

THE DIAGNOSIS AND TREATMENT OF CANCER IN A GENERAL PRACTICE

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HOW much avoidable delay occurs in the diagnosis and treatment of cancer? Can it be reduced, and if so how? Where does delay occur, and for what reasons? Questions such as these are often asked, and this paper is written in order to try to answer some of them from experience in a rural practice in south-east England over a period of 18 years.

Since 1946 records have been kept of all new cases of cancer occurring in this practice. A special record card, figure 1, was completed for each patient. Patients moving into the practice with cancer diagnosed elsewhere have not been included.

Name	Age at onset
Site of growth	
Date of onset	
First symptom(s)	
Date of first visit to doctor	
Date of first visit to hospital	
Date of diagnosis	
Date of admission to hospital	
Operation/treatment	
Date of death	

Figure 1.
The Record Card

The facts recorded on the cards were few and simple, and the objective was to make it possible to measure three intervals—

Interval A: Between the onset of symptoms and the first consultation with the family doctor;

Interval B: Between the first consultation and the date of diagnosis;

Interval C: Between the date of diagnosis and the start of treatment.

General practitioners are concerned with the diagnosis of cancer in most cases and are responsible for initiating investigations and treatment. It is also often their duty to care for patients in the terminal stages of the disease. They are, therefore, in a position to assemble some facts not easily available to others in hospital, particularly concerning the early stages of the disease. Table I lists the patients included in this survey, according to age, sex and site of growth. There are 123 patients; 73 men, 49 women and one baby girl. Ninety-four patients (76 per cent) were between 51–80 years, the highest incidence being in the 60–70 age group.

Interval A

The interval between the onset of symptoms and the date of the first consultation with the doctor is shown in table II. For comparison the patients have been divided into two groups, those seen between 1946–1955, and those seen between 1955–1964. They are also grouped according to the length of the interval, 0–4 weeks, 4–12 weeks, 12 weeks–1 year, and over 1 year. It will be seen that the figures are very similar for the two nine-year periods, and that in each, slightly less than half the patients were seen four weeks or less from the time that symptoms were first noticed. Three patients had no symptoms, the diagnosis being made as a result of a routine medical or x-ray examination. Over the whole 18-year period at least 23 patients (18 per cent) delayed over 12 weeks in seeking advice. Two factors have an important bearing on the length of interval A. The first is the type of symptoms which developed in the earliest stages of the disease, and the second is the patient himself and his attitude to ill health and his understanding of it. Early symptoms were discussed in two papers by McWhinney and Schapira in 1962. They pointed out the frequently misleading symptoms and the frequent discrepancy between the history and the physical findings, and the fact that the results of special investigations, such as x-rays, may be negative at first in cases which are later proved to have cancer. All of these findings have been confirmed in this survey. McWhinney draws a distinction between presenting symptoms noted at the first consultation, and additional symptoms that develop during the next month. Schapira divided his cases of cancer into two groups, tumours which were accessible and tumours of internal organs which were inaccessible. In the first group the patient had often become alarmed by the early symptoms, and

therefore sought advice early, whereas in the second group the growth was insidious and often far advanced when symptoms brought the patient to the doctor.

When reviewing the findings of this survey in nearly every case it was possible to divide the presenting symptoms at the first consultation into one of three types:

Type 1. Major or alarming symptoms, such as bleeding, severe pain, vomiting, and symptoms due to a complete or threatened obstruction to bowel, urethra, bile duct, larynx, etc.

Type 2. Visible and/or palpable lesions, often discovered by the patients themselves; commonly these are breast cancers or skin cancers.

Type 3. Minor, vague or indefinite symptoms, such as tiredness, breathlessness, cough, loss of appetite, loss of weight, altered bowel habits, indigestion, swollen ankles, etc.

