THE PROBLEM OF UTERINE CERVICAL CARCINOMA IN SINGAPORE AND WEST MALAYSIA

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Uterine cervical carcinoma is a common disease. In the United Kingdom 2,700 women die yearly from this disease which accounts for 5 per cent of all female cancer deaths.[18] Although the aetiology of the disease is known, it is associated with early coitus, childbearing and low socio-economic status. The prognosis after treatment is a 50 per cent 5 year relative cure rate (Table I).[18] The morbidity associated with advanced forms of the disease is distressing to both patients and their relatives. Death from uremia usually brings relief from a dreaded disease. Since the advent of cytodiagnosis of cervical carcinoma pioneered by Papanicolaou and Traut in 1943 diagnosis of early forms has been possible. Moreover, there was hope that with widespread application of this method of early diagnosis, invasive cervical carcinoma would be eliminated altogether[22] and many lives would be saved.[21] However, other studies showed that it was not possible to prove conclusively that extensive use of cytological screening of large numbers of women lowered the incidence of invasive cervical carcinoma or decreased mortality from the disease.[16,19]

MAGNITUDE OF THE PROBLEM IN SINGAPORE AND WEST MALAYSIA

Deaths from carcinoma of the uterine cervix accounted for about 4 per cent of all cancer deaths in Singapore[25] and West Malaysia.[24] Shanmugaratnam and Muir[27] in their study of cancer incidence in Singapore made use of the number of cancer patients admitted into hospital and the number of biopsies of malignant tissues examined. They found that uterine cervical carcinoma was the most prevalent (Table II). Table III is taken from a larger series computed by Doll[11] on the incidence of different types of cancers in different populations. It can be seen that Singapore, Japan, India and Africa have the highest incidences of cervical carcinoma.

In Singapore cancer of the uterine cervix is the most common malignant disease and outnumbers naso-pharyngeal carcinoma among males.

THE DIAGNOSIS OF CERVICAL CARCINOMA

Early diagnosis is desirable as it improves the prognosis. In considering this for cervical carcinoma there are two propositions. One is the early diagnosis of clinical carcinoma of the cervix. The other is the diagnosis of early pre-clinical cervical carcinoma.

(a) *The early diagnosis of clinical carcinoma of the cervix.* Patients with clinical carcinoma of the cervix usually have abnormal vaginal bleeding as a symptom. This may be post-coital bleeding, irregular vaginal bleeding or post-menopausal bleeding. These women should have immediate full gynaecological investigation to rule out cervical carcinoma. Any suspicious area or growth on the cervix should be biopsied and the specimen sent for histological examination. The diagnostic sequence is:—

Abnormal vaginal bleeding → examination of cervix → punch biopsy → histopathological diagnosis

These diagnostic measures can be immediately implemented and do not require specialised training or expensive equipment. What is required is a heightened awareness of abnormal symptoms suggesting cervical cancer and immediate referral for full investigation.

(b) *The diagnosis of early pre-clinical carcinoma of the cervix.* These patients are those with carcinoma-in-situ or early invasive carcinoma. They are younger than those with clinical cervical carcinoma and usually have no abnormal symptoms. Suspicious or malignant cells are found on routine cytological screening. Cone biopsy or less frequently, punch biopsy preferably with the help of a colposcope will obtain the tissue necessary for histological diagnosis. The diagnostic sequence is:—

TABLE I

5 YEARS SURVIVAL AMONG PATIENTS TREATED FOR CARCINOMA OF THE CERVIX

RESULTS FROM 116 CLINICS OF 25 COUNTRIES (1963)

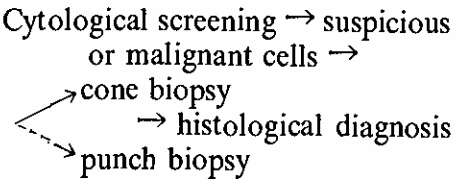
	Patients Treated (91.1 per cent of All Cases Seen)	Alive 5 Years Without Evidence of Disease	5 Years Apparent Cure Rates in per cent
Stage I	15,185	11,372	74.9
Stage II	23,345	12,364	53.0
Stage III	19,656	5,935	30.2
Stage IV	3,590	243	8.1
	61,776	29,962	48.5

After Jeffcoate, T.N.A., 1967.

TABLE II

Hospital Admissions (1954-1958)			Biopsies (1950-1961)	
Rank	Site	% All Cancers	Site	% All Cancers
1	Cervix uteri	18.5	Cervix uteri	13.2
2	Stomach	12.2	Nasopharynx	12.9
3	Lung	10.8	Stomach	6.2
4	Buccal cavity and nasopharynx	8.0	Oesophagus	5.5
5	Oesophagus	6.9	Breast	5.0
6	Liver	6.8	Skin	4.8
7	Breast	4.4	Lung	4.4
8	Leukaemia	4.2	Rectum	3.8
9	Rectum	3.4	Liver	3.2
10	Colon	2.5	Corpus uteri	2.3
	TOTAL CANCERS	7,131		7,684

After Shanmugaratnam and Muir, 1967.



