

To Study the Role of PAP Smear in Detecting Premalignant and Malignant Lesions of the Cervix

Purnima¹, Ramesh B. H.²

ABSTRACT

Introduction: According to the World Health Organization (WHO), 80% of deaths from cervical cancer were from developing countries because of poor screening facility in the society as well as poor awareness among women. The present study was conducted to study the role of pap smear in detecting premalignant and malignant lesions of the cervix and to detect the prevalence of epithelial cell abnormalities of cervix.

Material and methods: In this present study results of PAP smears obtained from 300 women of age ranged from 20-60 years were analysed. Detailed history was taken. The patient was placed in dorsal lithotomy position and a Cusco's bivalve speculum was introduced through vagina and cervix was visualized. The cellular material was obtained and gently smeared on a clean glass slide. The glass slide was then immediately put into the coplin jar containing 100% methanol (fixative) which was then stained by Pap method (RAPID-PAP kit). The cytological interpretation of smears was made. The recorded data was compiled and data analysis was done.

Results: A total of 300 cases were analyzed during the above mentioned period. Most of the women were in age group of 31- 40 years (47%). Out of 300 cases majority of the cases were benign comprising Negative for intraepithelial neoplasia (NILM) of about 234 cases followed by ASCUS 21 cases, LSIL 16 cases, HSIL 10 cases and 6 cases of squamous cell carcinoma. 13 cases which were unsatisfactory for evaluation. Majority of the epithelial abnormalities were seen in the age group between 31-40 years. 24 cases were normal. Maximum cases were of inflammatory smear.

Conclusion: The present study concluded that Cervical cytology by Pap smear helps in detecting premalignant and malignant lesions of cervix at an early stage, and thus help the clinicians in more efficient management of the patients.

Keywords: PAP, Cervical Cancer, Epithelial Cell Abnormalities.

and treat its precursor lesions.⁴ Cervical cancers in their early stage of development, are treatable as the cancer cells are confined to the surface of the cervix and have not spread into the deeper tissues. Once the tumor cells metastasize to other parts of the body the disease becomes more difficult to treat.⁵ The Papanicolaou (Pap) smear was introduced in 1941, became the standard screening test for cervical cancer and premalignant lesions, and is being used globally.^{6,7} A drastic reduction has been observed in the incidence and mortality due to invasive cervical cancer worldwide.⁸ This is because the Pap test detects cervical epithelial cell abnormalities which represent a spectrum of intraepithelial lesions, from mild-to-severe dysplasia to invasive cancer and facilitates early diagnosis.⁹ Pap test not only plays a crucial role in detection of cervical cancer and its precursor lesions, but also aids in the diagnosis of infective and inflammatory conditions including the identification of causative organism, hormone related benign epithelial changes and changes due to therapeutic agents.¹⁰ The present study was conducted to study the role of pap smear in detecting premalignant and malignant lesions of the cervix and to detect the prevalence of epithelial cell abnormalities of cervix.

MATERIAL AND METHODS

In this present study results of PAP smears obtained from 300 women of age ranged from 20-60 years were analysed. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute and written consent was taken from the patient after explaining the study. Detailed history including menstrual history, sexual history, obstetric history, marital history and educational history was taken. It was ensured that no local douche, antiseptic cream and no local internal examination was done on day of test. The patient was placed in dorsal lithotomy position and a Cusco's bivalve speculum was introduced through vagina and cervix was visualized. The longer projection of the Ayre's spatula was placed in the cervix near squamocolumnar

INTRODUCTION

Cancer cervix is the second most common cancer in women in the world, while it is the leading cancer in women in the developing countries. Globally, 15% of all cancers' in females are cervical cancers', while in Southeast Asia, cancer cervix accounts for 20%-30% of all cancers'. Cancer of cervix is a major cause of death in women living in developing countries.¹ More than one-fifth of all cervical cancer deaths occur in India.² Every year, 122,844 women in India are diagnosed with cervical cancer, and 67,477 women die from the disease.³ Unlike most other malignancies, cancer of cervix is readily preventable as it is easy to detect

¹Assistant Professor, Department of Pathology, Raichur Institute of Medical Sciences, Raichur, ²Professor and HOD, Department of Pathology, Raichur Institute of Medical Sciences, Raichur, India

Corresponding author: Dr, Ramesh B. H., Professor and HOD, Department of Pathology, Raichur Institute of Medical Sciences, Raichur, India

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junction and rotated through 360 degree. The cellular material thus obtained was quickly, but gently smeared on a clean glass slide. The glass slide was then immediately put into the coplin jar containing 100% methanol (fixative) which was then stained by Pap method (RAPID-PAP kit). The cytological interpretation of smears was made according to the New Bethesda System for reporting cervical cytology 2014. According to 2014 Bethesda system, lesions are broadly divided into negative for intraepithelial neoplasia and epithelial cell abnormalities includes squamous and glandular cells. The squamous epithelial cell abnormality has been categorized into: 1. Atypical squamous cells (ASC) includes a. ASC of undetermined significance (ASCUS) and b. ASC, cannot exclude high grade squamous intraepithelial lesions (ASC-H) and 2. squamous intraepithelial lesion (SIL a. lowgrade squamous intraepithelial lesion (LSIL) and b. High-grade squamous intraepithelial lesion (HSIL). Similarly, glandular cell abnormalities were categorized into atypical endocervical cells not otherwise specified, atypical

endometrial cell not otherwise specified and atypical glandular cell not otherwise specified. Frank invasive malignancy was termed as squamous cell carcinoma. Those with LSIL and HSIL were counselled and were advised to undergo colposcopic examination and biopsy for histopathological examination. The recorded data was compiled and data analysis was done using SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA).

