

A STUDY OF CERVICAL CANCER SCREENING IN SYMPTOMATIC WOMEN, USING PAP SMEAR AS RECOMMENDED IN A HOSPITAL IN RURAL AREA OF HARYANA

Received : 02/01/2023
Received in revised form : 28/01/2023
Accepted : 09/02/2023

Keywords:

Papanicolaou smear, screening, Cervical cancer, high-grade squamous intraepithelial lesion, low-grade squamous intraepithelial lesion.

Corresponding Author:

Dr. Isha Gupta

Email: ishakanavgupta@gmail.com

DOI: 10.47009/jamp.2023.5.2.344

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (2); 1637-1641



Shikha Goel¹, Sachin Chauhan², Manvir S. Tevatia³, Isha Gupta⁴, Kanav Gupta⁵

¹Assistant Professor. Department of Pathology, N.C. Medical College and Hospital, Israna, Panipat, India.

²Associate Professor. Department of Pathology, N.C. Medical College and Hospital, Israna, Panipat, India.

³Professor, Department of Pathology, N.C. Medical College and Hospital, Israna, Panipat,

⁴Professor and Head, Department of Pathology, N.C. Medical College and Hospital, Israna, Panipat, India.

⁵Associate Professor, Department of Ophthalmology, N.C. Medical College and Hospital, Israna, Panipat, India.

Abstract

Background: Cervical cancer is one of the leading cause of death among women worldwide, more over in India, it is the second leading cause of death after breast malignancy. Papanicolaou (Pap) smear test can detect early cervical epithelial cell lesions as well as mild to severe dysplasia to invasive cancer, thus resulting in the reduction of the incidence and mortality. Due to high incidence of cervical cancer, the present study is conducted to screen women attending Gynaecology OPD for the cervical cancer using Pap smear. **Materials and Methods:** Descriptive study was conducted in the Department of Pathology at N.C. Medical College and Hospital, Israna, District Panipat, Haryana, over a period of three years. A total of 116 women attending Gynaecology OPD who had given consent to participate in the study were included. **Result:** Out of 116 cases, majority of the cases, 98 (84.4%), were negative for intraepithelial lesion/malignancy (NILM), atypical squamous cells of undetermined significance were 2 (1.7%), low-grade squamous intraepithelial lesion (LSIL) reported in 8 (6.8%) and high-grade squamous intraepithelial lesion (HSIL) was found in 3 (2.5%). **Conclusion:** Pap smear testing is a very useful, simple, economical, and noninvasive procedure to detect precancerous and cancerous cervical epithelial lesions, therefore, establishing it as a routine screening procedure help in reducing morbidity and mortality associated with cervical cancer.

INTRODUCTION

Cervical cancer is one of the leading cause of mortality among women worldwide.^[1] In India, cervical cancer is still second leading cause of death, breast malignancy being first, constituting 34% of all women cancer.^[2] Introduction of cervical cancer screening in the developed countries reported a reduction in both incidence & mortality of cervical cancer.^[3]

Cervical cancer is anticipated by a spectrum of intra epithelial neoplastic changes.^[4] Cervix is the distinctive anatomic part of the uterus, which is further divided into ectocervix lined by non-keratinised stratified squamous epithelium and the endocervix lined by mucus-secreting columnar epithelium. The point at which two epithelium meet

is termed as squamocolumnar junction leading to the formation of transformation zone that recedes towards the endocervix with advancing age, there by replacing columnar cells with stratified squamous epithelium. As there is rapid turn over of cells in the transformation zone, it becomes very susceptible to carcinogens and Human Papilloma Virus infections. Most of the precancerous cervical lesions and cancers arise in the transformation zone out of which approximately 75 to 80% of all cervical cancers are squamous cell carcinoma.

There are various screening modalities that are available for early detection of cervical cancer. The Papanicolaou (Pap) smear was introduced in 1941 that became the standard screening test for cervical cancer and premalignant lesions, and now being used worldwide. Pap test can detect early cervical epithelial cell lesions and mild to severe dysplasia to

invasive cancer thus resulting in the reduction of the incidence and mortality. As it is simple and effective method of cervical cancer screening, it is an integral part of routine clinical examination and large population at risk can be easily screened. Papsmear screening test has sensitivity of 50%–75% and specificity of 98%–99.^[5] As there is high incidence of cervical cancer, the present study is an attempt to screen women attending Gynaecology OPD for the cervical cancer by using Pap smear in this region of Haryana.

