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Spectrum of Pap Smear Cytology Study at a Tertiary Care Centre – A 5 Years Retrospective Study

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ABSTRACT

BACKGROUND:- Cervical cancer is the commonest cause of death among the female in developing country. India has highest age standardized incidence in South Asia at 22yrs of age. According to the world cancer statistics due of lack of awareness, >80% of all cervical cancer cases are found in developing & low resources countries. **Material & method:** This is a retrospective study in Dr. Ulhas Patil Medical College & Hospital, Jalgaon during 2018-2022. Total 1084 pap smear are included in the study. Pap smear was advised for screening in all women to rule out cervical cancer. Sample from ectocervix & endocervix are taken & studied with the help of Ayres spatula, fixing in 95% ethyl alcohol & subsequently stained in pap & H&E stains. Stained slides are DPX mounted followed by reporting in cytopathology section according to Bethesda system. Using predetermined proforma, all the data were recorded. **Result:** None had pap smear testing earlier in life. Only 3% women knew importance of pap smear. Women included in study were married & in stable marital relationship. Mean age was 38 years. Most common complaint was vaginal discharge. Most of the women were parous, had poor socio-economic status & never consumed tobacco. 55.85% were reported as Negative for Intraepithelial Malignancy (NILM), 32.3% were reported inflammatory, 2.8% were in atrophy category. Atypical Squamous Cell of Undetermined Significance (ASCUS), Atypical squamous cell cannot exclude HSIL (ASC-H), Low grade squamous intraepithelial lesion (LSIL), High grade squamous intraepithelial lesion (HSIL) were detected in 1.8%, 0.3%, 3.1% & 2.5% case respectively. **Conclusion:** Colposcopy should be done in women with abnormal pap test findings; those having abnormal colposcopy findings are advised to do biopsy. Pap smear is a cost effective very sensitive & specific method in detecting pre-cancerous lesions of cervix thus reducing incidence of cervical cancer. The sensitivity for cervical cytology can be increased by HPV DNA testing in biased cases.



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INTRODUCTION

Cervical cancer is the commonest cause of death among female in a developing countries ^[1]. India has the highest age specific incidence of cervical cancer in South Asia at 22 ^[2]. According to the world cancer statistics due to lack of awareness, >80% of all cervical cancer cases are found in developing & low resource countries ^[3]. Every year, 122,844 women are diagnosed with cervical cancer, and 67,477 women die from cervical cancer ^[4]. Due to long courses of the preinvasive stage, cervical cancer is a preventable disease. According to National Cancer Registry Program of India, Cancer of uterine cervix and breast are leading malignancies in Indians ^[5,6]. Conventional cytology or pap smear is cost effective and efficient method for screening of patients but requires training and experience to minimize errors ^[7]. It is one of the preventable and curable disease ^[8]. Early detection & appropriate management of complaints related to cervical cancer are possible through increased screening. These are correlated with history of increasing parity and exposure of sexual activity period ^[9]. As pap smears show early epithelial changes of precancerous intraepithelial neoplasia and invasive cancer of the cervix, cervical screening awareness should be held in every family in developing countries by giving education related to symptoms and using regular follow-up will dramatically reduce new cases. Sensitivity & specificity of Pap smear screening is 50-75% & 90 to 99% respectively ^[2]. The aim of the study was to detect precancerous lesions using the pap smear & investigate clinically in these women. A PAP screening done in association with HPV DNA test increases sensitivity in early precancerous cervical lesions ^[3].

MATERIAL AND METHOD:

This is a 5 year retrospective study in Dr. Ulhas Patil Medical College & Hospital, Jalgaon during 2018-2022 1084 pap smears was included in study. Details on proforma were recorded according to relevant history of illness obtained from the patient. It was ensured that no local douche, antiseptic cream, and no local internal examination was done on the day of the test. A sample was used from the ectocervix by rotating a wooden Ayre spatula 360 degree. A clean labelled glass slide for smear was used and fixed with 95% ethyl alcohol in coplin jar. The cytopathological reporting of smeared glass slides were done in Department of Pathology.

Reporting done according to the new Bethesda system for Reporting Cervical Cytology 2014. The data was tabulated in MS excel sheet and was analysed as descriptive study.

The inclusion criteria are as follows:

- Age > 21 years
- Patient with complaints of vaginal discharge, post-coital bleeding, inter-menstrual bleed, postcoital bleed, postmenstrual bleed, multiple sexual intercourse, and unhealthy cervix.

The exclusion criteria are as follows:

- Women not willing to participate in the study - known cases of cancer cervix
- Treated cases of cancer cervix
- Women who were pregnant were excluded from the study.

