



UTILITY OF PAP SMEAR IN A TERTIARY CARE HOSPITAL: A CROSS-SECTIONAL STUDY

Dr Deepika*

MD Pathology, Assistant Professor, Department Of Pathology, Karnataka Institute Of Medical Sciences (KIMS), Hubballi - 580021, Karnataka. *Corresponding Author

Dr Deepa S Rathod

MD Pathology, Assistant Professor, Department Of Pathology, Akash Institute Of Medical Sciences And Research Centre.562110, Devanahalli, Bangalore.

ABSTRACT

Cervical cancer is an increasing health problem, comprising approximately 12% of all cancers among women worldwide. This is may be due to lack of awareness amongst the women of developing countries. It is the fourth most common carcinoma in the world. This study was conducted to evaluate the use of Pap smear test as a screening method in differentiating inflammatory, premalignant and malignant lesions of cervix in females attending a tertiary care hospital. A retrospective study was conducted in the Department of Pathology, Mahavir Institute of Medical Sciences (MIMS), Vikarabad, Telangana. A total of 250 cervical pap smears of women with age 20 to 75 years were included. All the smears were reported as per the 2014 Bethesda system. Details were collected from Cytology records of Department of Pathology. Statistical analysis was done using SPSS version 16 and the data was analyzed and tabulated. In our study, we found 7.2% Unsatisfactory smears, 35.4% cases as Negative for intraepithelial lesion/malignancy (NILM), 50.9 % Infection/Inflammatory smears, 3.2% Atypical squamous cells of undetermined significance (ASC-US), 0.8% Atypical squamous cells, cannot exclude high-grade lesions (ASC-H), 1.3 % Low-grade squamous intraepithelial lesion (LSIL), 0.8% High-grade squamous intraepithelial lesion (HSIL) and 0.4% cases of Squamous cell Carcinoma (SCC). Pap smear testing is a simple, non-invasive, economical procedure which can detect premalignant and malignant lesions of cervix. It is a sensitive screening test for early detection of cervical dysplasia, thus can be helpful in decreasing the morbidity and mortality.

KEYWORDS : Pap smear, cervical cytology, NILM, ASCUS, ASC-H, LSIL, HSIL, Squamous cell carcinoma

INTRODUCTION

Cancer of uterine cervix is a leading cause of mortality and morbidity among women world-wide. Cervical cancer is the fourth most common cancer in women. In developing countries, it is the most common gynaecological cancer and one of the leading causes of cancer death among women.¹ The older age groups are most commonly affected, with increased relative frequency in young white females. Early marriage, low socio-economic level and multiparity have proven to be in association with a higher incidence of cervical carcinoma. Age at first intercourse being the single most important factor.² The usual presenting symptoms with which the women come to the clinic are pelvic pain, discharge, and/or abnormal bleeding.³ By simple pap screening test cervical cancer and its precursor lesions can be detected and treated early. It is a routine screening test with sensitivity of 70- 80% in detecting HSIL.⁴ Routine Pap screening guidelines if followed results in significant decrease in morbidity and mortality associated with cervical cancers. Follow-up with repeat Pap in 6 or 12 months is done as per guidelines if any epithelial abnormality is present.⁵ Many centers follow Bethesda system (2014) for Pap smear reporting, resulting in uniformity in reporting format.⁶

MATERIALS AND METHODS

The present study was a retrospective study conducted over a period of one year in the Department of Pathology, Mahavir Institute of Medical Sciences (MIMS), Vikarabad, Telangana. A total of 250 cervical pap smears of women with age 20 to 75 years were included in the study.

Inclusion Criteria

Women between 20 to 75 years of age with clinical history were included.

Exclusion Criteria

Women below 20 years and women above 75 years were excluded. Evaluation was done by cytology using Bethesda Classification 2014 as follows.

Specimen Adequacy

It included- (a) satisfactory for evaluation (note presence or absence of endocervical transformation zone component); and (b) unsatisfactory for evaluation.

Negative for intraepithelial lesion or malignancy (NILM)

Organisms

Organisms with (a) trichomonas vaginalis; (b) fungal organisms morphologically consistent with Candida species; (c) shift in flora suggestive of bacterial vaginosis; (d) bacteria morphologically

consistent with Actinomyces species; and (e) cellular changes consistent with herpes simplex virus.

Other non-neoplastic findings

It included- (a) reactive cellular changes associated with inflammation (includes typical repair); (b) radiation; (c) intrauterine contraceptive device; (d) glandular cells status post-hysterectomy; and (e) atrophy.

