

Section

Pathology

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Article

## Study and Analysis of Cervical PAP Smears in Our Hospital

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### ABSTRACT

**Background:** Cervical cancer is one of the major cause of mortality among women worldwide. So, the present research aimed to study and analyze 242 pap smear reports from women presenting with various Gynecological indications.

**Methods:** Study is carried out by taking 242 Papsmeas from patients attending Gynaecology OPD at Dahod District Hospital under Zydus Medical College, Dahod, Gujrat from January 2019 to February 2020. Pap smears were taken from patients between ages 25 to 70 years presenting with different gynecological complaints and as a routine beyond the age of 45 years using Ayres Spatula. Smears were reported as per the 2001 Bethesda system.

**Results:** Of the 242 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.

**Conclusions:** Pap smear is easy and economical screening method to detect premalignant and malignant lesions of cervix which help in proper treatment.

**Keywords:** Pap smear, HSIL – High grade intra epithelial lesion, LSIL – Low grade intraepithelial lesion, ASCUS – Atypical squamous cells of undetermined significance, Squamous cells carcinoma, Malignant smears.

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### INTRODUCTION

Almost about one million amongst world's women population die every year due to cancer cervix every year. Cervical cancer is in second place amongst malignancies that affects women, first leading is mammary cancer.<sup>1</sup> Early diagnosis and treatment will reduce morbidity by 70% and mortality by 80%.


The Papanicolaou test also known as Pap test, Pap smear, cervical smear or smear test is a screening method used to detect potentially precancerous and cancerous lesions in the cervix. Greek doctor Georgios Papanikolaou is the inventor of this test and it was thus named after him.<sup>2</sup>

Pap smear test is done by opening the vaginal canal with cuscos speculum and picking up material at the outer opening of the cervix i.e. at the transformation zone,<sup>3</sup> from posterior vaginal wall and endocervical canal. Then the collected cells are analysed under a microscope. The test mainly meant to detect precancerous conditions like cervical

intraepithelial neoplasia(CIN) or cervical dysplasia, squamous intraepithelial lesion system (SIL) etc.<sup>4</sup> Pap smear test is a effective, saving potential costs and universally used method for early detection of pre-cancer and cervical cancer. Usually Pap smear screening test is recommended starting around 21 years of age until the age of 65 years. Can be repeated at three years interval. In case of abnormal Pap smear report, depending on the type of abnormality the test may need to be repeated in six to twelve months. More sensitive and specific investigations like colposcopy guided cervical biopsy etc are needed to diagnose and prevent further progression to cervical cancer.<sup>5</sup>

The objective of the study was to study and analyze the pap smear reports and decide the course of treatment of patients accordingly.

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## METHODS

This study was carried out in Gynaecology OPD at Dahod District Hospital under Zydus Medical College, Dahod, Gujrat India from January 2019 to February 2020. Total 242 pap smears were taken from women between ages of 25 to 70 years presenting with different Gynecological complaints and as a routine beyond the age of 45 years by using Ayres Spatula. Smears were reported as per the Bethesda system. We took ethical clearance to do this retrospective study.

### Inclusion criteria

- Women between 25 to 70 years of age with sexual history.

### Exclusion criteria

- Women below 25 years.
- Women without sexual exposure.
- Women above 70 years.

### Procedure

Pap smears are taken by using Ayres Spatula.

- The broad end of spatula was placed on the Cervix and rotated through 360° and the collected material was spread over a glass slide.
- The oblong relabeled narrow end of spatula was used to take smear from posterior vaginal fornix and spreaded over a second glass slide.
- The Endo cervical sample was collected using a Cyto brush and was spread over labelled third glass slide.

All the slides were labelled and immediately transferred to 95% Ethyl alcohol (Transport Medium) and sent to Pathology Department for Cytological study.

Evaluation was done by Cytology using Bethesda Classification.<sup>6</sup>

- Within normal limits
- Infection (specify organism)
- Reactive/reparative changes
- Atypical squamous cells of undetermined significance (ASCUS)
  - Atypical glandular cells of undetermined significance (AGUS)
- Low Grade Squamous intraepithelial invasion (LSIL)
- High Grade Squamous intraepithelial invasion (HSIL)
- Invasive carcinoma

### Procedure and Follow Up

Pap smear was advisable in women more than 21 years of age with women having history of contact.<sup>7</sup> It should be repeated after 3 to 5 years if the results are normal. If the results are abnormal, more frequent performance of tests like in every 6 months to 1 year are needed depending on the causative lesion.

High risk group were subjected to Human Papilloma virus (HPV) DNA Testing. Negative procedure value of one HPV DNA testing and two negative cytology test was 100%.

False negative tests can be < 1% after three consecutive negative tests.

False negative reports can be due to –

- Inadequate Sample
- Bloody Sample
- Faulty Staining
- Misinterpretation of pap smear by the cytologist.

In our study, we observed and analyzed age of patient, her presenting symptoms, and reports of cytology.

### STATISTICAL ANALYSIS

The data was analyzed by SPSS version 16 and descriptive statistics were presented as frequencies and percentages.

