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Analysis of 100 cervical pap smears for screening of cervical cancer at a tertiary care teaching hospital

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Abstract---Cervical cancer is the most common cancer. Pap smear testing can detect cervix precursor lesions early on, reducing the morbidity and mortality associated with cervical cancer. Early detection and treatment can reduce morbidity and mortality. Aim: To study and analyse 100 Papanicolaou smears (PAP smears) taken from women presenting with various gynaecological indications as a screening method to rule out cervical cancer. Method: PAP test with an Ayres spatula on women between the ages of 25 and 70 who went to the gynaecological outpatient department with different gynaecological complaints. SMEAR was reported as per the 2013 Bethesda system. Result: The common presenting complaints of women in our study were abnormal vaginal discharge (p/v 55%), followed by prurities vulvae (09%), intermenstrual bleeding (08%), and postcoital bleeding in 02% of women. On speculum examination of the cervix, 30% had chronic cervicitis. In only 4% of women, the cervix bleeds on touch. Abnormal vaginal discharge is seen in 60% of women. 36% of smears were inflammatory, 5% had low grade squamous intraepithelial lesions, and 2% had high grade squamous intraepithelial lesions. ASCUS and ASC-H were reported in 3% and 1% smears, respectively. Conclusion: PAP smear is a very easy and

economical screening method to detect premalignant and malignant lesions of the cervix, which helps in proper treatment.

Keyword---PAP smear, High, low grade squamous intraepithelial lesions, Atypical squamous cells of undetermined squamous cell carcinoma

Introduction

Cervical cancer is the most common cancer, and its incidence is increasing day by day around the world, to the point that it has surpassed breast cancer as the most common malignancy affecting women [1]. According to world cancer statistics, poor and low-resource nations account for more than 80% of all cervical cancer cases due to a lack of awareness and the difficulties of implementing cytology-based screening programmes [2]. India accounts for more than a fifth of all cervical cancer deaths [3]. Cervical cancer is preceded by the premalignant stage, which takes 10 to 15 years to progress. Middle age is the most typically affected age group, with preinvasive tumours appearing 5–10 years prior. As a result, it is suggested that every woman have Pap testing at least once in her life, preferably before the age of 45 [4,5].

Pap smear testing can detect cervix precursor lesions early on, reducing the morbidity and mortality associated with cervical cancer. Early detection and treatment can reduce morbidity and mortality by up to 70% and 80%, respectively. Cervical cancer is a preventable disease due to the extended preinvasive stage; if thorough screening is undertaken, early detection and effective treatment are possible [6]. Cervical cancer mortality has decreased significantly in developed countries as a result of comprehensive screening programmes.

The PAP smear has a sensitivity of 70–80% in detecting high-grade squamous intraepithelial lesions (HSILs) [7]. There is a need to raise awareness about cervical cancer screening, educate women about the symptoms of cancer, and encourage them to go to the hospital for a cancer screening. Our health services and system must be strengthened to include screening at primary health facilities. Cervical cancer, unlike most other cancers, is easily detectable and preventable.

The Papanicolaou smear was first used in 1941 and has since become the standard screening test for cervical cancer and premalignant lesions [9,10]. This test is important not only for detecting cervical cancer and its precursor lesions but also for diagnosing other diseases, such as infective and inflammatory illnesses. PAP smear screening has a sensitivity of 50–75% and a specificity of 98–99% [11].

Material and Method

The study was conducted in the department of Obstetrics & Gynaecology of the Government Medical College affiliated district hospital Shivpuri, over a one-year

period, from March 2019 to March 2020. A total of 100 women who were counselled to participate in the trial at a gynaecology opd were included in the study.

Inclusion criteria: women with an age > 21 years, vaginal discharge, post-coital bleeding, intermenstrual bleeding, an unhealthy looking cervix, and lesions that bleed on touch.

Exclusion criterion: Known and treated cases of cervical cancer and pregnant women are excluded.

Methodology

All the women counselled about the PAP test and the advantages of the test were explained to women. After taking consent, a complete history was taken, which included their personal history, family history, and a clinical assessment. The PAP smear was performed using a traditional approach in accordance with medical literature. A sterile bivalve speculum is placed into the vagina without lubrication in the lithotomy position to visualize the cervical os and ectocervix. A sample of ectocervix was taken with a wooden ayres spatula and spun 360° around the perimeter of the cervical OS before being distributed on a marked glass slide in a rotatory manner and fixed in 95% ethyl alcohol within 30 seconds. Endocervical cytology was performed using an endocervical brush that was introduced into the endocervix, turned 180° in the endocervical canal, rolled over a glass slide, fixed at 95 percent, and delivered to the pathology department for examination. The laboratory reported the cytology examination results according to Bethesda system of classification (2014) [8] as follows:

Adequacy of sample: satisfactory or unsatisfactory

Epithelium: Squamous, glandular cell abnormalities or other abnormalities
All the women with abnormal PAP results were advised for further follow up and treated as per the standard guidelines by WHO.