RESULT:

Women who participated in the study had not underwent Pap smear testing earlier in their life. 5% women (10 cases) knew that there are tests available that can detect cancer of the cervix and others didn't knew about the test that can detect pre-cancerous lesions. The presenting complaints and clinical findings are shown in Table 1 respectively. The commonest presenting complaint of women in our study was abnormal vaginal discharge which was 55.6% (603 cases) followed by intermenstrual bleeding in 17.4% (189 cases). The least common was an unhealthy cervix in 2.6% (29 cases). Cytology was done in all the 1084 women in the study, 55.8% (605 cases) smears were reported as negative for intraepithelial lesions or malignancy (NILM) (*Fig 1, 2 & 3*), 32.3% (351 cases) were reported as inflammatory smears, 3.1% (34 cases) were reported as LSIL, and 2.5% (28 cases) were reported as HSIL. A repeat Pap smear was done in 1% (11 cases) in which smears were found unsatisfactory. The findings are shown in Table 2. The distribution of Abnormal pap smears is shown in Table 3. In our study youngest woman was 24 years and the oldest woman was 73 years. In 20- 30yrs age group pap smear were reported majorly as inflammatory (n = 151) followed by LSIL (n = 8). Atrophic smear (n = 16)

(Fig 4) were predominantly noted in the 51-60 year age group. ASCUS (n = 10) and HSIL (n = 14) were mostly seen in the age group of 51-60.

Table 1: CHIEF COMPLAINTS:

| CHIEF COMPLAINT | NUMBER OF CASES | PERCENTAGE (%) |
|-----------------------------|-----------------|----------------|
| Vaginal Discharge | 603 | 55.6 |
| Intermenstrual Bleed | 189 | 17.4 |
| Post-Coital Bleed | 122 | 11.2 |
| Postmenopausal Bleed | 85 | 7.8 |
| Multiple sexual intercourse | 56 | 5.1 |
| Unhealthy Cervix | 29 | 2.6 |
| Total | 1084 | 100 |

Table 2: CYTOLOGY:

| PAP SMEAR | NUMBER OF CASES | PERCENTAGE |
|----------------|-----------------|------------|
| UNSATISFACTORY | 11 | 1 |
| NILM | 605 | 55.8 |
| INFLAMMATORY | 351 | 32.3 |
| ATROPHIC | 31 | 2.8 |
| ASCUS | 20 | 1.8 |
| ASC-H | 4 | 0.3 |
| LSIL | 34 | 3.1 |
| HSIL | 28 | 2.5 |
| SCC | 0 | 0 |
| OTHER | 0 | 0 |
| TOTAL | 1084 | 100 |

Table 3: AGE WISE DISTRIBUTION OF ABNORMAL SAMPLE:

| Age Group | NILM | Inflammatory | Atrophic | ASCUS | LSIL | HSIL |
|-----------|------|--------------|----------|-------|------|------|
| 20-30 | 210 | 151 | 0 | 0 | 8 | 0 |
| 31-40 | 245 | 69 | 0 | 0 | 10 | 3 |
| 41-50 | 52 | 60 | 4 | 4 | 9 | 5 |
| 51-60 | 53 | 35 | 16 | 10 | 3 | 14 |
| 61-70 | 35 | 30 | 8 | 2 | 3 | 2 |
| >71 | 10 | 6 | 4 | 2 | 1 | 3 |
| TOTAL | 605 | 351 | 31 | 20 | 34 | 28 |

Figures:

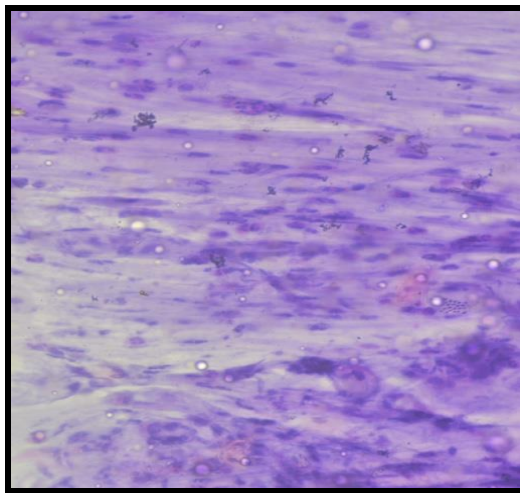


Fig 1 NILM NON SPECIFIC CERVICITIS: Smear studied show predominant superficial, some intermediate & dense acute inflammatory

