# EXFOLIATIVE CYTOLOGY AND ITS ROLE IN THE DIAGNOSIS OF CERVICAL CANCER

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Exfoliative cytology in the diagnosis of uterine and cervical cancer was first described in detail by Papanicolaou in 1949, and has been gaining popularity on account of the easy procedure and inexpensiveness. It has been used for mass screening of women which is advocated for all women above the age of 30 years. Recently, Wahi et al (1962) and Ferguson (1961) have studied the incidence of positive smears below the age of 30 years and in teenage girls and they have come to the conclusion that women below 30 years of age should not be excluded, as precancerous lesions are more prevalent in younger age groups (Wahi et al). Preceding epithelial atypical lesions, like basal cell hyperplasia, are present in younger women.

According to Wahi et al (1962), early diagnosis by vaginal cytology should be applied to all women above 30 years of age and to those younger ones who have borne children (Ferguson, 1961).

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*Material and Methods*

Our material consisted of 447 patients taken from the sterility clinic, unhealthy cervix clinic and gynaecological out-patients. The selection of patients was in consecutive succession as they came to the out-patients.

The smears were taken from the cervical canal directly, by means of cotton swab applicators, rolled gently over the clean glass microslides and immediately dropped into the fixative without allowing the smear to dry. The fixative is a mixture of equal parts of ether and 95% ethanol. After fixation for at least half an hour, the smears were stained by haematoxylin and eosin. For comparison some of these smears were also stained by Papanicolaou's technique.

The smears were put into the following categories:

(1) Negative. (2) Probably benign. (3) Suspicious or 'dyskaryosis'. (4) Probably malignant. (5) Malignant.

TABLE I

*Age Distribution of Cases Screened for Malignancy*

| Age in years | No. of cases | Percentage of incidence |
|---|---|---|
| 10-19 .. .. | 73 | 16.36 |
| 20-29 .. .. | 220 | 49.32 |
| 30-39 .. .. | 110 | 24.66 |
| 40-49 .. .. | 31 | 6.95 |
| 50-59 .. .. | 10 | 2.24 |
| 60-69 .. .. | 1 | 0.22 |
| 70-79 .. .. | 1 | 0.22 |
| Not known .. | 1 | |

Our youngest case was 14 years old and the oldest one was 75 years old. The average age was 26.25; 65.98% of the cases were below 30 years of age and 73.98% of the patients fell into the age group of the 3rd decade.

TABLE II

*Analysis of Cervical Smears in 447 Women*

| Types | No. of cases |
|---|---|
| Type I .. .. .. .. | 404 |
| Type II .. .. .. .. | 21 |
| Type III .. .. .. .. | 10 |
| Type IV .. .. .. .. | 6 |
| Type V .. .. .. .. | 6 |

Out of the 447 cases, biopsies from the cervix were taken by punch biopsy forceps, cold conization and trachelotome biopsy. The cases are analysed below:

Six cases of Type I smear showed chronic cervicitis in 5 cases and normal cervix in 1 case. One case showed squamous cell carcinoma of the cervix infiltrating the uterus (Figs. 1, 2, 3, 4).

Fig. 1
Photomicrograph illustrating cervical smear showing a typical squamous epithelial cells. (H & E x 100).

During this period we could find 3 cases of adenocarcinoma of the

TABLE III

*Analysis of Biopsies done in Types II, III, IV and V Cases*

| | | |
|---|---|---|
| TYPE II | Chronic cervicitis .. .. .. .. .. .. | 1 |
| | Normal .. .. .. .. .. .. .. | 1 |
| TYPE III | Chronic cervicitis .. .. .. .. .. .. | 1 |
| | Erosion cervix .. .. .. .. .. .. | 1 |
| | Invasive squamous cell carcinoma .. .. .. .. | 1 |
| | Biopsy cervix showing malignant cells .. .. .. | 1 |
| TYPE IV | Epidermidisation cervix .. .. .. .. .. | 1 |
| | Squamous metaplasia .. .. .. .. .. | 2 |
| | Endometrium showing malignant cells .. .. .. | 1 |
| TYPE V | Squamous cell carcinoma (vagina) .. .. .. .. | 1 |
| | Adenocarcinoma body of uterus .. .. .. .. | 3 |

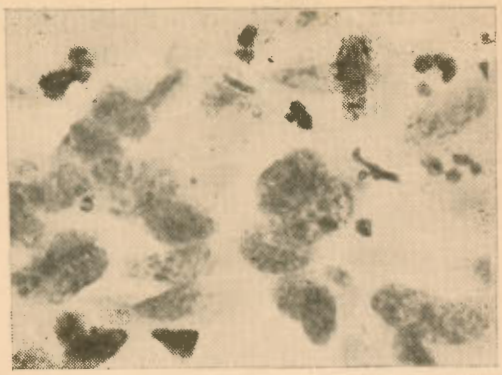

Fig. 2
Photomicrograph illustrating cervical smear of the same case showing "suspicious" cells. (H & E x 1000).

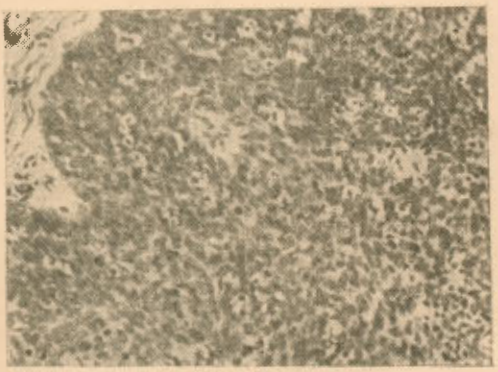

Fig. 3
Photomicrograph illustrating cervical epithelium showing a typical epithelium. (H & E x 200).

Fig. 4
Photomicrograph illustrating tumour emboli in the uterine lymphatic vessels of the same case. (H & E x 100).

uterine body. One was a suspected case in which the endometrial scraping was negative, in the second case there was a mass in the pelvis involving the uterus, ovaries, tubes, etc. In the third case carcinoma of the rectum was present (which was diagnosed after operation) with secondaries in the uterus.

Our series of cases is very small, and from the total number of malignant conditions we were able to diagnose, we think every woman above the age of 20 years should be screened for malignancy. Early marriages in India are very common and we agree with Wahi and Ferguson that if a girl is old enough for a vaginal examination, she is old enough for full pelvic investigation. We have also found that haematoxyline and eosin stain is equally reliable as far as the diagnosis of malignant cells are concerned.

*Summary*

Exfoliative cytological study of 447 cases has been done and the results have been analysed.

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