

Cervical Pap Smear Cytology at a Tertiary Hospital and its Correlation with Clinical Findings: An Observational StudyRimjhim Kumari¹, Pallavi Mehra², K. M. Prasad³, N. K. Bariar⁴¹PG-Student, Department of Pathology, Patna Medical College and Hospital, Bihar, India²Assistant Professor, Department of Pathology, Patna Medical College and Hospital, Bihar, India³Associate Professor, Department of Pathology, Patna Medical College and Hospital, Bihar, India⁴Professor and HOD, Department of Pathology, Patna Medical College and Hospital, Bihar, India

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Conflict of interest: Nil

Abstract**Aim:** The present study is intended to evaluate the pattern of cervical Pap smear cytology at a tertiary hospital and to correlate it with clinical findings.**Methods:** This cross sectional study was carried out at Department of Pathology, Patna Medical College and Hospital, Bihar, India during for the period of two years and total 1000 patients were screened. The patients were in the age range of 19-69 years, having complaints like watery vaginal discharge, bleeding per vaginal, intermenstrual bleeding, post-coital bleeding, something coming out per vagina, foul smelling discharge and itching in private parts.**Results:** The result showed that maximum number of cases was in the age group 30-39 years constituting 36% of the total cases followed by age group 20-29 yrs. The oldest case was of age 65 years. Minimum percentage (2%) of cases were under 60-69 age group. The result depicted vaginal discharge was the commonest chief complaint followed by lower abdominal pain. Total 46% showed inflammatory lesion, 1% showed atrophy, 0.5% showed ASCUS, 0.5% showed LSIL, 0.5% showed HSIL, 0.5% showed SCC, 10% showed metaplasia.**Conclusion:** This study emphasized the importance of Pap smears screening for early detection of premalignant and malignant lesions of cervix.**Keywords:** Pap smear, Epithelial cell abnormality, ASCUS.

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Introduction

Cancer of the cervix is a global health problem and it is a leading cause of mortality and morbidity among women worldwide. Every year in India, 122,844 women are diagnosed with cervical cancer and 67,477 die from the disease. [1] Cervical cancer is the second most common cancer in women aged 15-44 years. India also has the highest age standardized incidence of cervical cancer in South Asia Bangladesh, Iran. [1] Cancer of cervix is readily preventable, by early detection and appropriate timely treatment of its precursor lesions by simple Pap screening test. But women usually present to the clinic only when they have symptoms, such as pain, discharge, and/or abnormal bleeding. [2]

Cervical epithelial cell abnormalities in the Pap smear represents a spectrum of intraepithelial lesions that lie along the pathway, from mild-to-severe dysplasia to invasive cancer. [3] Though Pap smear is a routine screening test, the overall sensitivity in detection of high grade squamous

intraepithelial lesion (HSIL) is 70 -80%. [4] The Bethesda System (TBS) for reporting the results of cervical cytology was developed as a uniform system of terminology that could provide clear guidance for clinical management.

India has the highest age standardized incidence of cervical cancers in South Asia. [5] By simple pap screening test cervical cancer and its precursor lesions can be detected and treated early. Pap smear is a routine screening test with sensitivity of 70-80% in detecting HSIL. [6] Usually Pap smear screening test is recommended starting around 21 years of age upto 65 years. Repeated examination is recommended after every three years interval and in case of abnormal Pap smear report follow up is advisable six monthly. [7] In 1988, the Bethesda system of reporting has been introduced to classify the lesions into low- and high-grade intraepithelial lesions. It provides uniform system of terminology which makes management and treatment simple. [8]

The present study is intended to evaluate the pattern of cervical Pap smear cytology at a tertiary hospital and to correlate it with clinical findings.

Methods

The prospective study was carried out at Department of Pathology, Patna Medical College and Hospital, Bihar, India for the period of two years and total 1000 patients were screened. The patients were in the age range of 19-69 years, having complaints like watery vaginal discharge, bleeding per vaginal, intermenstrual bleeding, post-coital bleeding, something coming out per vagina, foul smelling discharge and itching in private parts.

History and symptoms along with parity were recorded. Smears were taken by trained technician using modified Ayres wooden spatula which was inserted and rotated 360 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 subsequently stained by Pap stain. After staining, slides were mounted with DPX (Distrene dibutyl phthalate xylene), screened and reported by two cytopathologist under light microscope according to the 2001 Bethesda system.

Results

Table 1: Distribution of Cases according to age

Age group in years	No. of cases	Percentage (%)
20-29	280	28%
30-39	360	36%
40-49	220	22%
50-59	120	12%
60-69	20	2%
Total	1000	100

Table 1 showed that maximum number of cases was in the age group 30-39 years constituting 36% of the total cases followed by age group 20-29 yrs. The oldest case was of age 65 years. Minimum percentage (2%) of cases were under 60-69 age group.