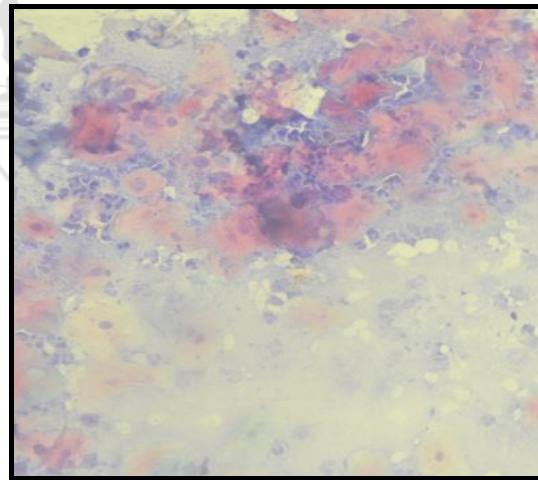


Fig 2 NILM Trichomonas: Smear studied show predominantly superficial cells with intermediate cells & pear shaped organism

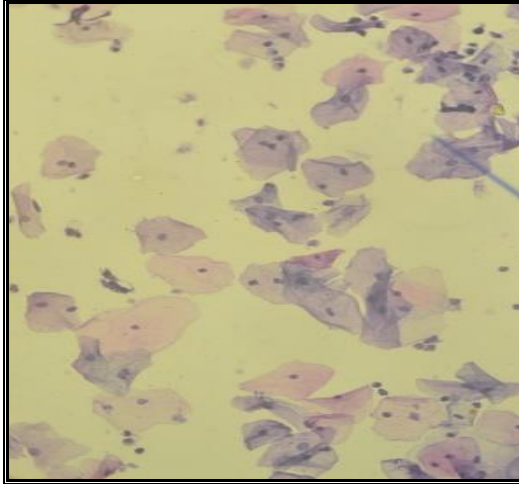


Fig 3 NILM: Fungal organism morphologically consistent with Candida

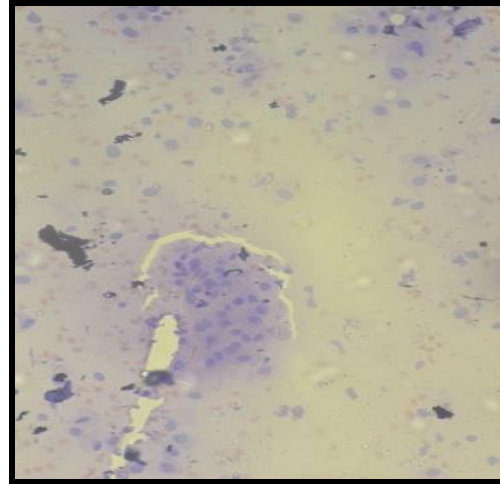


Fig 4 ATROPHY: Smear studied show predominantly intermediate & parabasal cells forming monolayer sheets

DISCUSSION:

The high incidences of cervical cancer are due to prevention program which are either nonexistent or poorly implemented. The Pap smear test used as a screening method to detect cervical cancer is an effective way to prevent the development of cervical cancer, but awareness within the community about the Pap smear test is very low. According to the American Cancer Society (2012), the Pap smear test is a routine cancer screening method that should be done every 3 years, and a Pap smear with an HPV DNA test is recommended as a screening method every 5 years^[3,6]. Many studies have shown best technique to diagnose premalignant and malignant lesion of the cervix by pap smear screening. With the regular follow-up and management, the incidence and mortality due to cervical cancer has reduced.

In our study, most of the abnormal cytology were detected in age group lying between 40 to 60 years which are similar to Sachan et al^[3]. From, 28 HSIL cases were reported accounting for 2.5%. Out of 28 cases, 14 cases were reported in the age group of 51- 60yrs. Vaghela et al. reported 5% of HSIL in their study^[8]. In the present study most commonly reported smears were NILM smears accounting for 55.8%. NILM is commonly seen in the 31-40 years of age group in the present study. A study by Tushar K. et al showed 53% NILM with nonspecific

inflammation [7,10]. ASUS constituted 11.9% of our study however in study by Bamanikar et al. ASUS accounted for 2.32% [1,3,11].

CONCLUSION:

Pap smear testing is a effective, easily applicable, and highly sensitive and specific method for diagnosing precancerous lesions of cervix. It should be established as a routine screening procedure to reduce the treatment burden, morbidity, and mortality. Women above 30 years are recommended for regular cervical screening every year and women with epithelial abnormalities are advised for follow up with colposcopy and biopsy. The Pap test has been regarded as the gold standard of cervical screening programs. The sensitivity for detection of cervical pathology is increased by Pap test with HPV DNA test. Awareness and screening programmes to be done effectively to detect premalignant lesions and reduce incidence of cervical cancers by diffuse educational activities and media programmes.




Conflict of interest: There are no conflicts of interest.

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