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Research Paper

Study of Cervical PAP Smear patterns in a Tertiary Care Hospital in a Rural area in Loni

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ABSTRACT
Introduction: *Cervical cancer comprises of approximately 12% of all cancers among women worldwide. India has the highest age standardized incidence of cervical cancers in South Asia.Early detection of cervical cancer is done by a simple pap smear. This study was conducted to study the different patterns of cervical lesions in a rural hospital in Loni.*
Material and methods:*It was a retrospective study which was conducted in the department of Pathology, Pravara Rural Hospital, Loniover a period of 3 months. A total of 163 cases were included in the study. Prepared slides were dipped in ethyl alcohol kept in coplin jar and were received in the Pathology department. Slides were air-dried and stained with Pap stain. Reporting was done by two cytopathologists according to the Bethesda Classification System.*
Results: *Maximum number of cases were in the age group 31-40 years constituting 30.67% of the total cases followed by age group 41-50 years constituting 26.99% resepectively. The oldest case was of age 81 years. Minimum percentage (0.61%) of cases were under 81- 90 years age group. Maximum number of cases were asymptomatic followed by vaginal discharge followed by lower abdominal pain.Maximum number of cases reported as NILM (50.81%). Among epithelial cell abnormalities incidence of ASCUS and ASC–H was 1.21% and 0.81%followed by SCC (1.62%).*
Conclusion: *Pap smear testing is an economical, non-invasive, easy OPD procedure to detect potentially precancerous and cancerous lesions of cervix. It should be established as a routine screening procedure to reduce the treatment burden, morbidity and mortality.*
Key words: *PAP, Inflammatory Smear,Bacterial Vaginosis, Trichomonas vaginalis Infection, ASCUS, ASC – H, SCC*

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I. INTRODUCTION:

Cervical cancer comprises approximately 12% of all cancers among women worldwide.According to the world cancer statistics, developing countries have more than 80% of all the cervical cancers due to lack of awareness and ineffective screening programmes. Pap smear is a simple, convenient, cost effective and reliable test for easy screening of cervical lesions.Though Pap smear is a routine screening test, it has a sensitivity of 70-80% in detecting HSIL**.** Since its introduction there has been a dramatic reduction in the incidence and mortality of invasive cervical cancer worldwide[1]. Cervical epithelial cell abnormalities in the Pap smear represents a spectrum of intraepithelial lesions ranging from mild-to-severe dysplasia to invasive cancer. Repeated examination is recommended after every five years interval and in case of abnormal Pap smear report follow up is advisable six monthly. 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. The present study is intended to evaluate the different patterns of cervical Pap smear cytology at a rural hospital.

II. MATERIAL AND METHODS

This retrospective study was conducted in the department of Pathology, PIMS, LONIover a period of 3 months. A total of 163 cases were included in the study. Poorly prepared smears and vault smears were excluded from the study. Prepared slides which are dipped in ethyl alcohol in a coplin jar were received in the Pathology department. Slides were airdried and stained with Pap stain. Reporting was done by two cytopathologists according to the Bethesda Classification System as under:

I. Non- neoplastic findings

- Non – neoplastic cellular variations:

1. Squamous metaplasia
2. Keratotic changes
3. Tubal metaplasia
4. Atrophy
5. Pregnancy associated changes

- Reactive cellular changes associated with:

1. Inflammation (includes typical repair)
2. Radiation
3. Intrauterine device use

- Glandular cells status post hysterectomy

II.Organisms

a) Trichomonas vaginalis
b) Fungal organisms morphologically consistent with Candida sp.
c) Shift in flora suggestive of bacterial vaginosis
d) Bacteria morphologically consistent with Actinomyces sp.
e) Cellular changes consistent with herpes simplex virus
f) Cellular changes consistent with Cytomegalovirus

III. Others

a) Endometrial cells (in a woman >45 years)

IV. Squamous cell Abnormalities

a. ASC of Undetermined Significance (ASC-US)
b. ASC, cannot rule out high grade lesion (ASC-H)
c. Low grade Squamous intraepithelial lesion (LSIL)
d. High grade Squamous intraepithelial lesion (HSIL)
e. Squamous cell carcinoma

V. Glandular Cell Abnormalities

- **Atypical cells:**

a) Endocervical cells (NOS/ specify in comments)
b) Endometrial cells (NOS/ specify in comments)
c) Glandular cells (NOS/ specify in comments)

- **Atypical cells:**

a) Endocervical cells (Favours neoplasia)
b) Glandular cells (Favours neoplasia)

- Endocervical adenocarcinoma in situ
- Adenocarcinoma

a) Endocervical
b) Endometrial
c) Extrauterine
d) NOS

III. OBSERVATIONS AND RESULTS:

Table-1: Distribution of Cases according to age

Age group	No. of cases	Percentage (%)
<20	3	1.84
21-30	30	18.4
31-40	50	30.67
41-50	44	26.99
51-60	20	12.27
61-70	9	5.52
71-80	6	3.68

81-90	1	0.61
>90	0	0

Maximum number of cases were found in the Age group of 31-40 years.