To make the diagnosis of early pre-clinical cervical carcinoma we require cytological screening services and adequate pathology facilities to process and interpret cone biopsies which are usually performed. However, the greatest obstacle is to persuade women of high risk to come for regular cytological screening. These are those who lack the education to understand preventive health measures and are too pre-occupied with household chores and their many children. They fail to see why they should attend regularly for a vaginal smear examination.

The diagnosis of carcinoma-in-situ of the cervix is thus much more expensive and time-consuming than the diagnosis of clinical carcinoma. The question is how worthwhile is it to do so?

THE NATURE OF CLINICALLY INVASIVE CERVICAL CARCINOMA COMPARED WITH CERVICAL CARCINOMA-IN-SITU

The aim of the study was to illustrate the clinical features of a group of patients with clinical carcinoma of the cervix and another group with carcinoma-in-situ. There were 34 patients in each group made up of 31 Chinese, 2 Indians and 1 Malay. The 34 patients with clinical cervical carcinoma were selected from a group of 38 patients treated at the University Hospital, Kuala Lumpur.[7] The 34 with carcinoma-in-situ comprised 32 patients from the Kandang Kerbau Maternity Hospital, Singapore[5] and 2 patients from the University Hospital, Kuala Lumpur.[7]

Age (Table IV)

Patients who had clinical carcinoma of the cervix were on the whole older than those with carcinoma-in-situ. The average age of patients with clinical carcinoma was 50 years while that of patients with carcinoma-in-situ was 40 years. Two-thirds of the clinical carcinoma patients were between 45-59 years of age while two-thirds of the carcinoma-in-situ patients were between 30-44 years.

Years Married (Table V)

Two-thirds of patients with clinical carcinoma were married for 25 years or more while two-thirds of those with carcinoma-in-situ were married for less than 25 years. This is partly due to the different age incidences of these two conditions.

Symptoms (Table VI)

All the patients with clinical carcinoma had abnormal symptoms. Abnormal vaginal bleeding accounted for 75 per cent of the symptoms and post-menopausal bleeding was the commonest. Among the patients with carcinoma-in-situ one-third had no symptoms. The symptoms present in the remaining two-thirds of the patients were not due to the carcinoma-in-situ lesion.

Symptoms and Stage of Disease Among the Clinical Carcinoma Patients (Table VII)

The majority of patients who had post-menopausal bleeding or irregular bleeding were found to have Stages III or IV of the disease. Post coital bleeding tended to be found in those with Stages I or II. The one patient who had unilateral swelling of the leg had a Stage IV disease with pelvic neoplastic lymphatic obstruction.

Duration of Symptoms *vs* Stage of Disease (Table VIII)

Of the 34 patients with clinical cervical carcinoma 6 (18 per cent) were in Stage I, 14 (41 per cent) were in Stage II and 14 (41 per cent) were in Stages III or IV. When the duration of symptoms was 6 months or less two-thirds of these patients had Stages I and II of the disease. When the duration of symptoms was between 7-12 months, two-thirds had Stages III and IV of the disease. This suggests that the longer the duration of abnormal symptoms the more advanced the disease.

While no firm conclusions can be drawn from the above comparative study between patients with clinical carcinoma of the cervix and carcinoma-in-situ as the numbers examined were small, their features do support clinical impressions. Thus they can be used as pointers to indicate the solution to the problem of cervical cancer.

DISCUSSION AND RECOMMENDATION

There is ample evidence from which to conclude that clinical carcinoma of the uterine cervix is the commonest malignant tumour in Singapore and West Malaysia. The disease is usually diagnosed in the late stages, about 20

TABLE III

Incidence of Different Types of Cancer in Different Populations: Annual Rates Per 100,000 Persons Aged 35-64 Years, Standardised for Age (Male Rates Except for Breast and Cervix Uteri) After R. Doll 1969

Population	Naso-pharynx	Stomach	Lung	Breast	Cervix Uteri
Singapore (Chinese)	35.9	29.5	24.6	18.9	52.5
Japan, Miyagi	1.5	158.3	22.6	33.4	53.9
India, Bombay	—	17.3	25.6	45.7	62.3
England and Wales (S. Metropolitan)	0.9	30.7	128.4	103.4	26.6
U.S.A. (N.Y. State)	1.0	16.9	65.0	103.2	32.9
Africa (Nigeria Ibadan)	0.7	21.9	3.1	41.4	52.6
Europe (Sweden)	1.3	32.5	29.4	96.4	43.7
New Zealand	0.6	29.5	64.5	103.3	35.8

TABLE IV

Age	Number of Patients	
	Carcinoma Cervix	Carcinoma-in-situ
25-29	—	3
30-34	2	4
35-39	3	12
40-44	3	7
45-49	9	5
50-54	4	—
55-59	8	3
60-64	2	—
65-69	3	—
TOTAL	34	34

TABLE V

Years Married	Number of Patients	
	Carcinoma Cervix	Carcinoma-in-situ
0-4	—	1
5-9	—	2
10-14	1	2
15-19	4	8
20-24	7	10
25-29	6	5
30-34	3	—
35-39	6	2
40-44	5	1
45-49	—	—
50 years and over	1	—
Not stated	1	3