Table 2: Distribution of cases according to symptoms

Symptoms	No. of cases	Percentage (%)
Asymptomatic	50	5%
Vaginal Discharge	300	30%
Pain lower abdomen	200	20%
Intermenstrual bleeding	150	15%
Post- Coital Bleeding	100	10%
Post- menopausal Bleeding	80	8%
Something coming out of vagina	60	6%
Burning Micturation	60	6%
Total	1000	100

Table 2 depicts Vaginal discharge was the commonest chief complaint followed by lower abdominal pain.

Table 3: Cytological findings

Diagnosis		No. of cases	Percentage	
NILM	Normal	200	20%	
	Inflammatory	Non-specific	400	40%
		Candida	50	5%
		Trichomonas	10	1%
	Reactive	200	20%	
Metaplasia	100	10%		
Atrophy		10	1%	
Radiation		5	0.5%	
ASCUS		5	0.5%	
LSIL		5	0.5%	
HSIL		5	0.5%	
SCC		15	1.5%	

Total 46% showed inflammatory lesion, 1% showed atrophy, 0.5% showed ASCUS, 0.5% showed LSIL, 0.5% showed HSIL, 0.5% showed SCC, 10% showed metaplasia. Cytological findings broadly classified into unsatisfactory smears, normal and abnormal smears. There were 700

(70%) abnormal Pap smears (benign cellular changes of inflammation as well as Epithelial Cell Abnormalities (ECA), with 20% normal cases and 10% unsatisfactory samples. Inadequate smear are reported unsatisfactory. They did not show adequate number of well visualized and preserved

squamous cells either less in number or observed

by inflammatory cells or blood.