Result

Table 1: Sociodemographic Distribution

		Number
Age group	21-30	25
	31-40	45
	41-65	30
Parity	Nullipara	0
	Primipara	22
	Multipara	78
Marital Status	Yes	100
	No	00
Education	Uneducated	36
	Matric	30
	Higher secondary	25

	Graduate or Above	9
Contraception use	None	32
	Barrier	30
	Contraceptive pills	4
	IUCD	10
	Tubal Ligation	24
Smoking or tobacco use	No	90
	Yes	10

The majority of women were in the age group of 30–40 years. Out of 100 women, 22 (22%) were primiparous, and the rest of 78 (78%) were multiparous. All these women were married and were in monogamous relationships. 36% of women had never been to school, and only 9% of women were graduates or had other higher education. 30% of women used the barrier method, 4% O.C. pills, 10% IUCD, and 24% tubal ligation as contraception. 32% of women do not use any form of contraception. Most of the women were from low socioeconomic status. 10% of women reported a smoking or tobacco use history.

Table 2: Clinical presentations

Presenting Complaints	Number
Asymptomatic	26
Discharge P/ v	55
Intermenstrual bleeding	08
Post coital bleeding	02
Pruritis valvae	09

The common presenting complaints of women in our study were abnormal vaginal discharge (p/v 55%), followed by prurities valvae (09%), intermenstrual bleeding (08%), and postcoital bleeding in 02% of women. Out of 100 women, 26 women (26%) had no complaints; they just came for their routine checkup.

Table 3: Speculum Findings

Speculum examination	Number
Healthy cervix	50
Cervical erosion	15
Chronic cervicitis	30
Discharge	60
Bleeding on touch	04

On speculum examination of the cervix, 50% of women had normal-looking cervixes and 30% had chronic cervicitis. In only 4% of women, the cervix bleeds on touch. Abnormal vaginal discharge is seen in 60% of women.

Table 4: Pap smear cytology

Pap smear cytology	Number
Intraepithelial lesion/ malignancy	53
Inflammatory	36
Nonspecific findings	
Atypical squamous cells of undetermined significance	03
Atypical squamous cells -H	01
Low-grade squamous dysplasia	05
High-grade squamous dysplasia	02
SCC	00
Glandular cell abnormality	00

In our study, 100% of smears were found satisfactory. 53% of smears were found to be negative for intraepithelial lesion or malignancy (NILM). 36% of smears were found to be positive for NILM smears were reported as inflammatory, 05% were LSIL, and 2% were HSIL. ASCUS and ASC-H were reported in 3% and 1% smears, respectively. There were no cases of SCC or glandular cell abnormalities. When abnormal Pap smear results were found, they were followed up with HPV DNA testing, a coloscopy, and a cervical biopsy, as needed. Once the diagnosis was confirmed, the right treatment was given.

Discussion

The most common age range of the present study population was 30–40 years old (45%). Most commonly, cancer of the cervix occurs between 40 and 50 years of age, and its preinvasive lesions occur 5–10 years prior. It is therefore recommended that, every woman should undergo PAP testing at least once in her lifetime before the age of 45 years [4,5].

Nayir et al. [12] in their study showed that population based cervical cytology screening programs using Pap smear testing every 3-4 years have reduced cervical cancer incidence and mortality by up to 80% in developed countries in the last five decades. In a developing country like India, cervical cancer is on the decline trend in a population based study by Sreedevi et al [13].

In the present study, there were 100 smears examined and no glandular cell abnormality was reported. LSIL and HSIL were 05% and 2%, respectively. No patient had squamous cell carcinoma. The high percentage of inflammatory patterns with increased neutrophils in the study indicates poor personal hygiene. In the present study, 47 (47%) women were found to have abnormal pap smear cytology, whereas in a study conducted by Sunita et al., 433 (77%) reported were abnormal [14]. A comparison between the epithelial cell abnormalities in our study and other studies is given in table No 5.

Table 5: Comparison of abnormal pap smear Cytology

Parameter	Persent Study	Sunita et al (14)	Nayir et al (12)
Atypical squamous cells of undetermined significance	3%	2.3%	1.7%
Atypical squamous cells -H	1%	-	0.2%
Low grade squamous dysplasia	5%	1.9%	0.5%
High grade squamous dysplasia	2%	0.5%	0.1%
SCC	0	-	-
TOTAL	11%	5%	2.5%

The difference between cervical smear findings may be because of differences in socio-demographic distribution, age, and awareness regarding screening programmes. From the present study, we conclude that among women in early marriage, high parity and illitracy lead to poor personal hygiene, which leads to infection. In spite of these risk factors, there was a low prevalence of atypical epithelial cell abnormalities.

Conclusion

Cervical cancer is the most common cancer for which screening is done. A PAP smear is a simple and inexpensive screening method for detecting premalignant and malignant cervix lesions, which aids in effective treatment. Cervical cancer mortality can be lowered if PAP smears are performed every three years as recommended. Cervical cancer can be prevented by early detection of preinvasive lesions.

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