TABLE VI

Symptoms	Number of Patients	
	Carcinoma Cervix	Carcinoma-in-situ
Nil	—	13
Post menopausal bleeding	11	2
Vaginal discharge	4	5
Irregular vaginal bleeding	8	4
Blood stained vaginal discharge	1	—
Post-coital bleeding	7	4
Swelling leg	1	—
Prolonged period	1	—
Frequent periods	—	1
Irregular periods	—	2
Abdominal pain	—	1
Infertility	—	1
Not stated	1	1
	34	34

TABLE VII

CLINICAL CARCINOMA CERVIX—SYMPTOMS *vs* STAGES

Symptoms	Stages							
	I	II(V)	II(P)	II(P+V)	III(V)	III(P)	III(P+V)	IV
Post menopausal bleeding	2	—	2	—	—	3	4	—
Irregular vaginal bleeding	1	1	1	4	—	—	1	—
Vaginal discharge	1	—	1	—	—	1	1	—
Blood stained vaginal discharge	—	—	—	—	—	1	—	—
Post-coital bleeding	2	3	—	1	—	1	—	—
Swelling right leg	—	—	—	—	—	—	—	1
Prolonged period	—	—	—	1	—	—	—	—
Not stated	—	—	—	—	1	—	—	—

TABLE VIII

CLINICAL CARCINOMA CERVIX—STAGE OF DISEASE *vs* DURATION OF SYMPTOMS

Stage		Duration in Months					
Type	Number	0-6	7-12	13-18	19-24	24+	Not Stated
I	6	5	1	—	—	—	—
II (V)	4	2	—	—	—	2	—
II (P)	4	4	—	—	—	—	—
II (P+V)	6	4	2	—	—	—	—
III (V)	1	—	—	—	—	—	1
III (P)	6	3	3	—	—	—	—
III (P+V)	6	3	3	—	—	—	—
IV	1	1	—	—	—	—	—

per cent in Stage I, 40 per cent in Stage II and 40 per cent in Stages III and IV.[8] Prognosis after treatment is poor. Out of 157 patients with clinical carcinoma of the cervix treated at the Kandang Kerbau Maternity Hospital, Singapore in 1962 and of the 108 with follow up, only 21 per cent survived 5 years free of the disease.[28] This relative cure rate is less than half of what can be expected.[18] A second line of evidence indicates that the prevalence of carcinoma-in-situ of the cervix is low. Routine cytological screening of 10,907 obstetrical and gynaecological patients at the Kandang Kerbau Maternity Hospital, Singapore[5] and 3,800 similar patients at the University Hospital, Kuala Lumpur[7] showed a pick-up rate of 2-4/1,000 patients. This is a low pick-up rate as it is similar to that in the United States and United Kingdom where the incidence of carcinoma of the cervix is not so high as here. Thus the problem of carcinoma of the uterine cervix in Singapore and West Malaysia can be summed up as follows. This is the commonest malignant tumour and the majority of patients are diagnosed in the late stages of the disease. This has resulted in high mortality and morbidity rates. The prevalence of carcinoma-in-situ on the other hand is relatively low.

What are the measures that can be adopted to try and solve this problem? Earlier diagnosis of clinical carcinoma of the cervix should be the main emphasis. Medical personnel, i.e. general practitioners, nurses, midwives and health workers should be alerted to send women especially over the age of 40 years who have abnormal vaginal bleeding for immediate full gynaecological investigation. The education of the lay public concerning the abnormal symptoms suggesting cervical cancer can be effected through health education in schools and the mass media. With earlier diagnosis treatment will result in improved prognosis for the patients. What is the place of cytological screening? This method is best used in the screening of the married and parous female population to detect principally carcinoma-in-situ. Motivation of those who are at risk to come for regular cytological screening is most difficult to achieve. Cytology and supporting pathology services require money and trained personnel. Moreover, the returns in the number of patients with carcinoma-in-situ diagnosed after much trouble are likely to be small compared to the numbers of patients with clinical carcinoma of the cervix. Also, it is still being debated as to what proportion of carcinoma-in-fitu of the cervix will become invasive carcinoma is left untreated. Cytodiagnosis would thus seem to have a limited place at present in the solution of the cervical cancer problem in Singapore and West Malaysia.

The earlier diagnosis of clinical carcinoma of the cervix should be the measure to be urgently implemented. Patients with suspicious symptoms of the disease should be immediately referred for full gynaecological investigation. Adequate therapy can then be instituted once the diagnosis is confirmed histologically. Together with the above, cytological services can be commenced and gradually expanded. Carcinoma-in-situ of the cervix will be diagnosed and treated thus removing one source of clinical invasive carcinoma. One other result of the large scale cytological screening of women is that more early cases of clinical cervical carcinoma will also be diagnosed. With the implementation of the above measures it can be hoped that in the next 10-15 years the present distressing magnitude of the cervical cancer problem, both in its high prevalence rate and advanced stage of the disease, will be much reduced.

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