MATERIALS AND METHODS

This descriptive study was conducted in the Department of Pathology at N.C. Medical College and Hospital, Israna, District Panipat, Haryana, over a period of three years from October 2019 to October 2022. A total of 116 women were included in the study who attended Gynaecology OPD of our institute and given written consent to participate in the study. Age > 21 years, women with vaginal discharge, post coital bleeding, intermenstrual bleeding, post-menopausal bleeding, unhealthy looking cervix, lesion that bleeds on touch and women without any symptoms screened, were included as study subjects and women who were not willing to participate in the study, known case of cancer cervix, treated cases of cancer cervix, pregnant women were excluded. Withdrawal criteria was patient refusal for any procedure to be carried out for research.

Pap smears preserved in Koplin jar with 95% ethyl alcohol were obtained from Gynaecology Out Patient Department and stained with Papanicolaou (PAP) stain. Cytology laboratory report was done according to the Bethesda classification system (2014).^[4] Data collected was analyzed.

RESULTS

During the period of study, 116 pap smears were received in the Pathology department. Patient age varied from 21 to 70 years. Maximum number of the patients 61 (52.5%) were in the age group varying

from 31–40 years (fourth decade) followed by 21.5% in third, 12% in fifth, 9.4% in sixth decade and 4.3% in seventh decade. 93 (80.1%) women were multiparous while 20 (17.2%) were primipara and rest 3 (2.5%) were nulliparous. 98 (84.4%) women were uneducated, eleven were metric, two were higher secondary and five were graduate. All were married and 58 (50%) women were not using any contraceptive measures. 42 (36.2%) were using barrier method. Socio demographic characteristics are illustrated in [Table 1].

The most common presenting complaint was discharge per vaginum present in 56 (48.4%) patients, 25 (25.1%) patients were having menorrhagia. Thirteen (11.2%) patients presented with post-menopausal bleeding. 12 (10.3%) patients had complaints of dyspareunia and 10 (8.6%) patients had complaints of post coital bleeding. [Table 2] On per speculum examination, inflamed and congested cervix was seen in 55 (47.4%) patients and 26 (22.4%) had cervical erosion. In 20 (17.2%) cervix bleeds on touch and 10 (8.6%) patients had hypertrophied cervix while 5 (4.4%) had normal cervix. [Table 3] 98 (84.4%) smears were negative for intraepithelial lesion or malignancy. Out of 98 smears, 53 (54.1%) smears were inflammatory, 40 (40.8%) smears showed non neoplastic findings which included squamous metaplasia, multinucleated giant cells, Koilocytosis, cannon ball appearance and atrophic smears [Figure 1, 2, 3, 4]. Six (6.1%) smears were diagnosed with organism, three smears exhibit the findings consistent with candida species [Figure 5] and one smear had evidence of Herpes Simplex Virus and one had trichomonas vaginalis infection. Diagnosis of Atypical Squamous Cell of Undetermined Significance was made in 2 (1.7%). Squamous intraepithelial lesion was found in 11 cases out of which 8 (6.9%) had Low grade squamous intraepithelial lesion (LSIL) exhibiting koilocytic atypia in most of the cases. 3 (2.6%) cases showed findings of high grade squamous intraepithelial lesion (HSIL) which included severe dyskaryotic cells, irregular hyperchromatic nuclei and coarsely clumped chromatin (Fig 6). 5 (4.3%) smears were found inadequate [Table 4].

Table 1: Socio-demographic characteristics

Sociodemographic characteristics	Number	Percentage
Age		
21-30 years	25	21.5%
31-40 years	61	52.5%
41-50 years	14	12.0%
51-60 years	11	9.4%
61-70 years	05	4.3%
Parity		
Nullipara	03	2.0%
Primipara	20	17.2%
Multipara	93	80.17%
Education		
Uneducated	98	84.4%
Metric	11	9.4%
Higher Secondary	02	1.7%
Graduate	05	4.3%
Marital		
Married	116	100%
Unmarried	0	0
Contraception		
None	58	50.0%
Barrier	42	36.2%

Tubal ligation	11	9.5%
IUCD	03	2.6%
OCP	02	1.7%

Table 2: Distribution of study subjects as per Chief complaints

Chief Complaints	Number	Percentage
Vaginal discharge	56	48.4%
Menorrhagia	25	21.5%
Post coital	10	8.6%
Post-menopausal	13	11.2%
Dyspareunia	12	10.3%

