]. Prognosis is poorer in patients with advanced disease, so early detection is essential [15]. The majority of patients (85%) are still diagnosed after the onset of symptoms, despite the fact that screening for colorectal cancer improves survival and is cost-effective [6]. Although colorectal polyps and cancer can develop at any age, more than 90% of cancer patients are older than 40 years, with the risk of developing cancer increases with advancing age. Unfortunately, many colorectal polyps and cancer produce no symptoms and are found incidentally during the radiological or endoscopic examination of the large intestine.

Nevertheless, there are symptoms highly associated with colorectal cancer [10-12]. Rectal bleeding, change in bowel habits, and perianal pain are mostly related to left-side localized tumors while abdominal pain, fatigue, and weight loss are related to right-sided tumors. Moreover, rectal bleeding and blood in the stool are the most common symptoms of colorectal carcinoma, especially for the sigmoid and rectal cancer, which are the most common of the colorectal cancers [8,16]. However, blood in the stool can occur as the first sign of many diseases other than colorectal cancer. Therefore, differential diagnosis and early detection of colorectal cancer is crucial [10-12].

The results of the present study showed only half of the participants with a history of rectal bleeding consulted a physician because of the bleeding. This is an indication that the public do not have sufficient awareness regarding the cause and consequences of rectal bleeding. Most importantly, we determined that the rate of physician consultations increase significantly if a patient or his/her family had a history of polyps, colorectal cancer or other types of cancer. Indeed, one misfortune is better than thousands of pieces of advice. However, there was no relationship between physician consultations and gender, but there was a trend toward an increased rate of physician consultations with increasing age and level of education. Regardless, we have to increase the awareness of the curability of colorectal cancer if detected early. Others have also reached similar conclusions. Investigating the prevalence and consultation behavior in 1200 adult patients with rectal bleeding, Crosland and Jones found that only a minority of patients seek medical advice [4]. In addition to this, a study conducted at University Kebangsaan Malaysia Medical Centre showed that 60.8% of those with rectal bleeding still postponed getting medical help even knowing that rectal bleeding was a symptom of colorectal cancer. Furthermore, the same study reported that 55.9% of the participants who knew that being older than 40 years means increased risk of developing colon cancer still postponed seeking medical attention [14].

Although there is controversy in the literature regarding the predictive and diagnostic value of rectal bleeding for cancer, most studies still recommend that all patients over 40 who present with rectal bleeding be referred for full colonic investigation. Factors affecting the predictive and diagnostic value of rectal bleeding was assessed in a prospective study, and the authors concluded that rectal bleeding has a low predictive value for cancer [7]. This finding echoed in another study as well [17]. However, Goulston et al., reviewed 145 consecutive patients aged 40 years and over who had presented with rectal bleeding and found that the source of bleeding was diagnosed as colorectal cancer in 15 patients and polyps in 11. They recommended that all patients aged over 40 who present with recent rectal bleeding should be referred for full colonic investigation. In addition, serious pathology was detected by colonoscopy in 44.4% of patients including colorectal carcinoma in eight cases and one or more polyps in 25 cases in a prospective study investigating 99 consecutive patients over 40 years presenting with rectal bleeding. Again, the authors recommended flexible sigmoidoscopy or colonoscopy to all patients over the age of

40 years presenting with rectal bleeding [18]. Moreover, Mant et al. also reported an elevated probability of colorectal cancer (21 percent) in patients who had seen blood mixed with feces [19]. In another study to determine the frequency of neoplastic conditions in patients with rectal bleeding presenting in general practice, colorectal cancer was diagnosed in 15% and polyps in 8% of patients aged 40 years and over who consulted a general practitioner with either the first episode of rectal bleeding or with a change in bleeding pattern.

In conclusion, a history of rectal bleeding was common in our population of patients over 40 years of age. However less than half of them sought medical attention when the rectal bleeding episodes occurred. Moreover, the frequency of visiting a physician because of rectal bleeding was significantly higher in individuals with a family history of colorectal cancer as compared with no family history and was directly proportional to the degree of family relationship. Sufficient awareness about the importance of rectal bleeding as a symptom of the serious disease is missing in patients without a family history. This once again puts forward the importance of education and screening programs.

Conflict of interest statement

The authors have no conflicts of interest to declare.

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