



STUDY OF CYTOMORPHOLOGICAL SPECTRUM OF CERVICAL LESIONS BY PAP STAIN.

Medicine

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ABSTRACT

Background: Worldwide cervical cancer is the second most prevalent cancer in women in frequency. India is the second most populous country in the world accounts for 27% of the total cervical cancer deaths. Pap smear is an effective, easy and less invasive screening procedure for cervical cancer.

Methods: This retrospective study includes total 500 smears collected from patients presented to gynecology OPD.

Results: Out of 500 smears, 55% were normal, 30.45% reactive, 2% atypical squamous cells of undetermined significance (ASCUS), 4.4% Low grade squamous intraepithelial lesion (LSIL), 1.4% high grade squamous intraepithelial lesion (HSIL), 0.4% SCC and 6.4% atrophic smear.

Conclusion: Cytology remains the most safe and simple method for early detection for cervical cancer and its precursors. Because the progression from dysplasia to invasive carcinoma is slow, more frequent screening appears to offer an effective way of detecting these changes early.

KEYWORDS

Cervical Cancer, PAP Smear, Dysplasia.

INTRODUCTION

Worldwide, cervical cancer (CC) is the second most prevalent cancer in women in frequency.¹ Globally the burden of cervical cancer is enormous accounting for 10% of the total new cancer cases and 8% of the total cancer deaths among females in 2010. India is the second most populous country in the world, accounts for 27% of the total cervical cancer deaths.¹

Dr. George Papanicolaou introduced Papanicolaou screen (PAP smear) for the identification of cervical lesions in 194. Pap smear examination is cost effective, easy and less invasive screening procedure. It is used for early diagnosis of cervical lesions so that appropriate treatment of its premalignant lesions can be done.

This study was carried to evaluate different neoplastic and non-neoplastic lesions of cervix by Papanicolaou's staining so as to diagnose cervical intraepithelial lesions and invasive cancer at the earliest, to assess the incidence of cervical intraepithelial neoplasia (CIN), various inflammatory conditions of cervix and incidence of cervical malignancy.

MATERIAL AND METHODS

To evaluate the cases of cervical intraepithelial lesions this prospective study was carried out in the department of Pathology of a Tertiary care hospital, attached to the University Medical college, in collaboration with the Department of Gynaecology and Obstetrics over a period of two years, from July 2010 to July 2012. All the patients referred to Gynaecology and Obstetrics Outpatient Department for routine investigations and examination were screened for cervical intraepithelial lesions and a total number of 500 cases were selected based on the following three criteria satisfactory for evaluation, patients who did not undergo hysterectomy, patients who were not pregnant. Complete medical history, clinical details, per vaginam and per speculum examination were obtained for each patient. After naked eye examination cells are scraped from the squamo-columnar junction of cervix by Ayre spatula or cytobrush. The largest prong of the spatula was inserted into the external os and rotated through 360° maintaining firm pressure so as to scrape the squamo-columnar junction throughout its circumference. The spatula was then withdrawn carefully without touching the vaginal walls so as to avoid contamination with cells from the lower genital tract.

The smear was made by spreading the scraped material evenly with a circular motion on a glass slide having the patient's name at one end. The thickness of the smear should be such that after fixation, news paper cannot be read through the slide. The slide was immediately fixed in equal portions of ether & 95% ethyl alcohol. Slides were stained according to Papanicolaou Rapid staining technique.

RESULTS

Total 500 cervical smears were examined over a period of 2 years at Bharati Hospital Pune. Patients ranged from 20-82 year. The maximum number of patients belonged to the age group of 31-40 years (32.8%). Naked eye examination revealed that in maximum number of cases (450 out of 500 i.e 90%) cervix was healthy and in some cases there was more than one lesions.

Table 1 Smear classification according to Bethesda System 2001 in the present study

Type of smear	No. of cases	Percentage
1. NILM	263	52.6%
2. Reactive	152	30.4%
3. Atrophic	32	7.8%
4. Infection	12	2.4%
5. ASCUS	10	2.0%
6. LSIL	22	4.4%
7. HSIL	7	1.4%

In this study as seen above, maximum number of smears were normal (52.8%) , followed by reactive smears (30.4%). The prevalence of dysplasia of all grades was 7.8% and squamous cell carcinoma was 0.4%.

