EVALUATION OF EXFOLIATIVE CYTOLOGY IN 28219 WOMEN BY CERVICAL SMEARS†

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Introduction

An increase in longevity in the population has been paralleled by an increasing incidence of malignancy. Carcinoma of cervix and breast account for the most common cancers in the female. In India, carcinoma of cervix is more common than carcinoma of breast, while in Western Countries Carcinoma of breast is more common.

According to International cancer centre at Kanyakumari, the annual incidence is 200/100,000 for the women above the age of 21 years.

The potential of vaginal and later of cervical exfoliative cytology was first described in 1928 and 1943 by Papanicolaou. According to Stunford (1967) death rate from cancer of the cervix have been reduced by 50%. This encouraging results of early detection, prompt therapy and close follow-up can be due to cytological screening. The effective role of cytology in the detection of cancer cervix in asymptomatic group is beyond dispute.

The primary purpose of this paper is to present the ability of exfoliative cytology to detect malignancies of the female genital tract, with emphasis on early diagnosis.

Material and Methods

28,219 smears from Indian women were examined at Cytology Department of Gujarat Cancer and Research Institute, Ahmedabad, during the years, January 1974 to December, 1976.

This includes, three groups of patients. The first group comprises of all the cases with or without gynecological complaints attending M. P. Shah Cancer Hospital. The second group comprises of patients from General Hospitals of Ahmedabad city, who are with gynecological complaints. The work was started in Civil Hospital, Ahmedabad in January 1974 but in other hospitals, it has started in 1976 only. The third group comprises of population from the rural areas where patients attending camps at various centres.

The detection of cancer cells either shed or scraped forms the base of cytologic diagnosis. The method of collection is simple but important. Accuracy of the method is higher if both cervical and posterior vaginal fornix smears are collected and in certain conditions, like erosion, suspicious cervix etc. cervical scrapping is important. But at our institute and at all other centres included, due to work load, the smears were taken for one year by swabs and in later two years, smears by spatula were taken. These were taken from the cervix only.

The smears were immediately fixed by dry fixative and were stained by modified papanicalaou method. The smears were mounted in D.P.X.

For the recognition of cancer cells, all conventional ceriteria laid down by I.C.M.R. were used. Smears were classified as follows: Smears with infection:

1. Mild dysplasia
2. Moderate dysplasia
3. Severe dysplasia
4. Carcinoma in situ
5. Positive

Results

Classification of 28,249 smears is shown in Table I.

salvage for detection and diagnosis of early cancer and its precursors. Besides these, collection of relevant aetiological data and analysis of significant factors operative in our population appears to be worth while.

The present study consists of three types of patients. First were those presenting themselves with symptoms pertaining to cancer, either gynecological viz. abnormal menstrual histories, vaginal discharge, cervical erosions, bleeding per vaginum, leukoplakia, etc. or non-gynecological complaints.

The second group cases were those having gynecological symptoms, but not definitely pertaining to cancer.

TABLE I
Classification of 28219 Smears

	MP Shah cancer hospital	General hospitals	Rural areas
Total No. of women analysed	6212	17809	4198
No. of women with negative smears	314	826	254
No. of women with mild dysplasia	968	2138	567
No. of women with moderate dysplasia	249	308	73
No. of women with severe dysplasia	63	51	7
No. of women with carcinoma in situ	59	33	3
No. of women with positive smears	978	120	20
No. of women with inflammation	2993	13825	3075
No. of women with unsatisfactory smears	588	508	199

Table II shows classification of dysplastic smears and incidence of cancer per thousand cases examined. It also shows the diagnostic value of exfoliative cytology in asymptomatic group of patients.

Tables III, IV and V shows classification of smears in relation to age, parity and religious background.

Discussion

It is generally emphasised that cytological examination is the best type of

The third group was that of asymptomatic patients. So the data varies in three groups of patients. Tables I and II show that incidence of dysplasia and positive smears is higher in the first group of patients than the other two groups. Mild dysplasia is common with other two groups also, but in these two groups incidence of infection is also higher and this mild dysplasia may be due to underlying infection.

In the first group of patients from M. P.

TABLE II
Incidence of Dysplasia and Smear Classification

Centre from which smears were received	No. of cases	No. of cases with clinical diagnosis of cancer	Mild Dysplasia	Moderate Dysplasia	Severe Dysplasia	Carci-noma in situ	Positive	*No. of cases diagnos-ed as carcinoma only with cytology	Incidence of cancer per thousand cases examined
MP Shah Cancer Hospital	6212	887	968 (15.46%)	249 (4.00%)	63 (1.01%)	59 (0.95%)	978 (15.74%)	150	166.9
General Hospitals	17809	20	2138 (12.00%)	308 (1.72%)	51 (0.28%)	33 (0.18%)	120 (0.67%)	133	8.6
Rural areas	4198	—	567 (13.50%)	73 (1.73%)	7 (0.16%)	3 (0.07%)	20 (0.47%)	23	5.5
Total	28219	907	3673	630	121	95	1118	306	42.9

*Cases diagnosed as carcinoma in situ and positive are considered as positive.

