ORIGINAL PAPER 4

Delay in the diagnosis of colorectal cancer

CHRISTINE MacARTHUR, PH.D
Research Fellow, Department of Epidemiology and Social Research, University Hospital of South Manchester

ALWYN SMITH, PH.D, FRCP, FRCGP, PFCM
Professor, Department of Epidemiology and Social Research, University Hospital of South Manchester

SUMMARY. Investigation of factors affecting the speed of diagnosis, referral and treatment of 113 patients with colorectal cancer shows that failure to examine the patient was significantly associated with delay. Patients who were not given a rectal or abdominal examination at their first medical consultation experienced considerably more delay in being referred for specialist opinion. Factors affecting the decision to examine are described.

Introduction

ALTHOUGH the evidence is not conclusive, most authorities believe that early diagnosis of colorectal cancer has a favourable effect on prognosis (Rowe-Jones and Aylett, 1965; Leffall, 1974; Heald, 1977). The effect on duration of survival is difficult to demonstrate but the quality of remaining life can be favourably influenced by successful resection. Delay in diagnosis has therefore aroused some interest and several studies have sought to determine its extent (Rowe-Jones and Aylett, 1965; Holliday and Hardcastle, 1974; MacAdam, 1979; MacArthur and Smith, 1981) and to identify its causes. Holliday and Hardcastle (1974) found that 32 per cent of their patients were not given a rectal examination at any time by their family doctor even though in many cases several visits were made for continuing symptoms. We have looked into the matter further as part of a comprehensive study of delay in diagnosing large bowel cancer.

Method

The study group were 127 patients who were found to have large bowel cancer in two health districts in the North-West Region during a 12-month period and who were available for interview. Some patients were too ill to interview and some died shortly after operation. The study distinguishes three phases of delay: from the patient's first awareness of symptoms to first medical consultation (phase I); from first consultation to referral for specialist opinion (phase II); and from first referral to the hospital to definitive treatment (phase III). Information was obtained mainly from an interview (conducted by C. MacA.) with the patient shortly after operation, but further information and corroboration was obtained by writing to the general practitioner concerned and from the Cancer Registry. Patients and doctors were very cooperative and provided detailed accounts from first symptom to treatment. Dates had sometimes to be estimated as midpoints of the week, month or part of the year recalled, but in many cases it was possible to establish exact dates. Whenever the available data did not seem reliable, we omitted the patient from the relevant sections of the analysed material.

Results

Delay

Phase II delay was considerable for a number of patients. Table 1 shows the distribution of phase II delay. (Fourteen patients were omitted from the table since accurate dates could not be obtained.) Only 36 of 113 patients (32 per cent) were referred to a hospital specialist at first consultation and 34 (30 per cent) had still not been referred three months after they had first been seen by a doctor. Delay was measured from first consultation with the doctor irrespective of how many times the patient had returned before being referred. Most of those patients who were delayed more than three months had visited their doctor at least three times and many had made four or more visits.

Examinations

The patients were asked what had happened when they first went to the doctor. If they did not mention being

Table 1. Distribution of phase II delay.

Duration of referral delay (days)	Number of patients	Cumulative percentage
0–2	36	*32.0*
3–7 (1 week)	7	*38.0*
8–14 (2 weeks)	5	*42.5*
15–30 (1 month)	11	*52.5*
31–60 (2 months)	13	*64.0*
61–90 (3 months)	7	*70.0*
91–182 (6 months)	13	*81.5*
183–365 (1 year)	15	*94.5*
Over 365	6	*100.0*
Total	113	*100.0*
No information	14	-

Table 2. Association between rectal and/or abdominal examination at first medical consultation and phase II delay.

	Percentage of patients referred		
Delay (days)	Both examinations (n = 22)	One examination (n = 36)	No examination (n = 42)
2	*50*	*50*	*9.5*
14	*59*	*67*	*19*
30	*73*	*72*	*31*
90	*91*	*83*	*52*
Median	1.5 days	2.5 days	89.5 days

Kruskal-Wallis test, $P<0.001$

examined, they were asked specifically whether they had been given a rectal or abdominal examination at their first visit. Only 38 patients (34 per cent) said that they had been given a rectal examination at their first visit. A further 10 patients were so examined at a subsequent visit and 13 could not remember. Forty-one patients said they had had an abdominal examination at the first visit, 20 were examined at a later visit and 13 could not remember. It transpired that 22 patients had both types of examination, 36 had only one and 42 had neither examination at their first visit.

Failure to examine associated with delay

The general practitioner's failure to carry out an examination of the patient at the first consultation was found to be associated with delay in his being referred to a specialist. Table 2 shows that patients who were examined either abdominally or rectally or by both methods had a median delay of 1.5 and 2.5 days respectively, compared with 89.5 days for those patients who were not examined at all. After three months 48 per cent of those patients who had not been examined at their first visit had still not been referred to a specialist, compared with only 17 per cent of those who had had one examination and 9 per cent of those who had had both examinations. The 13 patients who could not remember whether they were examined or not were omitted from the table; median delay for them was 79 days. Duration of delay for patients who were examined at a later date was slightly longer than for those never examined. We have used the Kruskal-Wallis test (Siegel, 1956), which is a non-parametric test suitable for data that can be ranked.

Since not being examined by the doctor was clearly associated with phase II delay, it is of interest to consider what determined whether a patient would be examined. Our only finding was that patients presenting with abdominal pain were more likely to be given an abdominal examination at their first visit ($P=0.0036$). Duration of symptoms did not affect decision to examine, nor did the type of practice, the sex, age or social class of the patient, or how long the patient had been registered with the doctor.

Discussion

The typical early symptoms of large bowel cancer are also frequently encountered in transient non-serious gastrointestinal disease. This may explain some of the delay and the failure to examine. Nevertheless, the omission of physical examination may be costly to the small number of patients whose symptoms are due to malignant disease. We are currently attempting to test the hypothesis (suggested to us by our experience so far) that patients whose symptoms are due to malignant disease are more likely to have multiple symptoms, symptoms of persistent duration and symptoms which markedly disrupt their lives. A pilot study has shown that in a practice with 10 doctors, only 133 patients presented with significant gastrointestinal symptoms in an eight-week period. This average of 1.5 patients per doctor per week does not represent an enormous caseload. It is interesting to note that there was very little difference in the duration of delay between patients who had only one type of examination and those who had both abdominal and rectal examinations. It is possible that examination had no direct effect on delay, and that our findings imply that delay in referral is less likely among doctors whose habit it is to examine the patient. Certainly, by no means all malignant lesions can be detected on physical examination. Nevertheless, competent examination seems likely to provide additional diagnostic information in at least some cases of colorectal cancer.

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Address for reprints

Professor Alwyn Smith, Department of Epidemiology and Social Research, University Hospital of South Manchester, Kinnaird Road, Manchester M20 9QL.

Epidural anaesthesia in low-risk obstetrical patients

A retrospective cohort study of factors associated with epidural anaesthesia in a group of 525 low-risk obstetric patients was performed. Epidural anaesthesia was administered by obstetric anaesthesiologists, and patients were monitored by nurses experienced with epidural anaesthesia. Although retrospective studies cannot establish cause-and-effect relationships, it was found, when compared with deliveries without epidural anaesthesia, that epidural anaesthesia labours lasted significantly longer, and needed more instrumentation and more help from oxytocic drugs. There was no difference in blood loss, retained placenta or fetal health. The costs were also greater.

Source: Schussman, L. E., Ross, F., Larsen, L. C. *et al* (1982). Epidural anaesthesia in low-risk obstetrical patients. *Journal of Family Practice,* **14**, 851-858.