

COLPOSCOPIC OBSERVATIONS IN PRECANCEROUS AND EARLY CANCEROUS LESIONS OF UTERINE CERVIX

By

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SUMMARY

Colposcopy was performed in 995 women with cervical dysplasia enrolled under a long term follow-up. It was possible to observe the transformation zone in 935 women. The colposcopic examination revealed atypical transformation zone in 544 women and cancer was suspected in 25 women. The agreement between cytology and colposcopic findings was found to be 78.1%. The frequency of atypical transformation zone increased with increasing grades of dysplasia. Colposcopic directed biopsy was taken in 448 women. The agreement in the diagnosis between the colposcopy and histological examination was found to be 86.2%. Histologically the lesions were less advanced than expected from colposcopic impression in 51 (11.9%) and more advanced in 8 (1.9%) women. Therefore, all patients with cervical dysplasia should have colposcopic examination to reduce the rate of diagnostic cone biopsies especially where upper and lower limit of the lesions can be seen through the colposcope.

Introduction

Carcinoma of the cervix is the most common malignancy seen among Indian women (Jassawala 1973). It is also well known that for cervical cancer there exists a pre-malignant state and non-invasive (carcinoma in situ or CIS) stage before there is invasion of the underlying tissue. These lesions are often patchy and may show a spectrum of changes from mild dysplasia to CIS. Lesions detected during the pre-malignant state is amenable for treatment where by development of malignancy can

be prevented and even in CIS stage almost a hundred percent cure can be expected (Singh *et al* 1983). Colposcopy has been well accepted as a diagnostic method and has the advantage to localise the lesions and select the most suspicious one for biopsy. The present communication reports the clinical colposcopic, cytological and histopathological findings carried out on a cohort of subjects of precancerous lesions of uterine cervix.

Material and Methods

Women attending the gynaecological outpatient departments of the six major hospitals in metropolitan city of Delhi were subjected for clinical and cytological examina-

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tion (Luthra *et al* 1987). During the year 1976 to 1985 a total of 1,20,000 women had cytopathological examination. Of the total women screened 1,910 (1.6 per cent) revealed dysplasias of various grades. Eleven hundred and seven women revealing dysplasias and residents of Delhi for the last one year alongwith controls matched for age and parity were enrolled for long term prospective follow-up examination. Women with mild dysplasias were followed-up six monthly while moderate and severe dysplasias at three monthly intervals. These women during their follow-ups were investigated clinically, colposcopically, cytologically and histologically. The criteria and nomenclature used for cytological examination was based on World Health Organisation (Ritton and Christophersson 1973). Colposcopy was performed by one of the investigators (VS, Gynaecologist). Zeiss colposcope was used for the purpose. Out of 1107 enrolled for long term follow-up, the colposcopy examination could be carried out in 995 women as this facility

started from 1982 after the establishment of colposcopy clinic at the Centre. The colposcopic findings were recorded as per the internationally recommended classification. Colposcopic directed biopsy were performed and fixed in 10% buffered formalin. The final diagnosis was established by the histopathologist.

Results

The age of the cases ranged from 20 years to 60 years with a mean of 35.2 years and average parity was 3.6 (Table I).

Out of 995 cases it was possible to observe the transformation zone in 935 (93.9%) women. In 153 cases there was normal colposcopic findings (Figs. 1, 2, 3 and 4) while abnormal transformation zone (Figs. 5, 6 and 7) was detected in 569 women (Table II). Of the 569 women with abnormal colposcopic findings 412 (82.4%) had whitish discharge and 37 (6.4%) had contact bleeding. A stati-

TABLE I
Age and Parity Wise Percentage Distribution of Women with Dysplastic Lesions by Initial Cytodiagnosis

