

Spectrum of Cervical Lesion in Papanicolaou Smears Examination in a Tertiary Care Hospital

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Abstract: Introduction: Carcinoma of cervix is a leading cause of mortality and morbidity among women worldwide. Early detection and timely treatment of premalignant lesion can prevent cancer of cervix. Regular screening by PAP smear is a simple, cost effective and efficient method to prevent cervical cancers. Material and methods: This prospective study was done from 1st January 2021 to 26th August 2021 includes 1000 patients whose Pap smear examination was done in our tertiary care hospital for various gynecological problems. Wet fixed smear prepared by gynecologist were sent to cytology laboratory for staining and reporting. Reporting was done by cytopathologists as per The Bethesda System (TBS). Results: Among 1000 cases 286 were unsatisfactory (28.6%), 231 (23.1%) were normal cases (NILM), abnormal smears (NILM with severe inflammation (3+, 4+), trichomonasvaginialis, candida, atrophy) were 459 (45.9%), 24 (2.4%) were cases with epithelial cell abnormalities. ASCUS was the most commonly found epithelial cell abnormality (41.6%) out of 24 cases. Conclusion: Incidence of cervical lesions ranging from infective pathology to preneoplastic/neoplastic pathology can be lowered with effective implementation of cervical Pap screening program. However, skilled staff, proper sampling, adequate resources and use of latest techniques (LBC) can help improve the sensitivity of cervical Pap smear screening.

Keywords: Pap smear, Bethesda system, Carcinoma cervix

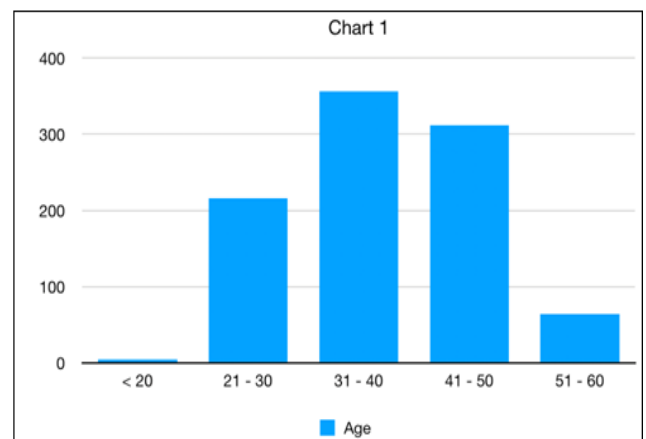
1. Introduction

Cervical cancer ranks fourth most common cancer worldwide.¹ In India, it is the second most common cancer as females rarely come for routine cervical PAP screening and visit only when symptomatic.² Cervical Pap smear examination is an effective procedure to detect premalignant, malignant and various infective lesions of cervix. Being an OPD procedure which is cost effective and following the Bethesda system for reporting which increases sensitivity, cervical Pap smear examination provides clear guidance for clinical management. We aim to study the spectrum of Cervical lesions on PAP smear in our tertiary care hospital in Mumbai.

2. Materials And Methods

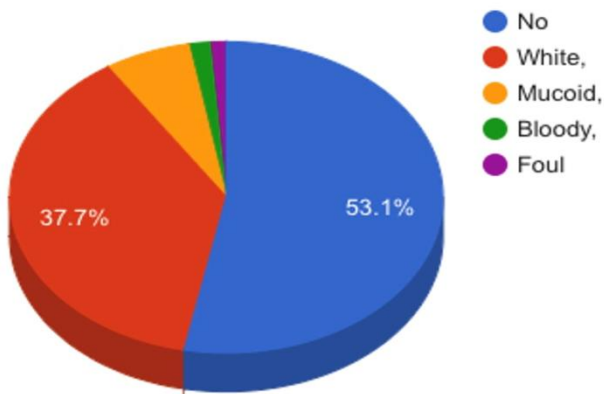
Propectivestudy of 1000 cases of cervical Pap smear were included in this study. The patients were in the age range of 17-80 years, having complaints like vaginal discharge, bleeding per vagina or something coming out per vagina, post-coital bleeding, intermenstrual bleeding, and pain in lower abdomen. Smears were taken by gynaecologist using modified Ayres wooden spatula which was inserted and rotated 360 degree over cervix. Both ectocervix and endocervix were sampled. The cellular material obtained on the spatula and cyto brush was quickly smeared on a clean glass slide, labeled, fixed in 95% ethyl alcohol immediately and sent to cytology department for staining and reporting.