RESULTS

A total of 300 cases were analyzed during the above mentioned period. Most of the women were in age group of 31- 40 years (47%). Out of 300 cases majority of the cases were benign comprising Negative for intraepithelial Lesion or Malignancy (NILM) of about 234 cases followed by ASCUS 21 cases and LSIL 16 cases, HSIL 10 cases and 6 cases of squamous cell carcinoma. 13 cases which were unsatisfactory for evaluation. Majority of the epithelial abnormalities were seen in the age group between 31-40 years. 24 cases were normal. Maximum cases were of inflammatory smear.

DISCUSSION

Cancer cervix is considered to be an ideal gynaecological malignancy for screening as it meets both test and disease criteria for screening. It has a long latent phase during which it can be detected as identifiable and treatable premalignant lesions which precede the invasive disease and the benefit of

| Age | No. of cases | Percentage |
|-------|--------------|------------|
| 20-30 | 51 | (17%) |
| 31-40 | 141 | (47%) |
| 41-50 | 72 | (24%) |
| 51-60 | 36 | (12%) |
| Total | 300 | (100%) |

Table-1: Distribution according to age

| Interpretation | Number of cases | Percentage |
|---|-----------------|------------|
| Negative for intraepithelial neoplasia (NILM) | 234 | 78% |
| ASCUS | 21 | 07% |
| LSIL | 16 | 5.3% |
| HSIL | 10 | 3.3% |
| Squamous cell carcinoma | 06 | 2% |
| Unsatisfactory | 13 | 4.3% |
| Total | 300 | 100 |

Table-2: Cervicovaginal cytology interpretation/results by the Bethesda System (2014)

| Age group / lesions | ASCUS | LSIL | HSIL | Squamous cell carcinoma |
|---------------------|-------|------|------|-------------------------|
| 20-30 | 0 | 0 | 0 | 0 |
| 31-40 | 13 | 09 | 05 | 02 |
| 41-50 | 06 | 07 | 04 | 04 |
| 51-60 | 02 | 0 | 01 | 00 |
| Total | 21 | 16 | 10 | 06 |

Table-3: Cervical epithelial abnormalities in relation to age

| Interpretation | Number of cases |
|-----------------------------------|-----------------|
| Normal | 24 |
| Inflammatory smear (non specific) | 150 |
| Bacterial vaginosis | 18 |
| Atrophic smears | 33 |
| Candida albicans | 3 |
| Reactive atypia | 3 |
| Trichomonas vaginalis | 3 |
| Total | 234 |

Table-4: Distribution of NILM cases

conducting screening for carcinoma cervix exceeds the cost involved.¹¹

Indian contribution to cervical cases and mortality is 25.4% and 26.5% respectively. Majority of Indian women diagnosed with this disease have never been screened for this condition. Around 70% present in advanced stages due to absence of an organized cancer screening program.¹²

Hemali J at al studied cervical pap smear in womens who presented with various gynaecological problems. Total 1425 patients were screened; there were 1034 (72.56%) abnormal

Pap smears, with 354 (24.84%) normal cases and 37 (2.59%) unsatisfactory or inadequate samples. Total 27 (1.89%) cases showed epithelial cell abnormalities. ASCUS was the most commonly found (40.74%) epithelial cell abnormality out of 27 cases.¹³

P. Vijaya Lakshmi et al carried out a study by taking 200 Papsmeas from patients between ages 25 to 70 years presenting with different Gynaecological complaints. Of the 200 Pap smears taken 134 smears were inflammatory. Fifteen smears showed low grade squamous intraepithelial lesion(LSIL), 13 smears showed mild to moderate dysplasia, 12 smears showed high grade squamous intraepithelial lesion(HSIL). Among routine Pap smears 8 were negative for malignancy, 2 smears showed squamous cell carcinoma after radiotherapy for carcinoma cervix.¹⁴

Malpani G et al conducted a retrospective study of 7127 cervical pap smears. In this study, the epithelial cell abnormalities constituted 2% of all cases. Low grade squamous intraepithelial lesion was the most common epithelial cell abnormality found in the study group followed by HSIL and then squamous cell carcinoma. About two thirds of the abnormal epithelial lesions were found in the age group above 40 years. The cytological diagnosis correlated well with histopathology.¹⁵

Shashidhar M R et al found that out of 308 cases majority of the cases were benign comprising Negative for intraepithelial neoplasia (NILM) of about 294 (95%) cases followed by ASCUS 5 (1.62%) cases and 2 (0.64%) cases each of squamous cell carcinoma and LSIL.¹⁶

T Rajini et al found that 1092 cases (68.4%) had normal findings. In this study there were 92 cases (2.04%) of abnormal epithelial lesions. About 62% of the total cases were above 30 years. Here LSIL was most common epithelial lesion followed by HSIL and then ASCUS.¹⁷

CONCLUSION

The present study concluded that Cervical cytology by Pap smear helps in detecting premalignant and malignant lesions of cervix at an early stage, and thus help the clinicians in more efficient management of the patients.

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