

# CYTOLOGY, COLPOSCOPY AND COLPOSCOPICALLY DIRECTED BIOPSY IN SCREENING OF CERVICAL EROSIONS\*

(A study of 300 cases)

By

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## SUMMARY

Cytology, Colposcopy and cervical biopsy have their own merits and demerits in detecting preclinical preinvasive carcinoma of the cervix. Hence combined use of these can detect early cases missed by any single method.

300 cases of clinically detected cervical erosions were screened by simultaneous Cytology, colposcopy and Colposcopically directed biopsy from suspicious areas. Colposcopy and guided biopsies revealed 30 cases of dysplasias missed by cytology alone, and also detected 2 cases of carcinoma in situ, thus confirming the value of combined use.

### Introduction

Various methods are available for screening lesions of the cervix, such as cytology, Colposcopy and Colposcopically directed biopsy. The ultimate goal is to diagnose preinvasive preclinical carcinoma of the cervix. All the three methods have their own place in the armamentarium of the clinician. They are complimentary to each other and the combined diagnostic procedures are superior to any individual technique.

Taking into account the combined

value of these techniques, we screened 300 cases of clinically detected cervical erosions at the out patient department of L.T.M.G. Hospital, Sion, Bombay-400 022, India.

### Material and Methods

Three hundred cases diagnosed as cervical erosion on speculum examination in the out patient department were investigated.

The cytology smears were collected from the posterior fornix and squamo columnar junction using Ayre's spatula. Smears were immediately fixed in ether-alcohol mixture and stained by Papanicolaou technique.

The smears were read as normal, inflammatory, mild, moderate and severe

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dysplasia, carcinoma in situ and invasive carcinoma. The normal and inflammatory smears were classified as typical while dysplasia, carcinoma in situ and invasive carcinoma as atypical smears.

Colposcopy was then performed using a West German Carl Zeiss Colposcope. The colposcopy was done after cleaning the cervix with 3% acetic acid to remove mucus. The colposcopic patterns were classified as original mucosa, ectopy, regeneration and inflammatory (Typical); and leucoplakia, mosaic, true erosion, and uncharacteristic red zone (Atypical).

Colposcopically directed biopsies were taken from all atypical cases from the most suspicious zones. The tissue is fixed in 10% formalin and were stained by H & E stain.

#### Observations

Table I shows the colposcopic findings in 300 cases of cervical erosion. Sixty-eight (22.6%) were classified as typical and 232 (77.4%) as atypical ones.

TABLE I

*Colposcopy Findings in 300 Cases of Cervical Erosion*

Typical (68)	No. (%)
Normal Mucosa	30 (10)
Ectopy	9 (3)
Vaginitis	11 (3.6)
Regeneration	18 (6)
<b>Atypical (232)</b>	
Leucoplakia	122 (46.6)
Mosaic	20 (6.6)
True Erosion	58 (19.3)
Uncharacteristic	32 (10.6)
<b>Total</b>	<b>300 (100)</b>

#### Typical Findings

Normal Mucosa: Thirty (10%) cases revealed normal mucosa with pink colour and smooth surface.

Ectopy: Nine (3%) cases showed ectopic columnar epithelium with grape like appearance.

Vaginitis: Eleven (3.6%) cases showed angry red epithelium suggestive of inflammation.

Regeneration: Eighteen (6%) had columnar epithelium with thin healing squamous epithelium growing from periphery to replace it.

#### Atypical Findings

Leucoplakia: One hundred twenty two (46.6%) showed white patch with or without red dots in the background (ground leucoplakia).

Mosaic Pattern: Twenty (6.6%) revealed mosaic pattern.

True Erosion: Fifty eight (19.3%) revealed true erosion, while Thirty Two (10.6%) showed presence of haemorrhagic erosive zone suspicious of dysplasia.

Table II shows cytology findings in 300 cases of cervical erosion. Typical findings were seen in 220 (73.3%) whereas 80 (26.7%) showed atypical findings such as dysplasia and invasive carcinoma.

TABLE II

*Cytology Findings in 300 Cases of Erosion Cervix*

Typical (220)	No (%)
Normal	58 (19.3)
Non-specific Inflam.	134 (44.6)
Specific Inflam. (Tricho., Candida etc.)	28 (9.3)
<b>Atypical (80)</b>	
Mild Dysplasia	52 (17.3)
Mod. Dysplasia	16 (5.3)
Sev. Dysplasia	2 (0.6)
Invasive Carcinoma	10 (3.3)
<b>Total</b>	<b>300 (100)</b>

Colposcopically directed cervical biopsy was performed in 232 cases of atypi-

cal colposcopy. It showed cervicitis in 102, dysplasia in 82, carcinoma in situ in 2 and invasive carcinoma in 10. In 36 cases biopsy revealed normal histology.

