RESEARCH ARTICLE

A STUDY ON PAP SMEAR AND COLPOSCOPY IN UNHEALTHY CERVIX IN WOMEN

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ABSTRACT

Background: Carcinoma of cervix account approximately 5% of women being curable by screening it attains importance in diagnosis.

Aims & Objective: To study pap smear and colposcopy in unhealthy cervix in women.

Materials and Methods: Women with abnormal appearance of cervix were inspection and evaluated by cytology, colposcopy and colposcopically directed biopsies.

Results: Cytology 4% were normal, 76% had inflammatory smears, 13% had dysplasia and 1% were positive for malignancy. On colposcopic examination 18% were normal 46% had Squamous metaplasia, 32% had atypical transformation zone, 2% had frank invasion 25 were unsatisfactory.

Conclusion: Majority of the women are of 30-40 years, multigravida, low socioeconomic, married and with most common symptom of white discharge.

Key Words: Carcinoma of Cervix; Pap Smear; Colposcopy

Introduction

Carcinoma of the cervix is the most frequent malignancy of the genital tract. Among women dying from malignant disease of all kinds, the cervix accounts for 5%. Statistics vary from country to country and from race to race.[1] Carcinoma cervix is now recognized as preventable by cervical screening and curable especially if identified at an early stage.[2,3]

It best exemplifies the dictum "PREVENTION IS BETTER THAN CURE". The easy accessibility of the cervix to inspection, palpation and application of cytological and tissue sampling procedures has led to extensive screening programs for early detection and treatment of the disease there by contributing to a remarkable lowering of incidence, and mortality from cervical cancer. The approach proposed for India and other developing countries without laboratory facilities and resources to envisage cytological screening of all adult women is called Down Staging.[4]

According to Down Staging detection of the disease in an earlier stage when still curable, by nurses and the paramedical staff using a simple speculum for visual inspection of cervix. Visual screening is sub-optimal strategy in comparison to cytological screening. Exfoliative Cytology has assumed immense importance in screening for cervical cancer. It is simple, non-invasive, safe, outpatient procedure brings to light the hidden carcinoma or a precancerous condition by the exfoliated cells.

The key to treatment of abnormal cytology lies in accurate localization of the abnormal epithelium and this is only possible by colposcopy.[5,6] This technique can be performed quickly and easily in the outpatient department.

Cervical carcinoma can be detected by two methods i.e. cytology is Lab method of detection and colposcopy which is clinical method of detection. Each method deals with a different aspect of neoplasia. Cytology evaluates morphological changes in exfoliated cells, whereas colposcopy evaluates mainly the changes in the terminal vascular network of the cervix that reflect the biochemical and metabolic changes in the tissue. The colposcopically directed biopsy helps in diagnosing the presence of dysplastic changes and the extent of the same, so that the mode of management can be decided upon. In the present study abnormally appearance cervix were detected for carcinoma by cytology, colposcopy and colposcopically directed biopsy.

Materials and Methods

The present study was conducted over a period of 2 years from women who attended the Gynaecological

outpatient department at General Hospital. Women with abnormal appearance of cervix on inspection were evaluated by cytology, colposcopy and colposcopically directed biopsies and results are compared.

Inclusion Criteria: (i) Age group of women: 18-40 years; (ii) Marital status: Married women only; (iii) Presenting symptoms included in the study were, (a) Leucorrhoea, (b) Backache, (c) Irregular menses, (d) Post coital bleeding; (iv) All women were examined in post menstrual period.

Exclusion Criteria: (i) Pregnant women; (ii) Women on oral contraceptive pills.

Detailed history regarding age, age at marriage, sexual practices, religion, parity, age at first pregnancy, menstrual history, presenting symptoms was taken. A clinical examination was done; Pap smear was taken at the time of speculum examination. Colposcopy was done and in cases which required biopsy, colposcopically directed biopsy were taken. Staining was done with Universal stain for cytological preparations. Papanicolaou stain is Harri's hematoxylin is the optimum nuclear stain and combination of OG6 and EA 50 give the subtle range of green, blue and pink hues to the cell cytoplasm. Bethesda classification was used for reporting.[4]

The colposcope on a rolling stand was used with a focal length of 300 mm. It is a microscope which consists of the binocular head with eye pieces the main objective, the focusing mechanism, the microscope tilting mechanism, the illuminating system and built in filters. Green filter serves to enhance the fine detail of the vascular pattern of the target epithelium. The light source on the colposcope is halogen. Colposcopic signs was scored under the Reid Colposcopic index in the following categories[5]: (i) Sharpness of margin; (ii) Epithelial colour; (iii) Vascular pattern; (iv) Iodine staining. Each category was given 3 points.

Scores	Diagnosis
0 – 2	HPV / CIN1
3 – 4	CIN 1 / CIN2
5 – 8	CIN 2 / CIN 3

Results

The results of the study are as follows. 200 women included in this study were all married belonging to age group 18-40 years.