3. Results



Graph 1: Age distribution of patients

S. No	Age Group	Cases
1	< 20 years	4
2	21-30	216
3	31-40	356
4	41-50	312
5	51-60	64
6	61-70	36
7	71-80	8



Graph 2: Pie Diagram: shows presenting symptoms of patients

Table 1: Spectrum of Cervical Lesions on PAP smear Impressions

Impression	Number of cases
NILLM	231
NILLM with inflammation	328
NILLM with Trichomonas Vaginalis	12
NILLM with Candida	25
NILLM with Atrophy	94
ASCUS	10
LSIL	4
ASCH	4
HSIL	4
SCC	1
AGUS	1

Table 2: Distribution of Cytology impressions in study patients

Unsatisfactory	286 (28.6 %)
NILM	231 (23.1 %)
Abnormal	483 (48.3 %)

Table 3: Cellularity on PAP smear

Adequate	648
Moderate	227
Scanty	125

Table 4: Grading of inflammation on cytology

1 +	2 +	3 +	4 +
230	282	182	146

Table 5: Cervix on examination

Healthy	Ulcer/erosion	Mass
932	52	16

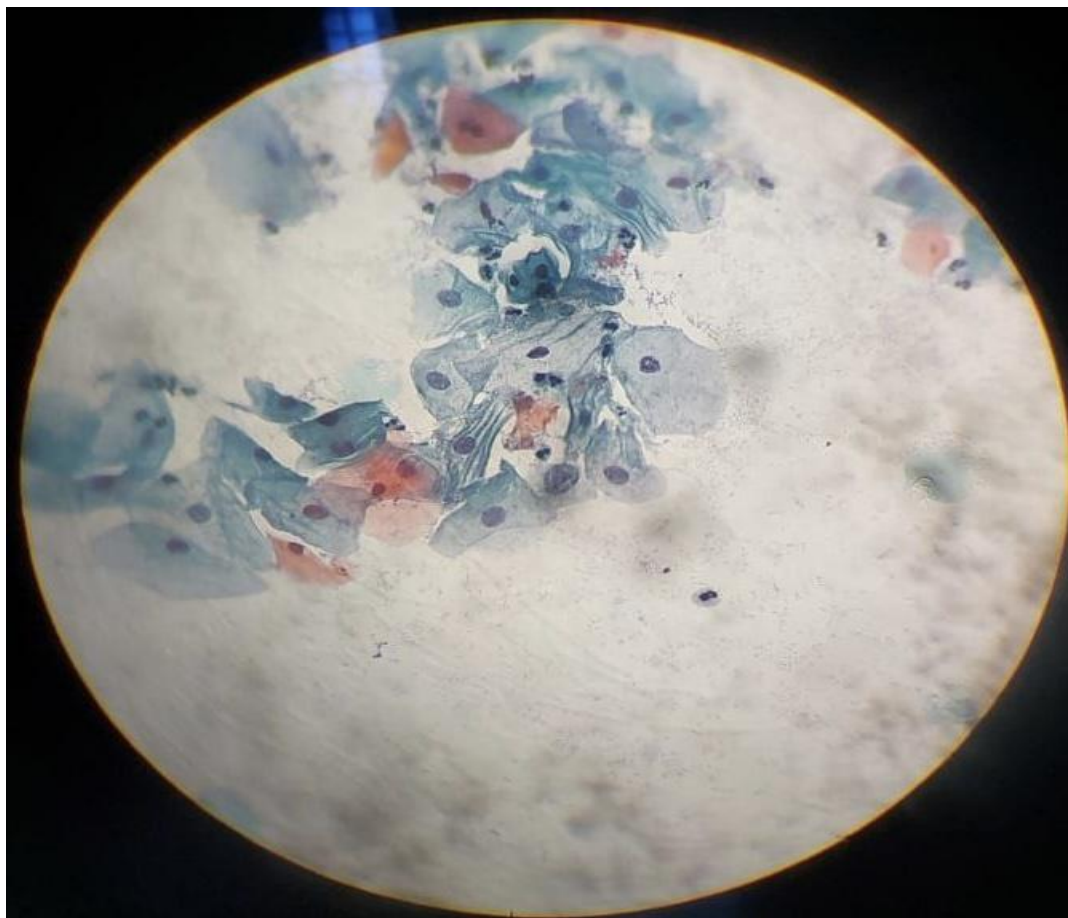


Figure 1: High grade squamous intraepithelial lesion (HSIL)



Figure 2: Low-grade squamous intraepithelial lesions (LSIL):Perinuclear cavitation and nuclear enlargement

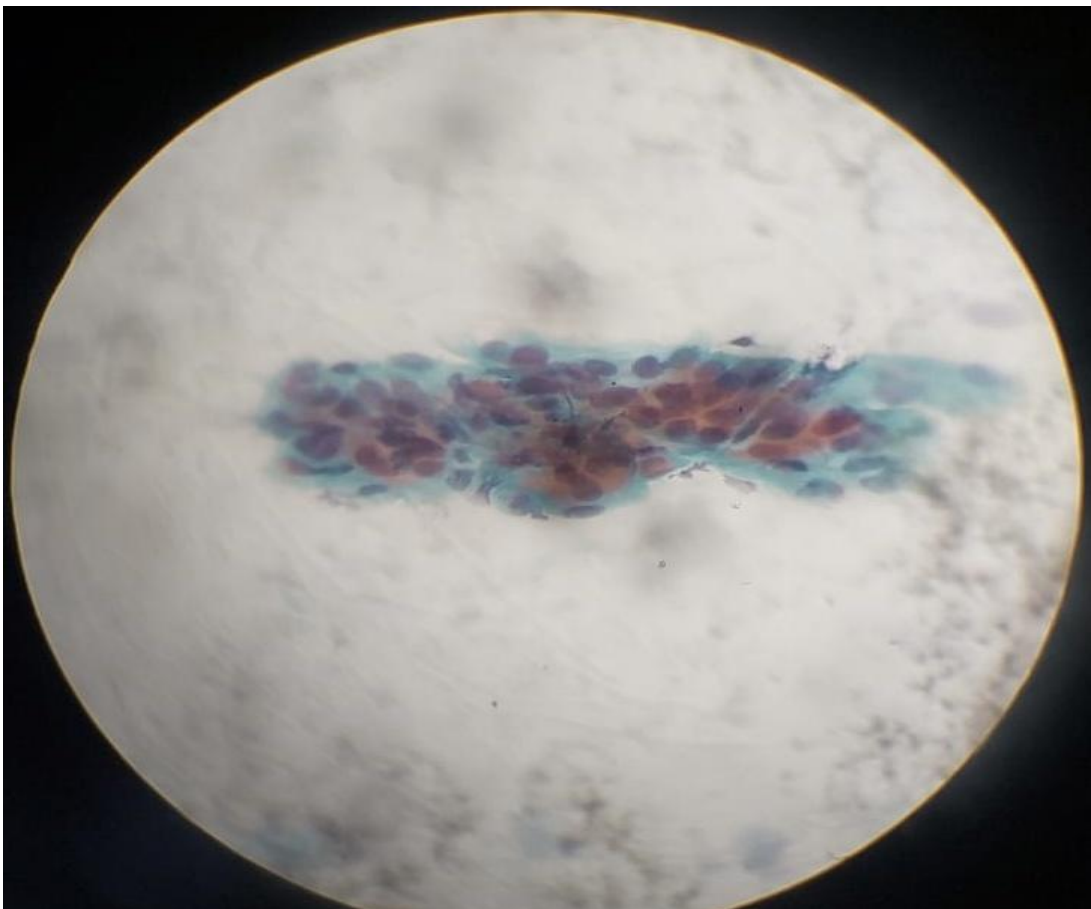


Figure 3: Atypical squamous cells- Single atypical cell with high N/C ratio. Nuclear irregularity and hyperchromasia