Characteristic	Initial cytodiagnosis			Total
	Mild	Moderate	Severe	
Age (years)				
20-29	32.9	30.4	26.4	31.6
30-39	40.3	39.2	26.3	38.9
40-49	21.9	25.3	28.0	23.5
>50	5.0	5.1	19.3	6.1
Mean age parity	34.5	35.2	39.1	35.2
0	4.5	4.6	3.5	4.6
1-2	30.9	31.7	26.3	30.8
3-4	36.5	30.0	40.4	34.7
5-6	20.6	24.9	12.3	21.3
>7	7.6	8.9	11.5	8.8
Mean parity	3.5	3.7	3.9	3.6
	638	274	83	995

TABLE II
Distribution of Women According to Colposcopic Findings and Clinical Symptoms

Colposcopic findings	Clinical symptoms					Total
	No. symptoms	White discharge	Contact bleeding	Blood stained discharge	Others	
Normal	81 (52.8)	63 (41.2)	—	1 (0.7)	8 (5.2)	153
Abnormal	78 (13.9)	412 (72.4)	25 (4.3)	12 (2.1)	42 (7.4)	569
Inflammatory	42 (19.7)	152 (71.4)	4 (1.8)	5 (2.3)	10 (4.6)	213
Unsatisfactory	17 (28.3)	28 (46.6)	5 (8.3)	—	10 (16.6)	60
Total	218 (21.9)	665 (65.8)	34 (3.4)	18 (1.8)	70 (7.0)	995

Figures in parenthesis indicate percentage. P 0.001.

Note: The association between the two groups were tested after exclusion of the unsatisfactory category. Contact bleeding and blood stained discharges were combined due to small numbers.

TABLE III
Distribution of Women According to Signs and Colposcopic Findings

Colposcopic findings	Clinical signs					Total
	Normal	Cervical erosion	Endocervicitis	Polyp.	Others	
Normal	102 (66.6)	26 (17.1)	22 (14.1)	1 (1.0)	2 (1.3)	153
Abnormal	122 (21.5)	234 (41.2)	175 (30.7)	7 (1.2)	31 (5.5)	569
Inflammatory	12 (5.8)	83 (38.8)	112 (52.4)	2 (0.9)	4 (1.9)	213
Unsatisfactory	15 (25.6)	23 (28.2)	17 (38.4)	2 (1.5)	3 (5.0)	60
Total	251 (25.3)	366 (36.8)	326 (32.8)	12 (1.2)	40 (4.0)	995

P<0.001. Figures in parenthesis indicate percentages.

TABLE IV
Distribution of Women According to Cytological Examination and Colposcopic Findings

Cyto/Colpo	Normal	Inflamma- tory	Atypical T.Z.	Suspect frank cancer	Total	T.Z. not seen
Normal	61 (39.9)	1 (0.5)	2 (0.4)	—	64	4
Inflammation	22 (14.4)	136 (63.8)	28 (5.1)	1 (4.0)	187	2
Mild dysplasia	60 (39.2)	57 (26.8)	247 (45.4)	1 (4.0)	365	28
Moderate dysplasia	7 (4.6)	15 (2.0)	129 (23.7)	—	151	15
Severe dysplasia	3 (2.0)	4 (1.9)	75 (13.8)	3 (12.0)	85	10
Carcinoma in-situ	—	—	63 (11.6)	20 (80.0)	83	1
Malignant cells						
Total	153	213	544	25	935	60

Agreement between cytology and colposcopic findings = 78.1%.

Figures in parenthesis indicate Percentage. $P < 0.001$.

Note: The colposcopic examination was carried out during the follow up visit in about 40% women, while the rest 60% had this examination at the time of enrollment into the study. Hence some women with initial cytological abnormality regressed to normalcy or inflammatory smears.

stically significant association ($P < 0.001$) was observed between the colposcopic findings and presence of clinical findings. The proportion of women revealing contact bleeding or discharge accounted for 4.1% in the inflammatory group. Clinical signs as related to colposcopic findings are presented in Table III. Clinical diagnosis revealed cervical erosion in 366 (36.8%) women and endocervicitis in 326 (32.8%) women. The other category consisted of diagnosis such as fibroid uterus dysfunctional uterine bleeding and pelvic inflammatory disease which accounted for 4.0%. An association was present between the colposcopic findings and clinical signs which was found to be statistically significant ($P < 0.001$).