Table-1: Demographic details

Age (Years)	No. of Cases	Dysplasia on Cytology	Atypical TZ on Colposcopy	HPE Dysplasia	Malignancy
< 18	10	-	-	-	-
19-29	92	10(10%)	20 (21%)	12(13%)	
30-40	98	16(16%)	44 (44%)	28 (28%)	4 (4%)

Table-2: Classification according to Parity

Parity	No. of Cases	Dysplasia on Cytology	Atypical TZ on Colposcopy	HPE Dysplasia	Malignancy
Nullipara	4	-	2 (50%)	2 (50%)	-
1-2	72	2 (2%)	18 (25%)	12 (16%)	-
3-4	94	18 (20%)	30 (31%)	18 (19%)	4 (4%)
5 & above	30	6 (20%)	14 (46%)	8 (26%)	-

Table-3: Classification according to Socio economic class

Class	No. of Cases	Dysplasia on Cytology	Atypical TZ on Colposcopy	HPE Dysplasia	Malignancy
I	Nil	-	-	-	-
II	8	-	-	-	-
III	12	-	4 (33%)	8 (67%)	-
IV	70	8 (11%)	46 (65%)	28 (40%)	2 (3%)
V	110	18 (16%)	14 (12%)	4 (4%)	2 (18%)

Table-4: Age at Marriage

Age (Years)	No. of Cases	Dysplasia on Cytology	Atypical TZ on Colposcopy	HPE Dysplasia	Malignancy
< 18s	118	22 (19%)	52 (44%)	34 (29%)	4 (3%)
19-29	78	4 (5%)	12 (15%)	6 (8%)	-
> 30	4	-	-	-	-

Table-5: Presenting symptoms

Symptoms	No. of Cases	Dysplasia on Cytology	Atypical TZ on Colposcopy	HPE Dysplasia	Malignancy
Leucorrhea	142	22 (14%)	54 (35%)	32 (21%)	2 (1.3%)
Backache	14	-	2 (14%)	2 (14%)	-
Irregular menses	18	2 (11%)	2 (22.22%)	2 (11%)	-
Post coital bleeding	6	2 (34%)	2 (33%)	2 (34%)	2 (34%)
Others	10	-	2 (20%)	-	-

Table-6: Pap smear in present study

Pap Smear	HPE +Ve	HPE –ve
Positive	16 (a)	18 (b)
Negative	38 (c)	128 (d)
Total	54	146

Sensitivity: 29%; Specificity: 87%; Predictive value: 47%; False positive: 22%; Uncorrected chi-square (p value): 4.18 ($P < 0.04$)

Table-7: Colposcopy in present study

Colposcopy	HPE +Ve	HPE –ve
Positive	40 (a)	62 (b)
Negative	2 (c)	96 (d)
Total	54	146

Sensitivity: 95.23%; Specificity: 60.75%; Predictive value: 39%; False positive: 60%; False negative: 2%; Uncorrected chi-square (p value): 20.82 ($p < 0.1$); Yates corrected: 18.64 ($P < 0.01$)

Table-8: Cytology findings

Observation	No. of cases	Percentage
Normal smear	8	4
Inflammatory	152	76
Dysplasia	26	13
Koilocytosis	12	6
Positive for malignancy	2	1

Table-9: Colposcopy Findings in study

Appearance	No. of cases	Percentage
Normal	36	18
Squamous metaplasia	92	46
Atypical TZ	64	32
Frank invasion	4	2
Unsatisfactory	4	2

Table-10: Histopathology in study

Microscopic observation	No. of cases	Percentage
Normal	6	4.8
Chronic cervicitis	42	33
Metaplasia	24	19.35
Koilocytic change	4	3.22
CIN – I	24	19.35
CIN – II	12	9.67
CIN – III	4	3.22
Invasive cancer	4	3.22

Discussion

In present study on evaluation of 200 cases of unhealthy cervix by means of cytology 4% were normal, 76% had inflammatory smears, 13% had dysplasias and 1% were positive for malignancy. The results of present study are similar to the study done by Krishna Algotar in 2004 where 5.71% cases showed normal smear, 77.14% had inflammatory smear, 15.71% cases had dysplasia, 1.43% were positive for malignancy.[7] The results of present study were different from that of Wills Sheila (1991) were 80% cases had dysplasia.[8] The disparity in cytological findings between present study and others may be due to -Improper technique, Improper sampling, Improper smear- thick, blood, artefact, Sufficient quantity of cells not being shed or Missed by cytology.

On colposcopic examination 18% were normal 46% had Squamous metaplasia, 32% had atypical transformation zone, 2% had frank invasion 25 were unsatisfactory. 36% abnormal cases on colposcopy were subjected to colposcopically directed biopsies. The results were 5% normal, 33% showed chronic cervicitis 19% had — metaplasia, 32% had dysplasia 3.22% had invasive cancer. These findings are falling in between results of studies by Algotar (2004) in which 6% showed normal, 64% had chronic cervicitis, 10% had metaplasia, 15% had dysplasia, 6% had invasive cancer. While in Wills Sheila 49 % had chronic cervicitis 27.59% were dysplasia, 4% were invasive. Present study results were similar to Wills Sheila when dysplasia and invasive cancer are considered but differed from Algotar (2004).

The colpohistological correlation in 72 cases was 95%in present study which is similar to the study done by Dastur Singh Nanawati[10] when it was 95% and Wills Sheila et al.[8] 92% but different from Krishna Algotar[7], Usha Agarwal[9]. This disparity may be because prediction of diagnosis by colposcopy requires practice and experience and is subject to interobserver variability.

In present study colposcopy had sensitivity of 95% whereas cytology had 95 %. The specificity was 87% for cytology and 60% for colposcopy, false negative value of cytology was 22% and 2% for colposcopy. Even though colposcopy is more sensitive with less false negative rate and colpohistological correlation is better, cytology is more specific and has features of being an ideal screening test- easy availability, low cost less training.

Conclusion

Majority of women belonged to 30-40 years of age, 15% were grand multipara, 35% belonged to socio-economic class IV, 59% were married below 19 years and 3/4th of cases presented with white discharge as their major symptom.

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