Table 2

Age range	NILM	Reactive	Atrophic	Total
20-29	45	45	0	90
30-39	100	56	0	156
40-49	75	28	8	111
50 and above	43	23	24	90

Majority of dysplasia in the present study occurred in women who were married for 11-15 years. Carcinoma occurred in women who were married for more than 25 years.

Table 3

Parity	No. of cases	Dysplasia	Carcinoma
0	78	-	-
1	124	12(9.7%)	-
2	140	-	-
3	84	6(7.14%)	2
4 and above	74	13(17.56%)	-

Table 4 Cervical smear abnormalities in relation to Age

AGE RANGE	INFECTION	ASCUS	LSIL	HSIL	SCC	TOTAL
20-29	1	2	2	1	0	6
30-39	2	3	2	1	0	8
40-49	4	2	8	2	0	16
50 and above	5	3	10	3	2	23

The maximum number of dysplasia in our study was found in the age group of 50 years and above, while squamous cell carcinoma occurred in women aged 55 years and 63 years.

DISCUSSION

Worldwide, cervical carcinoma is the commonest cancer in females which can be prevented or detected at an early stage. Pap smear examination is a very simple, easy and non-invasive method which helps in the diagnosis². Here we studied 500 cases of cervical smears which showed normal smear in 52.4%, reactive in 30.4% and dysplasia of all grades in 7.8% cases. Maximum dysplasia was seen 50 years and above while squamous cell carcinoma in 55 to 63 years. Majority of dysplasia occurred in females married for more than 11 years and who were multiparous with 4 and above children.

In the present study most common reported category was NILM, followed by ASCUS, LSIL, HSIL. Similar findings were seen in other studies³.

Wahi et al⁴ found that majority of dysplasia occurred in parous women, and only 4.3% of the patients with cervical dysplasia are nulliparous women. Sushila rathe e et al⁰⁸³ found that dysplasia was common in multipara which was not seen in nullipara. Purandare et al¹ said that the incidence of dysplasia doubles in the group married for 10 years or more.

According to Coppelson et al⁵ average age for carcinoma in situ was between 37-42.

Purandare et al¹ said that the highest incidence of mild dysplasia occurred in the age group of 30-39 years and severe dysplasia was maximum in the age group of 40-49 years.

Chakravarthy et al⁶ found in the age group of 31-40. Susheela Rathee et al¹ (1984) studied a highest incidence of dysplasia in the fourth decade. According to Rohatgi et al¹ (1990) majority of dysplasia occurred between the age group of 26-40 years. The mean age for CIN I is 30 years, for CIN II is 33 years and CIN III is 39 years. Padmanabhan et al⁸ (1990) said that the highest incidence of dysplasia was seen in women between 36-40 years. Sarada et al showed mean age for mild and moderate dysplasia was 28 years and 30 years for severe dysplasia. Carcinoma was seen in one woman who was married at 14th year and other who was married at 16th yrs. Majority of dysplasia in the present study occurred in women who were married for 11-15 years. Carcinoma occurred in women who were married for more than 25 years.

Highest number of dysplasia were seen in a women with four children or more. All patients claimed to have only one sexual partner. High parity seems to be important only because it reflects sexual activity starting at a young age. There is no evidence for the fact that repeated trauma to the cervix resulting from the birth of several children predisposes to the development of malignancy.

Sushila rathee et al¹ (1984) found that dysplasia was common in multipara which was not seen in nullipara. Purandare et al¹ said that the incidence of dysplasia doubles in the group married for 10 years or more. Padmanabhan et al⁸ (1990) encountered highest incidence of dysplasia in women who were married for 20-40 years and were para 4 and above. Thus our study is in concordance with the above references mostly.

CONCLUSION

Thus it could be concluded that cytology remains the most predictable, safe and simple method for early detection for cervical cancer and its precursors. Because the progression from dysplasia to invasive carcinoma is slow, more frequent screening appears to offer an effective way of detecting these changes early. However, it must be remembered that cytology by itself is not diagnostic as histological confirmation is necessary.

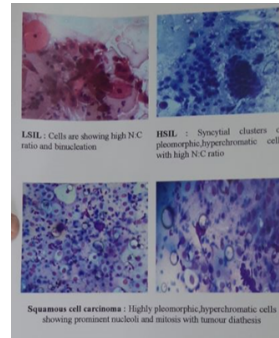


Figure 2

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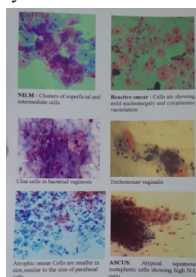


Figure 1: