

Pathological Evaluation of Papanicolaou Smears Reported in Akhtar Saeed Medical and Dental College, Lahore

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ABSTRACT

Background: Malignant lesions of the cervix represent the most frequent cause of mortality and morbidity in females and a common cause of cancer deaths worldwide. In Pakistan, the frequency of uterine and cervical neoplasms is increasing in the past few decades.

Aims: This retrospective study was conducted in AMDC to evaluate the importance of conventional Papanicolaou (Pap) smears in diagnosing the premalignant lesions of the cervix. **Materials and Methods:** The Pap smears of the female patients aged between 18 to 78 years received at AMDC during the period of five years were included. i.e. from January 2012 to June 2017.

Results: In our study, the frequency of benign and premalignant/malignant lesions was found to be 94% and 3.4% respectively. The neoplastic lesion reported were 6, among these lesion were low-grade squamous cell intraepithelial lesions (LSILs) (2, 33%), atypical squamous cells of undetermined significance (ASCUS) (3, 50%) and high-grade squamous cell intraepithelial lesions (HSILs) (1, 16%).

Conclusion: The cytopathological examination of papanicolaouis smear of the cervix is well suited for diagnosing benign and neoplastic lesions of cervix.

Keywords: Papanicolaou smear, uterine cervical neoplasms, squamous cell carcinomas.

INTRODUCTION

The neoplasms of the female genital tract represent the most frequent cause of mortality and morbidity worldwide. In Pakistan, the fourth most common cancer reported in females is cervical¹. Its incidence in Pakistan is low but the mortality is high as compared to the western world. This increased mortality is the consequence of delay in the presentation of females to healthcare facilities²⁻³.

The Pap smear is a screening test used for the cervical and uterine lesions. The early stages of cervical cancer can be detected by using this test. In the developed countries, the incidence and mortality resulting from cervical neoplasm is decreasing due to regular screening. Unfortunately, the developing countries such as Pakistan lack the facility to carry out widespread Pap smear screening, thus resulting in increase in mortality⁴⁻⁶. The reporting of pap smears is done by using Bethesda system which was proposed in 2001. The pathologists use a term known as "ASCUS" to describe the cellular changes that are more marked than the reactive changes but these changes fall short of definitive diagnosis of SIL¹⁰⁻¹³.

This study was conducted to evaluate the importance of Pap smears in the detection of benign and premalignant/malignant lesions of the uterus and cervix reported at pathology department of Akhtar Saeed Medical College from 2012 to 2017.

MATERIALS AND METHODS

This was a retrospective study which included 175 women aged between 18 and 78 years. The relevant history and

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other information were collected from all patients before the smear was taken⁷.

The women who were between 10 to 20 days of menstrual cycle were included. It was also ensured that they had not used any local medication or tampons for the past 24 hours. A speculum was used to dilate the cervix and then the scrapings from in and around the cervix were collected using a specially designed scraper. The scrapings were then spread on a glass slide and dipped in liquid fixative. The smears were air dried and sent to cytopathology laboratory for microscopic examination. In the laboratory, staining of slides was done by the conventional Papanicolaou technique, to highlight cytoplasmic keratinization⁸⁻⁹. After staining, qualified cytotechnologist and histopathologist examined the smears under a light microscope and classified the smears according to Bethesda system 2001¹⁰.

Statistical analysis: The frequency of various lesions was calculated using %ages and compared with each other.

RESULTS

During this study, 175 Pap smears were examined in our laboratory and out of these 6 smears showed premalignant or malignant changes. The mean age of the subjects was 34.6 years (Table 1).

In our study, 165 (94%) patients were diagnosed with benign lesions and 6 (3.4) cases showed malignant cytology. However, 4 samples were inadequate for any diagnostic opinion.

The table above shows the premalignant and malignant lesions reported, which account 3.4% of all studied cases. Three cases (50% of malignant and 1.7% of all cases) were ASCUS, while two cases were of LSILs (33% of malignant and 1.5 % of all cases) and one case of HSILs (16% of malignant and 0.5% of all cases) was reported after histological examination.

Table 1: Cytological finding in pap smears of 175 cases

| | Incidence | %age |
|---------------------------------|-----------|------|
| Total no. of neoplastic lesions | 6 | 3.4 |
| Total no. of benign lesions | 165 | 94 |
| Inadequate samples | 4 | 2.2% |

Table 2: cytological neoplastic cases reported

| Neoplastic cases | Incidence | %age |
|------------------|-----------|------|
| LSILs | 2 | 33 |
| ASCUS | 3 | 50 |
| HSILs | 1 | 16 |

DISCUSSION

The most common modes of presentation in our study group were abnormal vaginal discharge and postmenopausal bleeding. The neoplastic lesions (benign or premalignant/malignant) were diagnosed in the age group of 18 to 78 years.

In our study, the frequency of benign, neoplastic, and inadequate samples was found to be 94%, 3.4%, and 2.2%, respectively. The mean age group was 35. In the present study, we reported 165 cases to be benign and 6 neoplastic. Among the neoplastic lesions were two cases of LSILs (33%), three cases of ASCUS (50%) and one case of HSILs (16%).

In our study, there three cases (1.7%) which fell in the category of ASCUS showing enlarged nucleus and a slight increase in the nuclear/cytoplasmic ratio. These cells revealed mild hyperchromasia, anisocytosis (variation in size and shape of nucleus) and occasional binucleation. However, the chromatin remained finely granular, with smooth outline and limited irregularities.

Among the total cases, two (1.15%) smears revealed LSIL with scattered or sheets of atypical cells seen against an inflammatory background. The superficial or 'mature' cells showed the nuclear abnormalities in general. Moderate anisocytosis was identified. The nucleoli were indistinct and nuclear membrane revealed slight irregularities in some cells. The distribution of chromatin was regular and the cell borders were distinct with clear cytoplasm. The diagnosis of LSIL was not made in those smears which showed perinuclear halos in the absence of nuclear abnormalities.

In our study group, only one case (0.5%) was diagnosed with HSIL. On microscopy, the cells were arranged in sheets mostly but few were also seen singly scattered. There were more marked nuclear changes in HSIL than in LSIL. The enlargement of nucleus in HSIL was in the same range as that seen in LSIL but the cytoplasm was decreased, consequently causing marked anisocytosis. The nucleus showed hyperchromasia and prominent nucleoli; the chromatin was coarsely granular and more irregularly distributed as compared to LSIL. The cells as well as their nuclei showed variation in size and shape markedly, with the appearance of caudate and spindle cells showing orangeophilic cytoplasm¹⁴⁻¹⁶.

CONCLUSION

Neoplastic gynecological diseases are not uncommon in our set up and the Pap test is an effective modality for their diagnosis.

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