Table 3: Distribution of study subjects as per Clinical Findings

Per speculum	Number	Percentage
Inflamed and congested cervix	55	47.4%
Cervical erosion	26	22.4%
Hypertrophied cervix	10	8.6%
Bleeds on touch	20	17.2%
Normal cervix	05	4.4%

Table 4: Distribution of study subjects on basis of Cytology findings

Cytology	Number	Percentage
Unsatisfactory	05	4.3%
NILM*	98	84.4%
Inflammatory	53	54.1%
Non neoplastic	39	40.8%
Organism	06	6.1%
ASCUS**	02	1.7%
ASC-H***	00	00
LSIL****	08	6.8%
HSIL*****	03	2.5%
SCC*****	00	00
Others	00	00

*Negative for intraepithelial lesion/malignancy

**Atypical squamous cells of undetermined significance

***Atypical squamous cells – cannot exclude HSIL

****Low grade squamous intraepithelial lesion

*****High grade squamous intraepithelial lesion

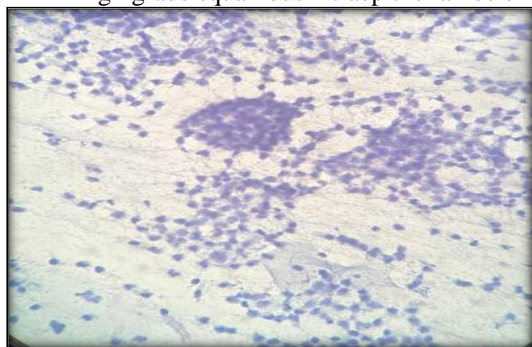


Figure 1: Pap smear showing cannon ball appearance – neutrophils adherent to squamous cells (PAP stain, 40X)

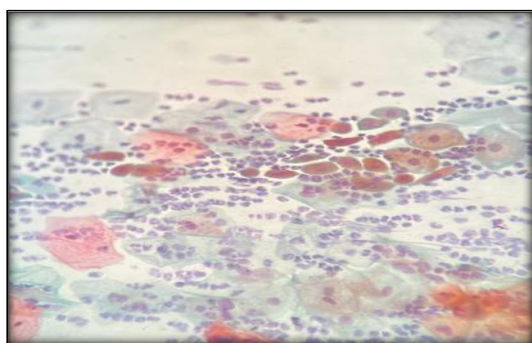


Figure 2: Pap smear showing squamous metaplastic cells (PAP stain, 40X)

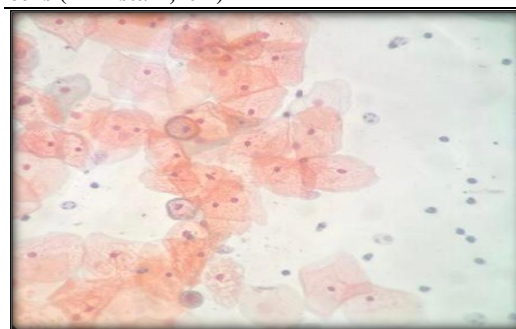


Figure 3: Pap smear showing koilocytosis (PAP stain, 40X)

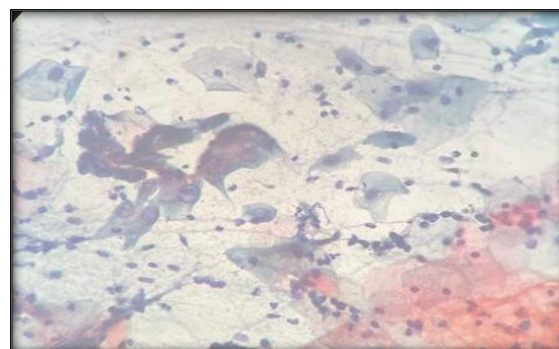


Figure 4: Pap smear showing multinucleated giant cells. (PAP stain,40X)

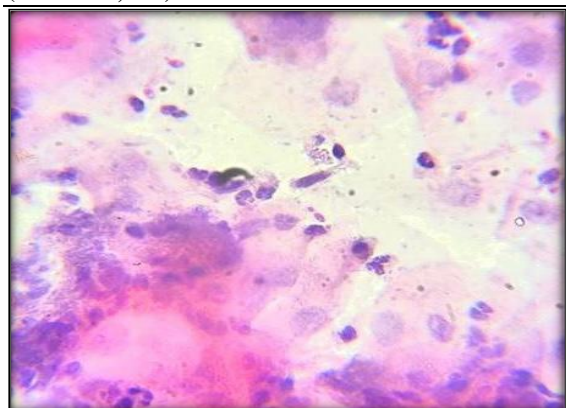


Figure 5: Pap smear showing fungal organism morphologically consistent with candida spp. (PAP stain,40X)

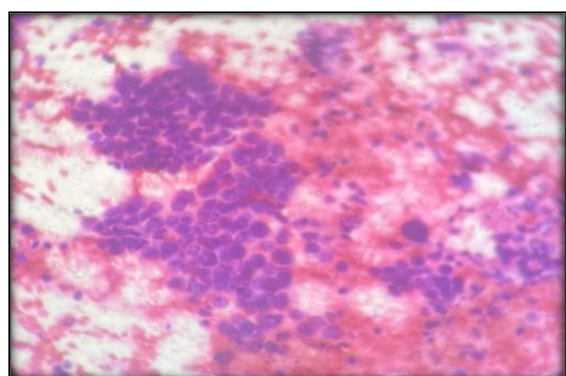


Figure 6: Pap smear showing dysplastic cells in syncytial clusters; High Squamous Intraepithelial Lesion (PAP stain,40X)

DISCUSSION

Cervical carcinoma is considered ideal for screening as it has identifiable and treatable premalignant lesions which precedes invasive disease.^[6] The benefits of screening cervical carcinoma exceeds the cost that is involved in performing the procedure.^[7]

All women included in the present study were married and the mean age of the participants was 37.7 ± 10.3 years. Majority of the patients (52.5%) were in the age group of 31-40 years (fourth decade) that is similar to the study conducted by Misra et al.^[8] Vaginal discharge was the most common complaint of the women in our study, same findings were reported in other similar studies.^[9,10]

The Pap smear was negative for intraepithelial lesion or malignancy in 84.4% as compared to the study conducted by Sarma et al.^[11] 44.8% women in our study reported with inflammation that is near to the study conducted by Sachan et al which was (42.66%). Few studies had reported that women with persistent inflammation should be treated with proper antibiotic treatment followed by repeat Pap smear; if left untreated, there is increase in chance of cervical intraepithelial lesions.^[12,13]

In our study, we had an unsatisfactory report rate of 4.3%, which may be due to dryness of the smear or some technical error, almost similar to Vaghela et al. which had 4.8%.^[14] Epithelial cell abnormalities was reported in 11.0% in our participants, the result is comparable to the abnormalities as detected to 9.05%,

12.60%, and 11.95% in the studies performed by Al Eydet et al.^[15] Patel et al.^[16] and Sarma et al.^[11] respectively.

In our study, the ASCUS was found in 1.7% of the screened women, LSIL in 6.8%, and HSIL in 2.5%, results comparable to the study done by Verma et al.^[17] who found ASCUS in 1%, LSIL in 5.5%, and HSIL in 2.5% of the women screened, Padmini et al.^[18] reported ASCUS (8%), LSIL (5%), and HSIL (3%) in women which were screened with the Pap smear test. However, higher numbers of LSIL (8.6%), HSIL (3.8%) and SCC (0.9%) were found in a study by Nayani and Hendre.^[19]

As Pap smear examination is easy and OPD procedure, it should be practiced as a routine gynaecological screening program of women in reproductive age group. Implementation of pap smear screening program in all parts of developing countries especially rural areas will help in early diagnosis, proper treatment and reduction in mortality that is related to cervical cancer.

CONCLUSION

Pap smear testing is a very useful, simple, economical, and non-invasive procedure to detect precancerous and cancerous cervical epithelial lesions, therefore, establishing it as a routine screening procedure help in reducing morbidity and mortality associated with cervical cancer. Diffuse and intense educational activities regarding the availability, utility and importance of Pap smear should be done among all women especially in rural India.

List of used abbreviations

NILM Negative for intraepithelial lesion/malignancy
ASCUS Atypical squamous cell of undetermined significance

ASCUS-H Atypical squamous cell— cannot exclude HSIL

LSIL Low grade squamous intraepithelial lesion
HSIL High grade squamous intraepithelial lesion.

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