TABLE I
PATIENTS INCLUDED IN THE SURVEY

Site of growth	Sex			Age								
	M	F	Total	0-11	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90
Lung ..	13	3	16						10	2	4	
Stomach ..	10	4	14						1	5	6	2
Breast ..		12	12					2	4	5	1	
Skin { Rodent	5	6	11				2	1	4	2	1	1
Others	1	1	2							1		1
Prostate ..	10		10						1	1	6	2
Pancreas ..	7	2	9						3	1	4	1
Colon ..	3	6	9				1	1		5	1	1
Rectum ..	6	1	7					1			4	2
Ovary ..		5	5					1	1	3		
Uterus ..		1	1							1		
Cervix ..		1	1							1		
Bladder ..	4	2	6					2	1	2	1	
Kidney ..	2		2		1					1		
Suprarenal		1	1	1								
Larynx ..	2		2					1	1			
Mouth ..	1		1								1	
Face ..	1		1							1		
Tongue ..	1		1							1		
Oesophagus ..	1		1							1		
Thyroid ..		1	1							1		
Parotid ..		1	1		1							
Hodgkins ..	1	1	2		1					1		
Leukaemia ..		1	1							1		
Brain ..	1	1	2				1			1		
Bone ..	2		2							1	1	
M. myeloma	1		1				1					
Thymus ..	1		1			1						
	73	50	123	1	3	1	5	9	26	38	30	10

TABLE II
DURATION OF SYMPTOMS AT FIRST CONSULTATION

	<i>Number of patients</i>		<i>Total</i>	<i>Percentage</i>
	<i>1946-55</i>	<i>1955-64</i>		
4 weeks or less ..	22	37	59	48.1
4-12 weeks ..	11	19	30	24.4
12 weeks-1 year ..	2	11	13	10.5
Over 1 year ..	5	5	10	8.1
No symptoms ..	1	2	3	2.4
Unknown	5	3	8	6.5
Total	46	77	123	

TABLE III
NUMBERS (AND PERCENTAGES) OF PATIENTS AND TYPES OF 'PRESENTING' SYMPTOMS

<i>Period</i>	<i>Type I</i>		<i>Type II</i>		<i>Type III</i>		<i>No symptoms</i>
	<i>No.</i>	<i>Per cent</i>	<i>No.</i>	<i>Per cent</i>	<i>No.</i>	<i>Per cent</i>	
Pre 1955 ..	21	45	12	26	12	26	1
Post 1955 ..	23	31	20	26	32	41.5	2
Total ..	44		32		44		3

TABLE IV
TYPES OF PRESENTING SYMPTOMS RELATED TO INTERVAL 'A'

<i>Symptoms</i>	<i>0-4 weeks</i>	<i>4-12 weeks</i>	<i>12 wks-1 yr</i>	<i>Over 1 yr</i>	<i>Unknown</i>
Type I	24	12	2	2	4
Type II	13	10	2	6	1
Type III	22	8	9	2	3
Total	59	30	13	10	8

The following brief case histories illustrate these three symptom types.

Type 1: Eighty-four-year-old widower, who had enjoyed remarkable health and continued working until over 80. First seen at home 22 September, complaining of increasing abdominal pain and constipation. Abdomen distended; P.R. N.A.D., rectum empty. Two enemata given at home with no faecal results. No flatus passed. Admitted as emergency 25 September. Laparotomy—carcinoma of descending colon with secondaries. Caecostomy performed. He died three months later.

Type 2: Married woman aged 66. First seen April 1948 complaining of lump in right axilla for three weeks. Examination revealed carcinoma in right breast; a radical mastectomy was performed, followed by postoperative x-ray therapy, but she died 20 months later from secondaries.

Type 3: Married woman aged 45. First seen August 1956 complaining of extreme tiredness for six months. Physical examination was negative, except for haemoglobin 56 per cent. Referred in turn to physician, psychiatrist and gynaecologist. The latter, whose outpatients she reached in April 1957, found some abdominal distention and slight oedema of the sacrum and feet. A mass was felt in the pelvis. Laparotomy revealed carcinoma of the ovary. Complete removal was possible, and was followed by x-ray therapy. The patient is alive and well eight years later.

Some patients with Type 1 symptoms may admit having had earlier symptoms of indefinite type, but they have not sought advice or have treated themselves. Patients with these symptoms usually require urgent investigation and treatment. Type 2 symptoms are usually due to breast or skin cancers, and are 'accessible'. Most of them will be early and suitable for radical treatment, although occasionally, as seen in the example given, the lump noticed by the patient will turn out to be a secondary. Diagnosis is usually made with certainty at the first examination, and treatment follows without delay. Patients who seek advice for type 3 symptoms provide the greatest difficulty and challenge to the general practitioner. As Schapira says, "The outcome very often depends on the tenacity and vigilance of the doctor, who can follow up the patient and observe changes in signs and symptoms". In dealing with these patients it is a great help to the general practitioner if he has open access to the pathology and x-ray departments at his local hospital. An early haemoglobin estimation is of particular value in these cases.

