

Colorectal screening by a self-completion questionnaire

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SUMMARY The prevalence and significance of colorectal symptoms within a group of 1533 individuals was assessed using a self-completion questionnaire and results compared with faecal occult blood screening. One hundred and twenty eight individuals listed one or more symptoms, while only 12 had a positive blood occult test. Of the subjects studied, 6.6% had noticed bleeding from the rectum in the last six months, 8.7% diarrhoea, and 12.3% a change in bowel habit. Examination of these individuals revealed one (0.8%) to have an adenoma of the colon. By comparison, occult blood testing identified two patients with carcinoma and four with adenoma. Both of the patients with carcinoma and three out of the four with adenoma had replied negative to the questionnaire suggesting the self-completion questionnaire to be of little value in the early detection of colorectal neoplasia.

Screening of asymptomatic individuals for colorectal cancer has been attempted using rigid sigmoidoscopy,¹ or the stabilised quaiac faecal occult blood test, Haemoccult (Eaton Laboratories).^{2,3} Each technique had disadvantages. Rigid sigmoidoscopy only examines the distal bowel and faecal occult blood testing is hampered by appreciable false negative rate,⁴ and a poor compliance.⁵⁻⁷

The median time from the onset of symptoms to diagnosis of colorectal cancer is 30-32 weeks. Eighty per cent of this delay being before the patient is seen at the hospital.⁸ Furthermore, of those patients admitted to hospital as emergencies (40%) 75% have seen their general practitioner with symptoms before their urgent admission.⁸ Early identification of these symptomatic individuals may be a more beneficial method of screening than extensive screening of asymptomatic individuals. The aim of this study was to determine the prevalence of colorectal symptoms within the community, the significance of such symptoms as identified by a self-completion questionnaire, and to correlate the results of the self-completion questionnaire with standard occult blood testing.

Methods

PATIENTS

One thousand five hundred and thirty three patients

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aged between 45-74 years, from two general practices in Nottinghamshire, were studied. Those with known colorectal pathology were excluded by their general practitioner. Each patient was sent a self-completion questionnaire (Table 1) and a Haemoccult faecal occult blood test. Participants were asked to ring any of the symptoms listed that they had noticed in the last six months, and apply two samples from three successive stool specimens to the Haemoccult test slides (as recommended by the manufacturers, Eaton Laboratories). Dietary restrictions were not imposed but participants were told to avoid vitamin C preparations during the occult blood testing. Patients were provided with a stamped addressed envelope for return of the test

Table 1 *Prevalence of symptoms in 527 individuals completing the questionnaire*

<i>Symptom</i>	<i>Number</i>	<i>%</i>
(1) Diarrhoea - either (a) watery stools, or (b) more than three bowel actions each day lasting for more than one week	46	8.7
(2) Altered bowel habit: a change in the number of bowel actions (motions)	65	12.3
(3) Bleeding from the back passage (rectum)	35	6.6
(4) Weight loss without dieting of more than 3.1 kg	3	0.6
(5) Abdominal pain that has worried you	57	10.8

and the Haemocult slides were tested without rehydration. Any patient with one or more positive occult blood test, or a positive questionnaire (defined as one or more positive symptoms) was seen and examined in the Department of Surgery, where a rigid sigmoidoscopy and flexible sigmoidoscopy (using the 60 cm ACM.TS instrument) was performed. If no abnormality was found after flexible sigmoidoscopy, patients then underwent double contrast barium enema examination of the colon.

Results

Four hundred and eighty three (34.3%) individuals returned both the questionnaire and the completed Haemocult test, and a further 44 returned only the questionnaire, providing a total of 527 questionnaires for analysis (50 were returned as 'incorrectly addressed' (3.2%)).

One hundred and twenty eight (24.4%) of the 527 questionnaires were positive (defined as one or more questions marked 'Yes'). Twelve (2.5%) of the 483 Haemocult tests were positive, eight being in asymptomatic patients and four in patients with symptoms (Table 2).

Of the 399 individuals with a negative questionnaire, 347 also had a negative Haemocult test result, and only eight a positive Haemocult test. Of the 128 individuals with a positive questionnaire, only four had a positive occult blood test (Table 3).

Forty six (8.7%) out of the 527 individuals had had diarrhoea, 65 (12.3%) a change in the number or type of bowel action, and 35 (6.6%) bleeding from the back passage. Only three individuals had lost more than 3.1 kg in weight and 57 (10.8%) had had abdominal pain that had worried them (Table 1).