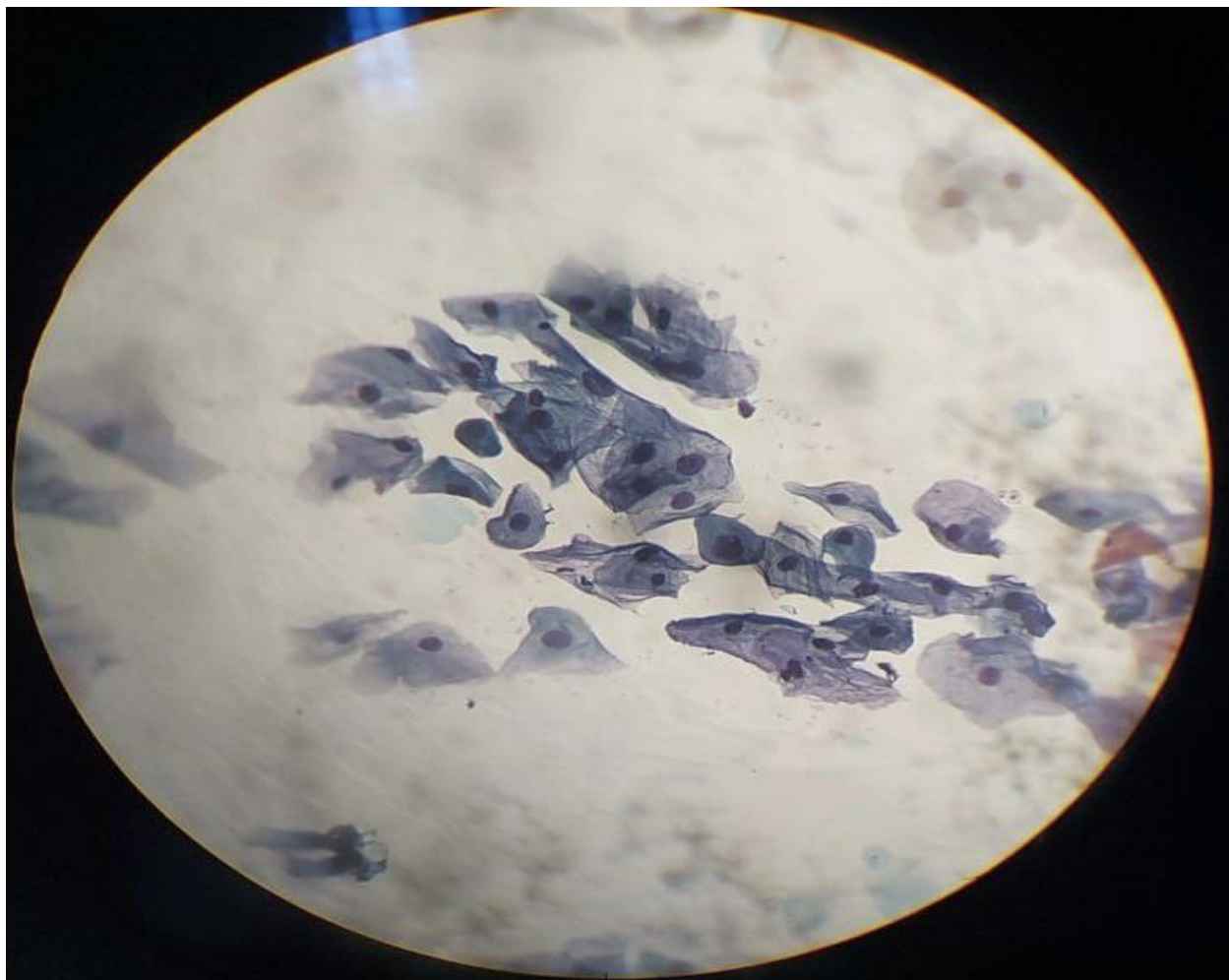


Figure 4: Atypical squamous cells of undetermined significance (ASC-US):Single atypical cell with nucleus size two to three times larger than neighbors with slight contour irregularity

