

CYTOLOGICAL ASSESSMENT OF HOST AND TUMOUR FACTORS IN CARCINOMA CERVIX

by

K. PREMA,* M.D., M.A., M.S.

and

D. J. REDDY,** M.D., F.A.M.S., M.R.C. (Path.)

Of all the genital tract malignancies cancer cervix is the commonest and the most exhaustively and extensively investigated one. Ever since systematic study of carcinoma cervix was undertaken, clinician knew that different types of growths behave differently—

- that endocervical and endophytic growths grow slowly but prognosis was bad because patients report late as symptoms were minimal.
- that exophytic growths grow so rapidly that even though patients came to the physician within a short while after appearance of symptoms treatment was difficult due to tendency for rapid growth and distant metastases.
- and that there is a broad middle spectrum between these two well defined extremes to which majority of hyperthrophic nodular tumours belong.

Ever since Broder's classification, pathologists and clinicians are aware that behaviour of the tumour depends upon the degree of anaplasia graded histopathologically. Degree of anaplasia could also

be assessed with fair amount of accuracy by cytology.

In recent years vaginal cytology has been extensively used for early detection of cervical carcinoma but its potentialities in studying underlying vital host tumour factors have not been fully utilised. Work of Graham (1954) and Wachel (1956) suggest that study of sensitisation response and karyopyknotic index in the pre-treatment smears may be two fairly accurate indices for assessing the 'host factor'. Very few attempts have been made to put clinical, histopathological and cytological data of women together to find out whether one could arrive at a better understanding of the tumour and its behavioural pattern.

Material and Methods

One hundred and seventy-nine cases of carcinoma cervix comprise this study. After obtaining clinical history and general examination a dry unlubricated Sim's speculum was gently inserted into the vagina. Cytological smears were taken

(a) from the uninvolved portion of the vagina to assess karyopyknotic index (K.P.I.) and sensitisation response (S.R.).

(b) from the surface of the growth where infection was minimal. The surface smear was taken very gently in order to minimise bleeding and consequent dilution of malignant cells.

*Senior Research Officer, Indian Council of Medical Research, New Delhi.

**Director, Sri Mullapudi, Venkataramanna Memorial Hospital and Research Centre, Tanuku.

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A punch biopsy was taken from growing edge of the tumour and before fixing the material in formalin an impression smear was made from the inner surface of the biopsy material. The clinical assessment of the type and the stage of growth was made by speculum, bimanual pelvic and rectal examinations.

Observations

Nearly 90% of the patients were between 30-60 years of age, youngest was 20 years and oldest 76 years (Table I). All were married for 10 or more years (Table II). Majority had 3 or more children (Table III). Irregular bleeding and offensive blood stained discharge were the common complaints and duration of symptoms was usually between 1-2 years.

It is disheartening to note that only 2 cases were in stage I and 27 in stage II. Majority conformed to stage III and no less than 19 women (II%) belonged to stage IV (Table IV).

Type of growth clinically assessed was endocervical in 21, endophytic in 23, exophytic in 39 and nodular or hypertrophic in 96.

One hundred and seventy-six of them were of epidermoid carcinoma in 176 and 3 were adenocarcinoma.

Sensitisation response (Fig. 1) was assessed to be poor in 99, borderline in 26 and good in 54. Occurrence of vacuolated parabasal cell did not bear any relation to age, or menopausal or menstrual status of the patient.

Surface smears from the growth always showed malignant cells. Many investigators have reported that in about 25% of cases of invasive carcinoma smears did not reveal malignant cells. We found that false negatives do occur if smears were taken blindly, but if growth was visualised, and smears were taken gently from the least necrotic area without provoking bleeding, malignant cells were invariably seen. Impression smear taken from the

TABLE I
Age

Age	20.29	30.39	40.49	50.59	60.69	70 & above
No. of cases	4	41	50	64	18	2

TABLE II
Marital History

None of our patients were unmarried

No. of years of married life	10.20	20.30	30.40	40.50	50 & above
No. of cases	34	69	33	24	19

TABLE III
Parity

No. of children	0	1	2	3	4	5	6	7	8	9	10	11	12
No. of cases	1	8	12	17	26	32	26	21	15	10	6	3	2

TABLE IV
Clinical Stage

Stage 0	Stage I	Stage II	Stage III	Stage IV
1	2	27 (early & late)	131	19

inner aspect of the biopsy showed great number of malignant cells in clusters but the impressive bizarre forms are seldom seen. Differentiated malignant cells (Fig. 2 and 3) were predominant in 75 cases and anaplastic cells dominated the picture in 104 (Table V). By correlating clinical and cytological data it is observed that majority of women with endophytic and endocervical growth had poor S.R. and

well differentiated malignant cells in the smears. Patients with exophytic growth often had a high SR and exfoliated cells were anaplastic (Table VI).