In those women who were found to have carcinoma in situ as diagnosed cytologically, the colposcopic findings also revealed atypical transformation zone or suspect for frank cancer. The frequency of atypical transformation zone increased with increasing grades of dysplasia and the association was found to be statistically significant ($P < 0.001$). The overall agreement between cytology and colposcopy findings was 78.1%. The study protocol specified that 50.0% of the dysplasia cases detected cytologically be randomly allotted to biopsy as a quality control measure. Hence it was possible to take biopsy in 448 women out of total 995. A statistically significant association was found between the colposcopy and histopathological diagnosis ($P < 0.001$). The agreement between the two diagnosis was found to be 86.2%. Histologically the lesions were less advanced than expected from colposcopic impression in 51 (11.9%) and more advanced in 8 (1.9%) cases (Table V).

Discussion

The accuracy of colposcopy in the clinical diagnosis of cervical dysplasia is

limited by the clinical skill and expertise of the colposcopist, the ability to visualise the whole transformation zone limit of the lesion and accurate recognition of the most advanced area for directed biopsy. In our study we observed good correlation between colposcopic prediction and histology of the directed biopsy in 86.2% of women which agrees well with the 85% correlation observed by (Staffl and Matingly, 1973). (Selim *et al*, 1977) found a correlation between Histo and colposcopy in 83.5% cases. The rate of agreement observed in the present study was similar to that reported by (Navratil *et al*, 1987) (82.0%). The histological findings of directed biopsy was more advanced than expected from colposcopic observation in 1.97% cases where as the corresponding figures of (Staffl and Mattingly, 1973) were 3.3% and of Benedit *et al* were 3.1%. In 11.9% cases it was less advanced than expected and this may be due to benign lesions such as cervicitis, papillomas etc. In such cases at times it is difficult to differentiate these from cervical dysplasias. In other cases, definite colposcopic lesions may represent without significant histologic changes and these require careful observations for possible development of cervical intraepithelial neoplasia.

All patients with abnormal cervical smears should have colposcopic assessment. Colposcopy is used in the evaluation and management of patients with abnormal cytological smears. No patients with dysplasia should be treated unless prior colposcopic examination has been performed. Colposcopy can aid in determining the size and shape of cone required with the judicious use of colposcopy, the number of diagnostic cone biopsies can be greatly reduced, particularly in younger women where upper and lower

TABLE V
Correlation Between Colposcopy and Histopathological Diagnosis

Histopathology	Normal	Inflam- mation	Colpo- scopy Atypical T.Z.	Surpect frank cancer	Total	T.Z. Not seen
Squamous metaplasia + basal cell hyperplasia + chronic cervicitis	5 (71.4)	20 (76.9)	51 (13.6)	—	76 (17.7)	14 (15.5)
Mild dysplasia	2 (28.6)	6	143 (38.0)	—	151 (35.2)	1 (0.6)
Moderate dysplasia	—	—	86 (22.9)	—	86 (20.0)	1
Severe dysplasia	—	—	33 (86.8)	—	33 (7.7)	2
Carcinoma in-situ + invasive cancer	—	—	63 (16.8)	30 (100.0)	83 (19.3)	1 (1.1)
Total	5+2 7(1.6)	26 (6.0)	376 (87.6)	30 (4.6)	429	19 (4.2)

Note: Figures in parenthesis indicate percentage to row sub total Agreement between colposcopy and histopathology: 86.2% P<0.001.

limit of the lesions can be seen through colposcope.

Colposcopy is a specialised technique which needs training and constant practice. In a developing country like India, therefore, there is an urgent need to develop further expertise in colposcopy and this can be done by referral of all patients with abnormal cytology for colposcopy to experienced individuals so that sufficient cases with significant colposcopic observations can be used for teaching others. Those who are using colposcopy need to acquire the skill by handling adequate number of cases with significant findings and constantly correlating cytologic, colposcopic and histopathologic findings.

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See Figs. on Art Paper III, IV