TABLE III
Age Group and Cytological Findings

Age in years	Total No. of cases	Mild Dysplasia		Moderate Dysplasia		Severe Dysplasia		Carcinoma in situ		Positive	
		No.	%	No.	%	No.	%	No.	%	No.	%
21-30	9884	802	8.11%	130	1.32%	8	0.08%	3	0.03%	30	0.30%
31-40	11288	1570	13.91%	228	2.02%	29	0.25%	8	0.07%	56	0.50%
41-50	4365	828	18.97%	122	2.79%	30	0.69%	45	1.03%	519	11.89%
51-60	1838	230	12.51%	80	4.35%	31	1.69%	21	1.14%	387	21.06%
61 and above	844	143	16.94%	70	8.29%	23	2.73%	18	2.13%	126	14.93%

TABLE IV

Parity and Cytological Findings

Parity	Total No.	Mild Dysplasia		Moderate Dysplasia		Severe Dysplasia		Carcinoma in situ		Positive	
		No.	%	No.	%	No.	%	No.	%	No.	%
Nullipara	2839	95	3.35%	48	1.69%	7	0.25%	5	0.18%	45	1.59%
1-3	9497	1083	11.4%	106	1.12%	35	0.37%	32	0.34%	310	3.27%
4-6	10958	1650	15.06%	305	2.78%	63	0.57%	43	0.39%	608	5.55%
7-10	3634	630	17.33%	105	2.89%	10	0.28%	8	0.22%	101	2.78%
More than 10	1301	215	16.53%	66	5.07%	6	0.46%	7	0.54%	54	4.15%

Shah Cancer hospital, out of 6212 women screened, 59 showed smears with carcinoma in situ changes and 978 showed positive smears giving total incidence of positive cases 166.9 per thousand population. The incidence is compared to other series from India. Sahiar *et al* (1967) showed 58.6/1000 rate from Tata Memorial Hospital. This being the Cancer Hospital the rate is higher than other population studied and many a times patient comes with advanced lesions.

Rao *et al* (1973) studied 405/1000 rate. Rates are different due to different population screened.

In the second group of patients from General Hospitals, out of 17809 smears screened, 33 (0.18%) were of carcinoma in situ and 120 (0.67%) were positive giving incidence rate of 8.6 per thousand population. Sahiar *et al* (1967) showed 24.3 per thousand populaion rate from General Hospitals.

In the third group of patients from rural areas, incidence rate is 5.5 per thousand population. These are the patients who do not have gynecological complaints.

The combined incidence from all the three sources is 42.9 per thousand population. Sahiar *et al* (1967) showed rate of 40.2 per thousand population. They have selected cases from Cancer Hospital, General Hospitals Cancer Detection Centres and private physicians.

Table II also shows the number of cases, missed by clinical examination and diagonosed by cytological examination. Total 306 cases from 1213 patients were missed by clinical examination.

Table III shows incidence of dysplasia in relation to age. This shows that maximum number of positive smears were between 51 to 60 years, followed by 61 years and above and 41 to 50 years. Rao *et al* (1973) also showed highest incidence

of positive smears in women above 60 years followed by 51 to 60 years. Rama Kanta Das (1970) showed maximum positive cases between 31 to 40 years, while Ahuja and Reddy (1963) showed between 46 to 49 years.

Incidence of dysplasia is common in age group of 41 to 60 years and above 60 years. It is less common between 21 to 40 years. Rao and Purandare (1973) also showed similar findings.

It is observed that the significant increase in the dysplasias as well as malignancy occurs with increase in parity. Maliphant (1949) stated that child birth trauma and subsequent cervical infection have some bearing in the aetiology of this cancer, but Carscanden (1962) showed that 25% of stump carcinomas are in sterile women. In the present series, the highest incidence of positive smears is in 4 to 6 para women followed by women having more than 10 children. Incidence of dysplasia is also high in multipara than nullipara or 1 to 3 para women. Rao et al (1973) also noticed similar findings (5 to 7 para).

The incidence is high among Hindus as compared with other group but this is insignificant statistically as Hindu population is much higher than that of the rest. Amongst the Hindu population 4.70% of patients showed positive smears.

Out of 1213 carcinoma in situ and positive smears considered as positive, 1169 patients were Hindus accounting for 96.38% rate. Muslims were 21 accounting for 1.71%, Sindhis 13 giving rate of 1.1%, Christians 5 with rate of 0.42% and unknown with rate of 0.42%.

Comments

Cytology is a most practical method for early detection of dysplasias and malignancy. So this method should be given more emphasis in the routine Gynecological and Obstetric practice.

In the present study, out of 1213 carcinoma in situ and smears, considered as positive, 306 cases were missed by clinical examination, and these cases were diagnosed by cytology only. Thus, cytology is most important in asymptomatic group of patients and can give rewarding results, if treated in time. Even the detection of dysplasia of various degrees can prevent invasive lesion, if treated in time.

The incidence rate per thousand population is different in different group of population studied. The rate is high in M. P. Shah Cancer Hospital, 166.9% per thousand. But this might be due to the fact that patients are not aware of their lesion and they are not having their routine gynecologic check up, and these cases are coming in late stages where it is clinically advanced lesion. If the cytology of patients is included, the rate is naturally going to be high.

From the above facts, it is concluded that if the patients are aware of their routine gynecologic check-up and cytological examinations, more and more cases will be diagnosis in early stages or precancerous lesions. These patients if treated at this stage, they will be benefited.

Summary

During the years, January 1974 to December, 1976, total 28219 smears were screened at the Cytology Department of the M. P. Shah Cancer Hospital, Ahmeda-

bad. Incidence of displastic smears and positive smears in relation to age, parity and religious backround is discussed. The incidence of cases missed by clinical examination and diagnosed by cytological examination is discussed.

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