Results of the examination of the 128 symptomatic individuals are shown in Table 4. A large number of subjects had had symptoms which had resolved by the time they were seen. No carcinomas

Table 2 Yield from 527 returned questionnaires

Category	Number	%
Completed questionnaire +ve	128	24.4
Completed questionnaire -ve	399	75.6
Total	527	100.0
Yield from 483 completed Haemocult tests in the same patients		
Haemocult test +ve	12	2.5
Haemocult test -ve	471	

Table 3 Correlation of questionnaires with Haemocult

	Number	%
Questionnaire completed: asymptomatic		
Haemocult completed -ve	347	65.8
Haemocult completed +ve	8	1.5
Haemocult not completed	44	8.3
Questionnaire completed: symptomatic		
Haemocult completed -ve	124	23.5
Haemocult completed +ve	4	0.75
Total	527	100.0

were discovered in this group, but one individual who had noticed bleeding per rectum was found to have two 0.5-1.0 cm adenomatous polyps in the sigmoid colon (positive on Haemocult testing). Other causes of bleeding per rectum were haemorrhoids 25 (71.4%), diverticular disease four, fissure in ano one, and no abnormality was found after endoscopy and double contrast barium enema examination in four.

An examination of the 12 persons with a positive occult blood test (Table 5) revealed four patients to have one or more adenomatous polyps all over 0.5 cm in size, and two to have carcinomas of the sigmoid colon, one a Dukes' stage A and the other a Dukes' stage B lesion. Three of the patients with polyps and both patients with cancer had filled in 'negative' answers to all five of the questions on the questionnaire.

Discussion

Results from this study clearly show the questionnaire used was of little value in the identification of

Table 4 Results of 128 patients with positive questionnaire

Category	Number
Adenomatous polyp (1 patient Haemocult +ve)*	1
Haemorrhoids	25
Irritable bowel	5
Diverticular disease (1 patient Haemocult +ve)*	6
Duodenal ulcer	3
Constipated	2
Gastroenteritis	2
Fissure-in-ano	1
Postcholecystectomy	1
Left inguinal hernia	1
Past history of adenomatous polyp	1
Normal examination (2 patients Haemocult +ve)*	56
	104
Did not attend for examination	24
Total	128

* A total of four patients with a positive Haemocult blood test.

Table 5 Results of 12 patients with positive Haemoccult test and their questionnaire result

Patient	Q	H	Findings
1	-	+6/6	Ca sigmoid (B)
2	-	+3/6	Ca sigmoid (A)
3	-	+2/6	Polyp sigmoid (2 cm)
4	-	+1/6	Polyp (2 cm)
5	-	+2/6	5 polyps (1-2 cm)
6	-	+1/6	Diverticular disease
7	-	+3/6	NAD
8	-	+1/6	NAD
9	+	+1/6	2 polyps (0.5-1 cm)
10	+	+1/6	Diverticular disease
11	+	+1/6	NAD
12	+	+1/6	NAD

Q = questionnaire, positive or negative.

H = Haemoccult test, number of squares positive.

early colorectal neoplasia. Not only was the false negative rate high, only one person out of the 128 with symptoms having neoplastic disease (0.8%), but the false negative rate was also unacceptable (83.3%) both of the patients with cancer and three out of the four with adenomas replying negatively to all five of the questions on the questionnaire.

Cancers of the colon and rectum produce symptoms of bleeding, diarrhoea, constipation, a change in the bowel habit and abdominal pain. Such symptoms, however, are extremely common within the general population as a whole.⁹⁻¹⁰ Of the subjects studied, 24.4% admitted to suffering from one of these symptoms; 6.6% of subjects admitting to bleeding from the rectum; 8.7% diarrhoea, 12.3% altered bowel habit, and 10.8% abdominal pain. These results have been confirmed by previous workers and show how difficult early identification of patients with neoplastic disease is, when so many apparently healthy subjects have such symptoms. Even the presence of bleeding from the rectum, a symptom present in a great many cancers, was only present in one of the patients with an adenoma, and more often than not was because of haemorrhoids; 71% of persons with bleeding being found to have haemorrhoids on examination, and it is understandable why so many clinicians attribute bleeding from the rectum to piles without further recourse.

Of more concern is the problem of the high false negative rate of the questionnaire in patients with neoplastic disease of the colon (83.3%). Failure of the questionnaire may be due to the inability of individuals to recognise early subtle changes produced by the cancer or adenomas or a failure to ask the correct questions in the questionnaire. The frequency of symptoms detected by the questionnaire is similar to results obtained by Thompson and

Heaton,⁹ and Jones¹⁰ suggesting the questionnaire was reflecting the true frequency of symptoms noticed by the patients. It is much more likely, therefore, that the high false negative rate is due to the inability of most individuals to recognise early symptoms attributable to colorectal cancer and it is not until the cancer enlarges that their symptoms become apparent. For this reason the value of a self-completion questionnaire must remain limited as a method of screening for colorectal cancer, and occult blood testing despite its problems, remains the only practical method of population screening for colorectal cancer at the present time. The positive rate is low (2.5%), but the predictive yield for neoplasia high (50%); two patients with cancer, one a stage A and one a stage B and four patients with adenoma being identified.

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