Table no 2: Distribution of cases according to symptoms

Symptom	Rani[4]%	Verma[2] %	Sachan[3] %	Present study %
Asymptomatic	4.32	-	15.15	43.55
Vaginal Discharge	31.6	54.5	36.96	33.12
Pain lower abdomen	15.15	-	25.63	10.42
Menorrhagia	16.01	19.5	12.78	0.61
Post coital bleeding	8.22	10.5	3.09	6.13
Post-menopausal bleeding	6.92	9	1.45	2.45
Burning Micturation	4.76	-	1.51	3.68

Maximum number of cases were asymptomatic 71 in number (43.55%) followed by vaginal discharge 54 cases(33.12%)

Table-3: Spectrum of diseases on pap smear

Impression	Number	Percentage (%)
Unsatisfactory	4	1.62
NILM	125	50.81
Inflammatory(Non-specific)	79	32.11
Trichomoniasis	1	0.40
Candidiasis	4	1.62
Bacterial Vaginosis	4	1.62
LSIL	0	0
HSIL	0	0
ASCUS	3	1.21
ASCS- H	2	0.81
SCC	4	1.62
Atrophic	20	8.13

The maximum number of cases (50.81%) show Negative for intraepithelial lesions or malignancy(NILM) followed by inflammatory smear(32.11%).

Table no-4: Comparison of symptoms with other studies

Symptom	Number	Percentage (%)
Asymptomatic	71	43.55
Vaginal Discharge	54	33.12
Pain lower abdomen	17	10.42
Menorrhagia	1	0.61
Post coital bleeding	10	6.13
Post-menopausal bleeding	4	2.45
Burning Micturation	6	3.68

Table no 5: Comparison of spectrum of diseases with other studies

Impression	Present study	Percentage (%)	Rani et al[4] %	Pudasaini[5] et al %
Unsatisfactory	4	1.62	1.73	0.9
NILM	125	50.81	2.59	87.9
Inflammatory (Non-specific)	79	32.11	57.57	1.5
Trichomoniasis	1	0.40	7.79	1.5
Candidiasis	4	1.62	9.09	-

Bacterial Vaginosis	4	1.62	9.09	5.3
LSIL	0	0	-	0.2
HSIL	0	0	-	0.2
ASCUS	3	1.21	0.86	0.1
ASC- H	2	0.81	0.86	-
SCC	4	1.62	0.43	-
Atrophic	20	8.13	6.92	2.4

IV. RESULTS:

Table 1: Shows that maximum number of cases were in the age group 31-40 years constituting 30.67% of the total cases followed by age group 41-50 years constituting 26.99%.The oldest case was of age 81 years. Minimum percentage (0.61%) of cases were under 81-90 years age group.

Table 2: Depicts most of the cases were asymptomaticfollowed by vaginal discharge and lower abdominal pain.

Table 3: Shows maximum number of cases reported as NILM (50.81%). Among epithelial cell abnormalities incidence of ASCUS and ASC – H was 1.21% and 0.81% followed by SCC (1.62%).

V. DISCUSSION:

In the present study,Out of 163 females 50cases were between 31-40 years contributing the bulk of the study which is in concordance with the results of Rani et al[4] and Pudasaini et al[5]. 44 cases were in 41-50 age group, 30 patients were of age ranging between21-30 years, 20 patients were in age group of 51-60 years,9 cases in age group 61-70 years and 6 cases in age group 71-80 years. 3 cases were in less than 20 years age group and only 1 case was observed in the age group of 81-90 years.According to Rani et al[4] majority of cases were found in the age group of 31-40 years(34.19%) and Pudasaini et al[5] states that most of his cases were found in the age group of 20-45 years(84.7%).

Most of the females were asymptomatic(43.55%) followed bycomplaints of vaginal discharge which was 33.12% similar to the studies conducted by Verma et al[2] , Rani et al[4], and Sachan et al.[3] Lower abdominal pain and post coital bleeding was 10.42% and 6.13%% respectively, burning micturition in 3,68% and Post-menopausal bleeding in 2.45%, Menorrhagia in 0.61%. (Table 4).

In our study,normalsmears (NILM) constituted the maximum bulk of the reporting (50.81%) which was almost similar to the study of Pudasaini et al(87.9%)[5]. Incidence of inflammatory smears constituted 32.11% of cases.Candidiasis and Bacterial vaginosis was1.62% cases each in our study. Rani et al[4] reported candida in 9.09% of the total pap smear studied and 9.09% cases of bacterial vaginosis (table 5). ASCUS and ASC- H constituted 1.21% and 0.81% respectively of the total cases in the present study which was in concordance with the study conducted by Rani et al[4].Four cases (1.62%) of SCC was diagnosed in our study. Unsatisfactory for evaluation was reported in 4 cases (1.62%) which was similar to the observations made by Rani et al.[4]Rest 8.14% of cases showed a atrophic pap smear in the present study. As we all know that cervical cancer is one of the leading causes of mortality in India and its precursor lesions usually occur 5-10 years earlier. Henceforth, Pap smear examination is an important and fundamental tool for the screening, prevention and early diagnosis of cervical cancers.

VI. CONCLUSION:

Pap smear is a very effective screening tool for early detection of premalignant and malignant lesions of the cervix. This routine screening procedure should be done to reduce the treatment burden, morbidity and mortality.

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