Tables III and IV show the numbers of patients presenting with the three types of symptoms (table III) and the types of symptoms related to interval A (table IV).

From table III it will be seen that while type 2 symptoms account for 26 per cent of cases in each of the two nine-year periods, type 3 symptoms have increased and type 1 decreased in the 1955–1964 period, as compared with 1946–1955. Table IV shows that a considerable number of patients (16 out of 44—36 per cent) with type 1

symptoms delayed more than four weeks before seeking advice. Some of these were patients who presented with major alarming symptoms, who admitted having had such symptoms for some time. Slight bleeding of the rectum, vagina or bladder was common in this group.

Mention has been made of the fact that the length of interval A may in some cases depend on what the patient has been taught or has read or heard about the symptoms which may be caused by cancer. Fear of the diagnosis and treatment still deters many from consulting the doctor, although their disease may be early and curable. In the campaign to achieve earlier diagnosis of cancer, increasing use will have to be made of techniques of health education for the general public, and of mass screening of susceptible groups, e.g. to detect carcinoma of cervix and carcinoma of lung, in the pre-symptomatic stages. The significance of such symptoms as cough, indigestion, altered bowel habits, postmenopausal bleeding, haematuria, rectal bleeding, weight loss and persistent tiredness, must be brought home to patients. The results of such teaching might well be to bring increasing numbers of patients with type 3 symptoms to the doctor, a high proportion of whom would not be suffering from cancer.

A fifty-six-year-old schoolmaster of over-anxious and introspective type, who admitted fear of cancer, was seen complaining of abdominal discomfort in the early mornings and of excessive lower bowel flatulence in the evenings. These symptoms had been present for about six months. On examination it was suspected that there was a mass in the right iliac fossa. Three specimens of stool were sent for examination, and each was found to contain small amounts of occult blood. He was referred to a surgeon, and a barium enema was ordered. This proved to be normal, and the patient went on his way rejoicing, but nevertheless having suffered some weeks of acute anxiety.

There is, also, the not uncommon problem of the patient whose early symptoms are misleading. In this survey there were 16 patients with lung cancer. Cough, as an early symptom, was present in only seven cases. The other patients presented with the following symptoms: chest pain, four; lassitude, four; loss of appetite, two; shortness of breath, two; indigestion, swelling of neck, pains in legs and foul taste, one of each. Finally, it has to be recognized that all too often long delays by patients in seeking advice are followed by long survivals, if not complete cures and, conversely that hopelessly advanced disease is seen in patients who have had only the shortest period of symptoms. The only patient in this survey who has survived more than five years after treatment for carcinoma of the stomach had had symptoms for six months when he was first seen.

Interval B

Interval B is the interval between the first consultation and the

making of the diagnosis. How often is there delay here, and for what reasons?

In table V the time taken to reach the diagnosis and the means by which it was made are shown. It will be seen that in 87 out of 123 cases (70 per cent) the diagnosis was made within four weeks, and often at the first consultation. In the remaining 36 patients, diagnosis took longer than four weeks, and in 22 cases (18 per cent) it took more than three months. Diagnosis was made on clinical examination in 67 cases (54 per cent). This includes those in whom the diagnosis was later confirmed by other methods. When the diagnosis was made within four weeks it was more often by clinical examination than when it was made later.

TABLE V
INTERVAL ' B ' BETWEEN FIRST CONSULTATION AND DIAGNOSIS

<i>Diagnosis by:</i>							
<i>Time taken</i>	<i>Clinical examination</i>	<i>Histology or biopsy</i>	<i>X-rays</i>	<i>Endoscopy</i>	<i>Operation</i>	<i>Post mortem</i>	<i>Number of patients</i>
4 weeks or less	56	11	9	2	8	1	87
4-12 weeks	1	2	5	5	1		14
12 wks-1 yr	6	2	4	1	1		14
Over 1 year	4	2				2	8
Total	67	17	18	8	10	3	123

The 36 patients in whom a diagnosis was made more than four weeks after the first consultation included carcinoma of stomach, five out of 14 cases; carcinoma of bladder, five out of six cases; carcinoma of lung, four out of 16 cases; carcinoma of ovary, four out of five, carcinoma of rectum, three out of seven; carcinoma of colon and caecum, three out of nine; carcinoma of pancreas, three out of nine; carcinoma of skin, two out of three. It will be seen that bladder cancer took more than four weeks to diagnose in five out of six cases. The presenting symptom in every case was haematuria. In one case the first histological report was misleading. In the others the interval was only slightly over four weeks and this was because these patients had first to be seen at an outpatient clinic where they were put on a waiting list for IVP and cystoscopy. This would seem to be a dangerously time-wasting procedure, and could be avoided if patients with gross haematuria could be admitted to hospital directly.