The most common nodular growth was seen when patients had anaplastic malignant cells in presence of poor SR, differentiated cells in presence of high S.R. or either type of malignant cells with border line S.R. (Table VII).

TABLE V
Predominant Type of Malignancy Cells in Cytology Smear

Predominantly differentiated cells	Large	54	}	75
	Small	21		
Predominantly anaplastic cells				104
<i>Type of malignant cells seen:</i>				
1. Differentiated malignant cells				
(a) Third type differentiated	..			124
(b) Fiber cell	..			32
(c) Tadpole cells	..			19
(d) Owl eyed cells	..			16
(e) Multinucleated cells	..			34
2. Anaplastic cells	..			178

TABLE VI
Endophytic Endocervical Vs Endophytic Growth SR and Type of Malignant Cells

Type of growth	S.R.			Malignant cells		Anaplastic
	Low	Border line	High	Differentiated		
				Small	Large	
Endophytic growth	20	3	0	5	16	2
Endocervical growth	19	2	0	4	15	2
Exophytic growth	2	3	34	3	2	34

TABLE VII
Nodular Growths S.R. and Type of Malignant Cells

Total No. of cases:	96	
1. Low SR	Anaplastic cells	52
	Differentiated cells	6
2. Border line SR	Anaplastic cells	10
	Differentiated cells	8
3. High SR	Differentiated cells	18
	Anaplastic cells	2

Discussion

From a small preliminary study like this, even tentative conclusions cannot be drawn. But it may be reasonable to speculate whether cytological assessment of sensitisation response and degree of anaplasia may help one to understand the behavioural pattern of cancer cervix cases.

The behavioural pattern of growth which after all is the resultant of host and tumour factor may be explained by a correlation between degree of anaplasia of the tumour and host tissue response judged by SR and KPI.

Patients with poor SR react to the tumour by a tendency for fibrosis. These attempts succeed to a greater or lesser degree, depending upon the degree of anaplasia of the tumour. Rate of growth is slow. Malignancy literally claws its way through a fibrosed parametria and adjacent structures. Embolic spread, either lymphatic or blood borne, is uncommon. This explains many advanced malignancies where no lymphnode deposits occur but patient succumbs due to erosion of vessel or uremia due to fibrosis strangulating ureters.

In this series slow growing endocervical and endophytic growths almost invariably had low SR and had predominantly differentiated type of tumour. Diametrically opposite to this group is the high SR patients. There is little or no attempts at fibrosis. The tumour is highly vascular, depending upon degree of anaplasia hypertrophic or exophytic. There are no attempts at localisation of tumour. Lymphatic and even blood borne spread occurs early in the course of the disease. Probably most of 15-20 cases of Stage I and 25-30% of Stage II cases showing lymphnode metastases belong to this group. These patients come to the

clinician within a short time after the onset of symptoms but even by that time the tumour has spread far and wide, they succumb to massive haemorrhage from the growth or distant metastases.

In this series exophytic tumours were seen in patients whose smears showed high SR and anaplastic malignant cells. Only 2 cases of distant metastases, one in the liver and other in the pelvic bones had large exophytic growth where smear showed high S.R. and anaplastic malignant cells.

As in any other type of classification the extremes i.e. high S.R., anaplastic tumour combination and low S.R. differentiated tumour combination are well defined with a broad intermediate spectrum where each type merges on to the other.

Summary and Conclusion

One hundred and seventy-nine cases of carcinoma cervix were studied.

90% of the patients were between 30-60 years of age, youngest was 20 and oldest was 76 years. All were married for 10 or more years. Majority had 3 or more children. Irregular bleeding and offensive blood stained discharge were the common complaints and duration of symptoms was usually between 1-2 years. It is disheartening to note that there were only 2 cases in stage I and 27 in stage II. Majority were having stage III growth and no less than 19 women (11%) belonged to stage IV.

Type of growth clinically found was endocervical in 21, endophytic in 23, exophytic in 39 and nodular or hypertrophic in 96. One hundred and seventy-six of them were epidermoid carcinoma and 3 were adenocarcinoma.

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Surface smears from the growth always showed malignant cells. Differentiated malignant cells were predominant in 75 cases, anaplastic cells dominated the picture in 104. On correlating clinical and cytological data we found that majority of women with endophytic and endocervical growth had poor S.R. and well differentiated malignant cells in the smears. Patients with exophytic growth often had a high S.R. and exfoliated cells were anaplastic.

The most common nodular growth was seen when patients had anaplastic malignant cells in presence of poor S.R. differentiated cells in the presence of high S.R. or either type of malignant cells with border line S.R.

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References

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See Figs. on Art Paper II-III