Table III shows colposcopy cytology correlation. Out of 68 cases with typical colposcopic picture 40 showed normal cytology, 26 inflammatory smear and 2 showed mild dysplasia. Among atypical group viz. Leucoplakia, Mosaic pattern etc., cytology showed 10 invasive carcinomas, 2 severe dysplasias, 16 moderate dysplasias. True erosions mostly displayed normal or inflammatory smear.

Colposcopy—histopathology correlation is shown in Table IV.

Histopathology detected one case each of carcinoma in situ in leucoplakia group and mosaic group respectively, which were missed by cytology.

### Discussion

There is no infallible method for screening the cervical lesions. Cytology, Colposcopy and Cervical biopsies have their own advantages and disadvantages in detecting the preinvasive preclinical carcinoma of the cervix.

Hence the combined simultaneous use of all three techniques can pick up early cases which may be missed by any single method.

Erosion of the cervix is one of the most common findings in the out patient department. It may be eversion of the endocervical mucosa or superficial ulceration (true erosion) which may be due to malignancy. In most of the cases it is difficult to differentiate clinically between true erosion and eversion of the

TABLE III  
Colposcopy—Cytology Co-relation

Colposcopy	No.	Cytology						
		Normal	Infl.	Mild Dys.	Mod. Dys.	Sev. Dys.	Ca. situ	Ca. Inv.
Typical	68	40	26	2	—	—	—	—
Atypical								
Leucoplakia	122	—	70	38	12	2	—	—
Mosaic	20	—	10	—	—	—	—	10
True Erosion	58	18	30	6	4	—	—	—
Uncharac.	32	26	6	—	—	—	—	—
Total	300	84	142	46	16	2	—	10

TABLE IV  
Colposcopy—Hispathology Co-relation

Atypical	No.	Normal	Cervicitis	Dysplasia	Ca. situ	Ca. Inv.
Leukoplakia	122	—	80	40	1	—
Mosaic	20	—	6	3	1	10
True Erosion	58	20	16	22	—	—
Uncharac.	32	16	—	16	—	—
Total	232	36	102	82	2	10

endocervical mucosa. In these cases therefore cytology, colposcopy and colposcopically directed biopsy can play an important role to detect early pre-invasive preclinical cervical cancer.

With these facts in mind, we have studied 300 cases of cervical erosion simultaneously by cytology, colposcopy and colposcopically directed biopsy in atypical cases.

Cytology showed atypical smears such as mild, moderate, severe dysplasias and invasive carcinoma in 80 (26.7%), inflammatory smears in 162 (54%) and normal smears in 58 (19.3%).

In a similar study, Saraf *et al* (1985) report, 16% atypical smears and 84% typical smears viz. 8% normal and 76% inflammatory smears. Lulla and Saraiya (1983) report incidence of atypical smears in cervical erosion as 50.6%.

Colposcopic abnormalities were observed in 232 (77.4%) viz. leucoplakia (46.6%), mosaic (6.6%), true erosion (19.3%) etc. Out of 122 leucoplakias 52 (43.5%) showed atypical cytology. Out of 58 true erosions 10 (16.6%) showed atypical cytology. Out of 20 mosaic patterns, 10 (50%) showed atypical smears. Thus cytologic abnormalities were present in 43.5% and 50% cases of leucoplakias and mosaic patterns respectively.

Histopathology showed abnormalities such as dysplasias, carcinoma in situ and invasive carcinomas in 42 out of 122 leucoplakias (i.e. 33%) and 14 out of 20 mosaic patterns (i.e. 70%). It detected two cases of carcinoma in situ which were missed by cytology; thus confirming the value of colposcopically directed biopsy. The frequency of colposcopically directed biopsies in detection of preclinical carcinoma was 5% in our series. It is comparable with those of others viz.

Limberg *et al* (9.8%), Burghardt *et al* (10.08%) and Saraf *et al* (16%).

Theoretically, the only accurate way of evaluating false negative cytology would be to perform conization in all patients even in those with normal cytology findings and to study the one in several sections. Obviously, this cannot be done. The void is filled by colposcopically directed biopsies which can detect those cases missed by cytology.

Simultaneous use of colposcopy results in no significant loss of time because it merely replaces speculum examination. The exact site of biopsy can be spotted reducing the incidence of repeated biopsy. In negative cytology, colposcopy can dispose of suspicious basis of clinical examination, reducing further number of unnecessary biopsies. Further, colposcopy can enable us to perform target cytology smears from suspicious areas.

To summarise; best results in early detection of preclinical preinvasive carcinomas could be obtained by combined use of simultaneous cytology, colposcopy and colposcopically directed biopsies rather than any individual diagnostic technique. Routine use of these techniques in screening cervical erosions will go a long way in early detection of preinvasive carcinoma of the cervix.

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