The reasons for the delay in diagnosis in these 36 patients can be

classified as follows: Misleading or misinterpreted symptoms, 22 cases; waiting list for investigation, eight; misleading reports from hospital investigations, five; patient refused admission for investigation, one.

The types of presenting symptoms in these 36 patients were: *Type 1*—13; *Type 2*—3; *Type 3*—19. Eleven out of 13 type 1 symptoms were bleedings.

It might be expected that when diagnosis is made early the prospects of radical and curative treatment would be better. Table VI shows the type of treatment possible in those in whom a diagnosis was made early (four weeks or less) and those in whom it was made later. The difference is not great, but, such as it is, it does confirm this expectation.

TABLE VI
TYPES OF TREATMENT POSSIBLE RELATED TO INTERVAL ' B '

<i>Interval between consultation and diagnosis</i>	<i>Treatment possible</i>					
	<i>Radical</i>		<i>Palliative</i>		<i>Symptomatic</i>	
	<i>number</i>	<i>per cent</i>	<i>number</i>	<i>per cent</i>	<i>number</i>	<i>per cent</i>
0-4 weeks . .	35	40	22	25.5	30	34.5
More than 4 wks	13	36.8	8	22.2	15	41
	48	39	30	24.5	45	36.5

The following case histories illustrate some of the reasons for delayed diagnosis:

Miss C. aged 69: small, pale, thin woman. Originally bombed out of London. Cancer suspected on many occasions in the past because of her appearance, but investigations always negative. A frequent surgery attender with minor ailments. In May 1956 complained of loss of appetite. Haemoglobin 45 per cent. Was about to leave for seaside holiday. Allowed to go, and given iron by injection. Three months later (July) haemoglobin risen to 85 per cent and patient feeling better. She was not seen again until December, when abdominal pain, distention and vomiting developed, and a mass was found in the right iliac fossa. On laparotomy, a carcinoma of caecum with secondaries was discovered.

Mrs E. aged 68: housewife. First seen November 1961 complaining of pains in her legs and swollen ankles. Grossly overweight. Much improved by weight reduction. Nine months later similar symptoms reappeared, together with tiredness and headache. She looked pale and haemoglobin found to be 40 per cent. Admitted urgently to hospital. Four weeks later discharged home. Diagnosis anaemia and left heart failure. October 1963, haemoglobin again falling, and patient referred back to hospital. Occult blood found in stools. Barium enema showed only multiple diverticuli. January 1964, clinical examination revealed vague mass in right iliac fossa. She was urgently readmitted and laparotomy revealed carcinoma of caecum, which was successfully removed. She remains alive and well 18 months later.

Mr G. aged 85: widower. First seen September 1961 complaining of general

weakness. Very pale; haemoglobin 45 per cent. Urgent admission for investigation but all, including barium meal, negative. Treated by iron by injection. Discharged home. He remained weak and three months later a central abdominal mass became palpable. Readmitted terminally. Post mortem—carcinoma of stomach.

Mr K. aged 61: a small, thin man, infrequent surgery attender; a champion gardener. First seen December 1962 complaining of occasional abdominal pain and vomiting. Appetite good. Nothing abnormal discovered. Treated with alkalis. Two months later he said that he was still getting some indigestion in the evenings. Some liver enlargement noted. One month later copious vomiting set in. His appetite suddenly decreased, and he complained of severe pain. A hard, fixed mass was felt in the epigastrium. Laparotomy revealed carcinoma of the lesser curve of the stomach. He died soon after.