Epithelial Cell Abnormalities

Squamous cells

It included- (a) atypical squamous cell (ASC); (b) of undetermined significance (ASCUS); (c) cannot exclude high-grade lesion (ASC-H); (d) low-grade squamous intraepithelial lesion (LSIL); (e) high-grade squamous intraepithelial lesion (HSIL); and (f) squamous cell carcinoma.

Glandular cells

It included- (a) atypical glandular cells (AGC) (specify endocervical, endometrial, or not specified); (b) atypical glandular cells, favour neoplastic (specify endocervical or not specified); (c) endocervical adenocarcinoma in situ (AIS); and (d) Adenocarcinoma.

RESULTS

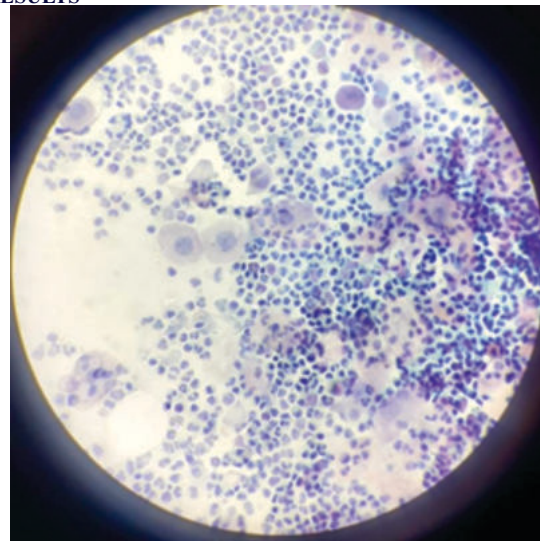


Figure 1- Inflammatory smear displaying sheets of intermediate

squamous cells are seen. Few of the cells show nucleomegaly (reactive cellular changes) with background showing severe neutrophilic inflammatory infiltrate.

In our study, out of 250 cases, we found 18 cases (7.2%) Unsatisfactory smears, 88 cases (35.2%) as Negative for intraepithelial lesion/malignancy (NILM), 127 cases (50.8 %) Infection/Inflammatory smears, 8 cases (3.2%) [Figure 1]. Atypical squamous cells of undetermined significance (ASC-US), 2 cases (0.8%) Atypical squamous cells, cannot exclude high-grade lesions (ASC-H), 4 cases (1.6%) of Low-grade squamous intraepithelial lesion (LSIL), 2 cases (0.8%) High-grade squamous intraepithelial lesion (HSIL) [Figure 2] and 1 case (0.4%) cases of Squamous cell Carcinoma (SCC) [Figure 3]. [Table 1]

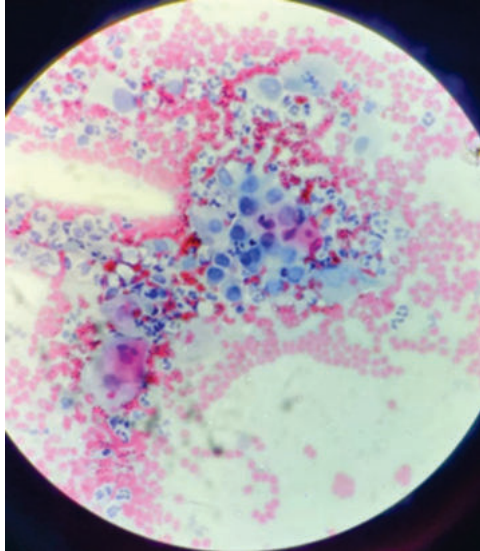


Figure 2- HSIL displaying dysplastic squamous cells showing pleomorphism, nucleomegaly with irregular nuclear membrane, high N:C ratio and hyperchromatism.

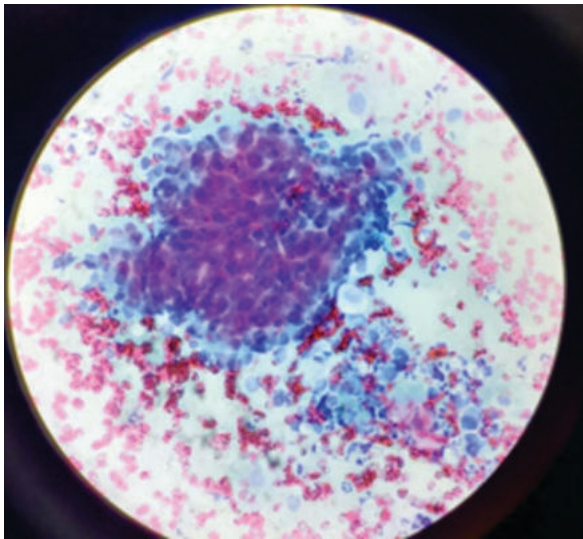


Figure 3- SCC displaying aggregates of highly pleomorphic squamous dysplastic cells showing high N:C ratio, hyperchromatism with dirty background.