## RESULTS

In our study we analyzed 242 Pap smears taken from women presenting to Gynaecology OPD at Dahod District Hospital under Zydus Medical College, Dahod, Gujrat India between 25 to 70 years presenting with different gynecological complaints and as routine beyond the age of 45 years. In our study we have taken 242 women, in them 65 were between 25 to 35 years, 60 women were between 36 to 45 years, 82 women were between 46 to 55 years, women between 56 to 65 years were 28 and 7 women were above 65 years (table 1). Among the 242 women undergoing Pap smear tests, 72 women presented with chronic white discharge. Fifty-six women underwent Pap smear test as part of routine gynecological examination. Thirty-seven women presented with unhealthy cervix. Nine women underwent Pap smear test as part of post radio therapy for cervical cancer follow up. Postmenopausal women were.<sup>19</sup> Thirteen women were oral contraceptive pills users. Twelve women presented with pelvic inflammatory disease. Nine women presented with post hysterectomy chronic white discharge. Eight women had abnormal uterine bleeding and seven women presented with intermenstrual spotting (table-2). Among the 242 Pap smear reports analyzed, 161 (66.5%) reports showed inflammatory smears. Eighteen smears were given as Low grade squamous intraepithelial lesion (LSIL). Mild to moderate dysplasia was seen in 16 (6.6%) smears. High grade squamous intraepithelial lesion (HSIL) was seen in 15 (6.2%) smears. Possibility of malignancy was ruled out in ten smears. Bacterial vaginosis was seen in 7 (2.9%) smears. Post hysterectomy vault smears with normal reports were six. Atypical squamous cells of undetermined significance (ASCUS) were seen in 6 (2.5%) smears. Squamous cell carcinoma was diagnosed in three (1.3%) smears (table-3).

**Table 1: Distribution of patients according to age**

Age in years	No of patients
25 – 35	65
36 - 45	60
46 – 55	82
56 - 65	28
>65	07
TOTAL	242

**Table 2. Reasons for performing PAP smears**

Reasons for performing Pap smears	No of patients
Patients with chronic white discharge	72
Routine Pap smear	56
Unhealthy cervix	37
Post radio therapy follow up	09
Post menopause	19
OC pill users	13
Pelvic inflammatory disease	12
Post hysterectomy chronic white discharge	09
Abnormal uterine bleeding	08
Intermenstrual spotting	07

**Table 3. PAP smear analysis reports**

Pap smear analysis reports	No of patients	Percentage
Inflammatory smear	161	66.5%
Low grade squamous intraepithelial lesion (LSIL)	18	7.4%
Mild to moderate dysplasia	16	6.6%
High grade squamous intraepithelial lesion (HSIL)	15	6.2 %
No evidence of malignancy or normal	10	4.1 %
Bacterial vaginosis	07	2.9%
Post Hysterectomy vault smear normal report	06	2.5%
Atypical squamous cells of undetermined significance (ASCUS)	06	2.5%
Squamous cell carcinoma	03	1.3%
Total	242	100%

## DISCUSSION

It is accepted globally that early detection of precancerous lesions of cervix can be done by cytological examination of cervix by Pap smears. If not diagnosed and treated early, these precancerous lesions are likely to progress to invasive Cancers. It is proven that the cytological screening programs conducted in advanced countries played a major role in reducing mortality and morbidity due to Cancer Cervix. In our study we have taken 242 Pap smears taken from women presenting to Gynecology OPD at Dahod District Hospital under Zydus Medical College, Dahod, Gujrat India between 25 to 70 years presenting with different Gynaecological complaints and as routine beyond the age of 45 years. In study conducted by Sunita et al<sup>8</sup> 560 Pap smear reports were analysed. Whereas in study conducted by Mandakini et al<sup>9</sup> 995 Pap smear reports were analysed. In our study maximum number of women were between 45 to 55 years age group (33.8%). In study conducted by Sunita et al<sup>8</sup> maximum number of women were between 31 to 40 years age group (32.68%). In study conducted by Mandakini et al<sup>9</sup> between 15 to 30 years maximum number of women were studied. In our study abnormal Pap smear reports were 187(93.5%), whereas in study conducted by Sunita et al<sup>8</sup> 433(77.32%) reports were abnormal. In study conducted by Mandakini et al<sup>9</sup> abnormal Pap smear reports were 689(69.2%). Inflammatory smear reports were 161(66.5%) in our study, whereas in study conducted by Sunita et al<sup>8</sup> 403(71.96%) reports were inflammatory and in study conducted by Mandakini et al<sup>9</sup> inflammatory Pap smear reports were 572 (57.5%). Smears showing ASCUS (Atypical squamous cells of undetermined significance) were 6(2.5%) in our study. In study conducted by Sunita et al<sup>8</sup> 13(2.3%) reports showed ASCUS and in study conducted by Mandakini et al<sup>9</sup> reports showing ASCUS were 41(4.1%). Smears showing LSIL (Low grade squamous intraepithelial lesion) were 18 (7.4%) in our study.

In study conducted by Sunita et al<sup>8</sup> 11 (1.9%) reports gave LSIL and in study conducted by Mandakini et al<sup>9</sup> reports showing LSIL were 41(0.1%).

In our study HSIL (High grade squamous intraepithelial lesion) reports were 15 (6.2%), whereas in study conducted by Sunita et al<sup>8</sup> 2(0.3%) reports gave HSIL. In study conducted by Mandakini et al<sup>9</sup> HSIL reports were 1 (0.1%). Smears showing squamous cell carcinoma were 3 (1.3%) in our study. In study conducted by Sunita et al<sup>8</sup> 3 (0.5%) reports gave squamous cell carcinoma and in study conducted by Mandakini et al<sup>9</sup> reports showing squamous cell carcinoma were 7(0.7%). Though having few limitations in performing rural areas<sup>10</sup>, reports in our study like many other studies has shown the importance of Pap smear test in screening cervical cancer. By conducting health camps, increasing health awareness and performing Pap smear screening programmes the incidence of cervical carcinoma can be decreased.

## CONCLUSION

Pap smear tests are cost-effective and affordable by the patients. This Procedure doesn't need specialist and experts for collection of smear. Early detection of any abnormality or premalignant lesion will lead to prompt treatment at early stage of the disease and prolongation of life expectancy of affected women and reduce the mortality and morbidity of cancer cervix. Till today Pap smear test is the most useful screening procedure for cervical cancer.

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