Interval C

The interval between diagnosis and treatment can depend on several factors. Excluding what may loosely be described as "pressure on beds" in the hospitals, which varies from time to time, and when heavy may result in a waiting list for even urgent cases, the three most important factors are:

1. Where and when the diagnosis is made. While most patients are admitted to hospital with the diagnosis already made or strongly suspected, a few are admitted for investigation and the diagnosis is made in hospital.
2. The nature of the treatment required, and whether this is available at the hospital to which the patient has been referred. If it is not, there may be a further wait for admission to another hospital.
3. The type of cancer to be treated. Whether it is a naturally slow growing tumour, such as most skin cancers, or some more malignant condition.

Because of these variables, it is impossible to present a meaningful table showing this interval.

One-hundred-and-eight of the patients in this survey were admitted to hospital. Ninety-eight patients were admitted within four weeks of first referral or as emergencies; nine patients were admitted between 4–12 weeks after the first referral; and one patient who had refused admission earlier was admitted eventually five months later. Of the ten patients admitted more than four weeks after the first referral, six had been on the waiting list for periods of five weeks; one for six weeks and one for eight weeks. One patient, when offered admission, refused it the first time, and one patient's admission was delayed because she failed to carry out instructions about making her outpatient appointment.

Fifteen patients were not admitted to hospital. Eight of these did not require admission because they could be treated as outpatients. The remainder had such advanced disease that much treatment, other than symptomatic, was impossible. Their home conditions were good, and it was thought better to let them return home under the care of the family doctor. Twenty-three patients required emergency admission or readmission.

In the great majority of cases the consultant makes the decision as to what type of treatment is indicated, but there are cases where the family doctor's advice, based on his knowledge of the patient and his circumstances, may be helpful. In the after-care and follow-up of patients, the family doctor has a most important role, and this can only be done effectively if there has been good liaison between the hospital and the general practitioner during the patient's stay in hospital.

Domiciliary consultation in the patient's home has been found to be a most valuable method of deciding the best treatment in certain cases. It was used in seven cases in this series. When the waiting period of outpatient appointments is long, and the patient already seriously ill, it provides a means of short-circuiting the admission procedure, which is fully justified and must be counted as one of the blessings of the National Health Service.

The type of treatment given to patients with cancer, whether successful or not, may be classified as

- (1) radical, aimed at complete cure;
- (2) palliative, aimed at arresting or containing the disease, where complete irradiation is impossible; and
- (3) symptomatic, where the disease is so advanced that (1) or (2) are impracticable.

Out of the 123 patients in this series, no fewer than 33 per cent (41) were seen at such an advanced stage that nothing more than symptomatic treatment was possible. Forty-three per cent (53) were considered suitable for radical treatment and the remaining 24 per cent (29) were given palliative treatment.

Summary

A series of 123 consecutive new cases of cancer occurring in one general practice are described. The intervals between the onset of symptoms and first consultation, diagnosis, and treatment, in each case have been estimated. About half the patients sought advice within four weeks of the onset of symptoms; 18 per cent of patients delayed over 12 weeks. Early symptoms are classified into 3 groups:

- (1) major (alarming);
- (2) visible and/or palpable lesions in skin or breast;
- (3) minor (vague or ill-defined).

The value of open access to hospital diagnostic departments in the diagnosis of the third group of symptoms is stressed. It is suggested that patients with gross haematuria should be admitted direct to hospital for investigation without the delay imposed by outpatient attendance. In 70 per cent of the patients the diagnosis was made within four weeks of the first consultation; in 18 per cent the diag-

nosis was not made until more than 12 weeks after the first consultation. The reasons for delay in diagnosis are classified, the commonest cause being misleading or misinterpreted symptoms. The interval between diagnosis and treatment is discussed. In six cases (five per cent) a delay of four weeks or more due to the waiting list alone occurred. The important part played by the general practitioner in the follow-up of patients after treatment is stressed. The value of domiciliary consultation in diagnosis is recognized. In 33 per cent of the patients in this series symptomatic treatment alone was possible.

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Training for general practice: Result of a survey into the general-practitioner trainee scheme. M. J. WHITFIELD. *Brit. med. J.* 1966. **1**, 663.

A lengthy questionnaire was sent to all 142 trainees in general practice in England and Wales in July 1965. The replies received from 122 of them are the subject of this report.

Considerable defects were noted in the range of experience and instruction offered to trainees. Dr Whitfield, himself a trainee, comments "Though 25 per cent expressed dissatisfaction with their training, I believe that many more would have done so had they known what was available or needed in training for general practice".