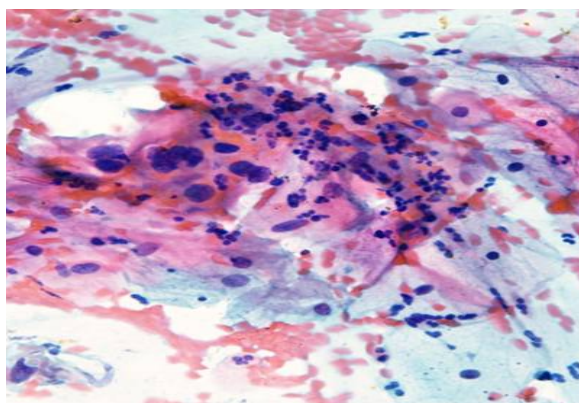


Fig. 1: HSIL

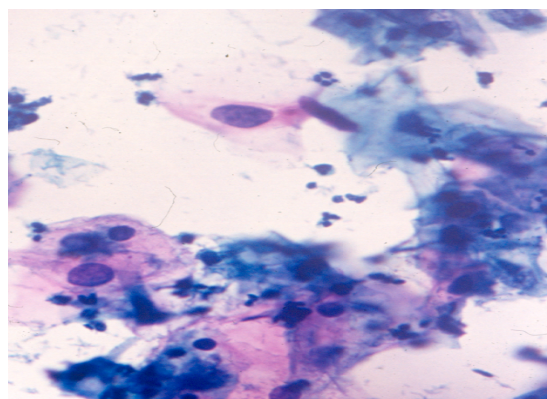


Fig. 2: LSIL

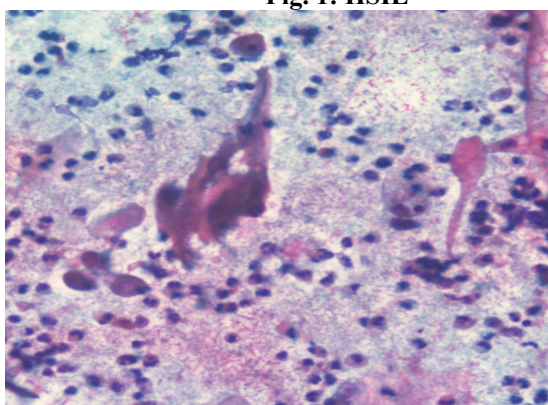


Fig. 3: SCC

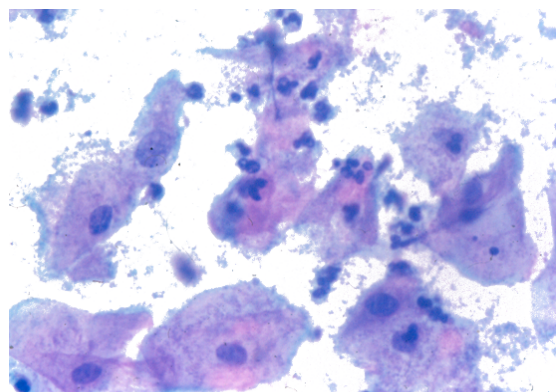


Fig. 4: Bacterial vaginosis clue cell seen

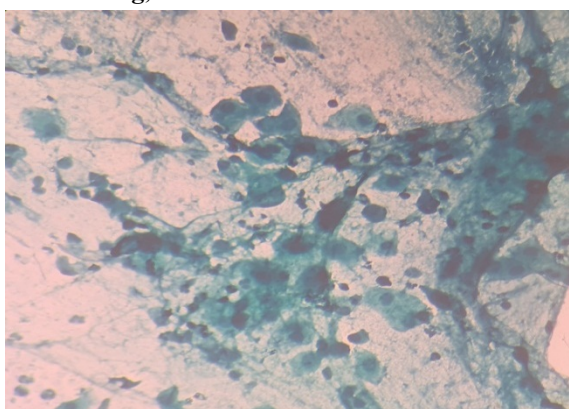


Fig. 5: ASCUS

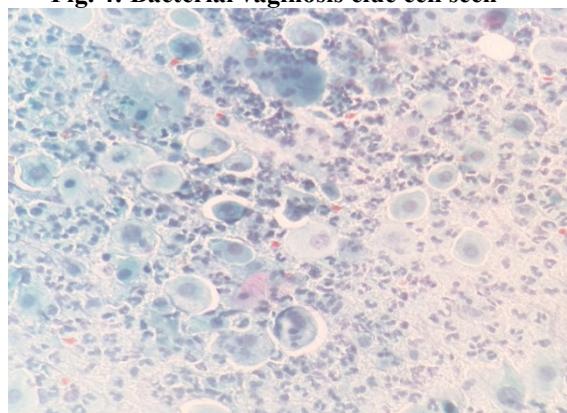


Fig. 6: Atrophic inflammatory

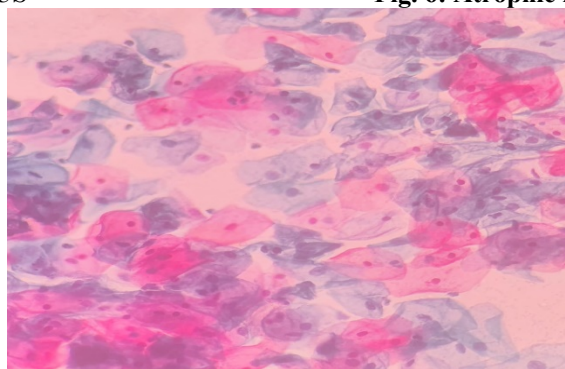


Fig. 7: Normal Smear

Discussion

Cervical cancer is an increasing health problem, comprising approximately 12% of all cancers among women worldwide. [9] According to the world cancer statistics, developing and low resource countries have more than 80% of all the cervical cancers due to lack of awareness and difficulty in running cytology-based screening programmes. [10]

Cancers of uterine cervix and breast are the leading malignancies seen in females of India. There should be an effective mass screening program aimed at specific age group for detecting precancerous condition before they progress to invasive cancers. [11,12] Cervical cytology is currently widely used as the most effective cancer screening modality. Objective data from hospital-based studies are required in order to detect the efficiency of the screening test. In our study, the mean age of patients with abnormal smears was 43.7 years. Similar finding was detected by other studies. [13] This study determines 200 cases (20%) of normal findings, inflammatory lesions in 460 cases (46%). Our study showed that there were 87% benign and inflammatory and 3% were premalignant and 10% malignant lesion, out of which premalignant lesions 55.55% that were ASCUS and AGUS. The Epithelial Cell Abnormality (ECA) rate, that is the total of ASCUS, ASC-H, LSIL, HSIL, AGUS and carcinoma diagnosis varied between 1.5 and 12.60% in various studies. [14,15]

Edelman et al, studied Pap smears from 29295 females over a period of one year and the Pap smear abnormalities were as follows: 9.9% ASC-US, 2.5% LSIL, 0.6% HSIL, and 0.2% invasive cancer. [16] Study by Banik U revealed the following scenario: 0.18% ASCUS, 0.12% Atypical glandular cells (AGC), 6.36% LSIL, 1.18% HSIL and 0.35% malignancy. [17] In our study shows ASCUS 0.5%, ASC-H 0.5%, HSIL 0.5%, SCC 0.5% and AGUS 0.5%. SCC cases are more than other country studies because our study includes women of rural areas along with urban areas. Rural area women are unaware of the Pap test. Also they are shy and live in unhygienic conditions. Most common age to develop carcinoma cervix is between 40 and 50 years and the precursor lesions occur 5 - 10 years prior to developing invasive cancer. Various screening test for cervical cancer like Pap smear, liquid Pap cytology, automated cervical screening techniques, visual inspection of cervix after Lugol's Iodine and acetic acid application, speculscopy, cervicography should be started for early detection of premalignant lesions.

Conclusion

The significance of Pap smear screening for the early identification of cervix premalignant and malignant lesions was highlighted by this study. The pattern of cervical cytological abnormalities and the identification of prevalent HPV strains in cervical cancer in the Indian population will need to be determined by larger investigations. Due to the early identification of cervical premalignant lesions, an effective Pap screening programme can reduce the incidence of invasive cervical cancer.

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