Table 1: Findings On Pap Smear

Impression	No. Of cases	Percentage (%)
Unsatisfactory smears	18	7.2
Negative for intraepithelial lesion/malignancy (NILM)	88	35.2
Infection/Inflammatory smears	127	50.8
Atypical squamous cells of undetermined significance (ASC-US)	08	3.2

Atypical squamous cells, cannot exclude high-grade lesions (ASC-H)	02	0.8
Low-grade squamous intraepithelial lesion (LSIL)	04	1.6
High-grade squamous intraepithelial lesion (HSIL)	02	0.8
Squamous cell Carcinoma (SCC)	01	0.4

DISCUSSION

Cervical cancer and breast cancer are the leading cause of mortality in developing countries like India. Cervical cancer is the most common cancer for which a sensitive screening Pap test and screening guidelines are available³. In our study, out of 250 cases, the most common epithelial abnormality was ASCUS and least common was SCC.

Studies done by Garg P et al¹ reported infection/inflammatory lesions (64.54 %) as the commonest diagnosis on pap smear which was similar to our studies. They found LSIL (1.82 %) as the most common epithelial cell abnormality which was different from our study as we found ASC-US (3.2%) as the most common epithelial abnormality.

Study conducted by Kumar Ninder et al² showed 35% cases of NILM including inflammatory smear as the commonst diagnosis on Pap smear examination which was similar to our study. Among epithelial cell abnormality, they found ASC-US (4.4%) as the most common and SCC (0.4 %) as the least common diagnosis, which was similar to our study.

In a study conducted by Manju Kumari and Sachin Kolte³, the most common epithelial cell abnormality found was ASC-US with 102 out of 325 cases and least common was SCC. This result was similar to our study.

In study done by Ekta Rani et al⁴, maximum number of cases reported as Non-Specific Inflammatory Smears (57.57%), which was similar to our findings. In epithelial cell abnormality, they found incidence of both ASC-US and ASC-H as the commonest with 0.86 %, which was slightly different from our study as we found ASC-US as the most common epithelial cell abnormality followed by LSIL.

Pushp Lata Sachan et al⁸ reported NILM (48.84 %) as the most common finding on Pap smears examination, followed by Infection/Inflammatory conditions (42.66 %). This was different from our study as we found Infection/Inflammatory smears (50.8 %) being more common than NILM (35.2 %).

REFERENCES

- Garg Paridhi, Mishra Shweta, Divedi Pragati. Cervical Pap smear study and its utility in cancer screening in patients attending out-patient department in a tertiary care hospital. IJRCOG. 2021; 10(9):3521-3524
- Kumar Ninder, Kaur Manmeet, Kaur Mohanvir. Study of cervical lesions by Pap smear screening in 1000 cases in a Tertiary care hospital Punjab India. EJMCM. 2022; 9(4): 1744- 1752.
- Kumari Manju, Kolte Sachin. Experience of cervical Pap smear screening in tertiary care hospital. IJMSPH. 2020; 9(1): 68-71.
- Rani Ekta, Thukral Shaffy, Suri Vijay. Study of cervical Pap smear in a Tertiary Care Hospital. IJCMR. 2019; 6(8): 2454-2456.
- Saslow S, Solomon D, Lawson HW, Killackey M, Kulasingam SL, Cain J, et al. American cancer society, american society for colposcopy and cervical pathology, and American society for clinical pathology screening guidelines for the prevention and early detection of cervical cancer. J Low Genit Tract Dis 2012; 16:175-204.
- Solomon D, Davey D, Kurman R, Moriarty A, O'Connor D, Prey M, et al. The 2001 Bethesda system: Terminology for reporting results of cervical cytology. JAMA 2002; 287:2114-9.
- Kothari S, Gohel A, Dayal A, Shah R, Patel S. Pap smear a tool for detection of cervical intraepithelial lesions in health check up schemes: A study of 36,740 cases. Int J Res Med 2014; 3:12-5.
- Sachan Pushp Lata, Singh Meenakshi, Patel Munna Lal, Sachan Rekha. A Study on Cervical Cancer Screening Using Pap Smear Test and Clinical Correlation. Asia Pac J Oncol Nurs. 2018; 5:337-41.