4. Results

Majority of cases in our study were in the age range of 21-50 years i.e in age when they are in reproductive and sexually active age group. Few cases belonged to the age group of 51-60 years and very few cases were in teens and beyond 60 years of age. Around 50% of patients presented with discharge per vaginum. Per speculum examination revealed healthy cervix in majority of cases. Percentage of unsatisfactory smears was 28.6. Adequate cellularity for reporting was obtained in 64.8% cases. Significant inflammation (3+ & 4+) was seen in 32.8% cases. Candida was identified in 2.5% of cases. Trichomonas Vaginalis was identified in 1.2% cases. NILM was the most common impression in the cases studied. ASCUS was the most common epithelial cell abnormality (1%). LSIL, HSIL & ASCH each accounted for 0.4% of all cases. 1 case of squamous cell carcinoma was reported on PAP smear.

5. Discussion

Cervical cancer is a leading cause of death in women. An effective screening program for early detection of pre-cancerous lesions is needed, so that timely intervention can be done. In view of a long premalignant phase, progression to cancers can be prevented and cure can be attained. Pap smear examination is an effective screening program for

detection of infective, precancerous and cancerous lesions involving cervix.³

Majority of cases in our study i.e 35.6% were in 4th decade which is similar to findings in study by Bal et al⁴ (45.3%).

2.4% cases in our study were premalignant or malignant lesions while 97.6% cases were reported as NILM. This finding is in concordance with study by Tailor HJ et al who reported 98.10 % cases as benign and inflammatory and 1.9% cases as premalignant or malignant.⁵

Of 36.5% cases in the present study had 18.7 % cases had specific severe (3+, 4+) inflammation (Bacterial vaginosis (15%), Candida (2.5%) and trichomonas (1.2%)) & 17.8 % cases had non specific severe inflammation. In a study by Babuet al.³ 28.47% cases had non specific inflammation, 15.51% cases had trichomoniasis and 4.2% had bacterial vaginosis. The incidence of bacterial vaginosis/ altered bacterial flora in our study is high.

Cervical discharge was the commonest presenting complaint in 46.9% females in our study. The discharge was white predominantly followed by mucoid and bloody nature of discharge. Bamanikaret al⁶ also found vaginal discharge as the commonest presenting complaint.

The most common epithelial cell abnormality (ECA) in our study was ASCUS(1%). The incidence of ASCUS in a study by Kumari and Kolte was 0.667%. The incidence of AGUS in our study was 0.1% while it was 0.46% in study by Kumari and Kolte.⁷

The total of ASCUS, ASC-H, LSIL, HSIL, AGUS & carcinoma i.e the ECA rate varied between 1.5 and 12.60 % in various studies.^(8,9) In our study the incidence of ECA rate was 2.4%.

In our study the incidence of unsatisfactory smears was 28.6% and the incidence of scant cellularity was 12.5%. The smears were reported as unsatisfactory on basis of scant cellularity, drying artifacts and transition zone not sampled. Our's is a charitable tertiary care hospital with attached medical college. Trainee post-graduate students are rotated and trained in various disciplines and conventional Pap smears are screened. The high incidence of unsatisfactory and scantily cellular smears can be attributed to these limitations of our setup.

6. Conclusion

Incidence of cervical lesions ranging from infective pathology to preneoplastic/neoplastic pathology can be lowered with effective implementation of cervical Pap screening program. However, skilled staff, proper sampling, adequate resources and use of latest techniques (LBC) can help improve the sensitivity of cervical Pap smear screening.

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