

Study of Cervical Pap Smears in central India: a city based study

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Abstract

Introduction: The most common cancer of women in our country is cervical cancer (24/100,000) followed by breast cancer (21/100,000). Some inflammatory lesions like Trichomonas and Human papiloma virus are forerunners of malignancy underlining the importance of diagnosing these conditions early. **Methods:** The material for the present study comprised of examination of 500 cervical/vaginal smears taken from patients attending OPD. Papanicolaou staining was used for staining. Cases were reported according to The Bethesda System. **Result:** In the present study low grade squamous intraepithelial lesion were found in 35 cases (7%). High grade squamous intraepithelial lesion was found in 25 cases (5%). Invasive carcinoma cervix was found in 7 cases (1.4%). Atypical epithelial cells of uncertain significance were found in 65 cases, of which 50 cases were reported as ASCUS and 15 cases were reported as AGCUS. In the present study significant number of patients with history of early age at marriage (34 cases) and first child before 18 years of age (37 cases) presented with squamous intraepithelial lesions (LSIL + HSIL). Carcinoma cervix was found to be correlated with early age of marriage and first child birth before 18 years of age. **Conclusion:** Cervical cancer can be detected at a very early stage by simple technique of exfoliative cytology. Early stage detection is important because early stage is 100% curable, reducing the morbidity and mortality from invasive cancer cervix.

Key words: Ca-Cervix, HSIL, LSIL, Bethesda system, Papanicolaou stain

Introduction

Cervical cancer is the second most common cancer among women in the world¹ and the most common in India.² Although the incidence of and mortality from cervical cancer have declined substantially over the last four decades worldwide³ cervical cancer continues to be a leading cause of cancer death in women.^{4,5} About 80% of all cervical cancer cases and deaths occur in less-developed countries⁶⁻⁸ this disproportionate burden of cervical cancer is due largely to the absence of well-organized screening programs .

Vaginal / cervical cytology is supposed to be single most useful method for timely detection of cervical malignancy. The accessibility of cervix, the propensity for cells to exfoliate from precancerous lesion, histological changes from mild atypias to frank malignancy and apparently prolonged natural history provide best potential for the success of population screening programme for cancer cervix. This study was conducted to study the pattern of exfoliative cytology

by making vaginal / cervical smears in Indore to detect early asymptomatic cervical malignancy. We have also analysed various risk factors responsible for the disease and to correlate cervical dysplasia with different risk factors (age, age at marriage, first child before 18 years and parity).

Material & Methods

All the females above 15 years of age attending the OPD and who gave consent for the study were included in the study. The cases were examined in detail and findings recorded on the standard proforma. First a careful history of the patient was taken, complaints noted in the order of importance and duration. A detailed obstetric, menstrual, contraceptive history has been noted. A detailed general physical, systemic and per speculum examination were also carried out besides visualization of the cervix. Vaginal and cervical smear were prepared, fixed and stained with papanicolaou stain taking all precautions. Cases were reported according to The Bethesda System. The Bethesda system (TBS) is a system for reporting cervical or vaginal cytologic diagnoses,⁹ used for reporting Pap

smear results. It was introduced in 1988,¹⁰ and revised in 1991.¹¹ and 2001.

Results

Table 1: Analysis of Pap Smear

Categorization of Smear	Total Number	Percentage (%)
Normal Smear	70	14
Benign Changes	258	51.6
1. Specific Infection	30	6
Trichomonas	25	5
HSV	5	1
2. Reactive Changes	228	45.6
Inflammatory	193	38.6
Atrophic	15	3
Endocervicitis	20	4
3. Epithelial cell abnormality	132	26.4
ASUS	50	10
AGCUS	15	3
LGSIL	35	7
HGSIL	25	5
Malignancy	07	1.4

Table depicted that 228 cases (45.6%) shows reactive changes, 132 cases (26.4%) showed epithelial cell abnormalities including atypical squamous cells of uncertain significance(ASCUS) and atypical glandular cells of uncertain significance (AGCUS) 65 cases. 35 cases (7.0%) showed low grade squamous intra epithelial lesions (LSIL), 25 cases (5.0%) showed high grade squamous intra epithelial lesions(HSIL). A total of 7 smears (1.4%) showed invasive carcinoma cervix.

Table 2: Age distribution in relation of LSIL, HSIL and Ca –Cervix

Age (Years)	Total No of cases	LSIL (%)	HSIL (%)	Ca Cervix (%)
21-30	215	10 (28.57)	1 (4)	-
31-40	190	15 (42.85)	8 (32)	2 (28.57)
41-50	45	6 (17.14)	8 (32)	3 (42.85)
51-60	10	3 (8.57)	6 (24)	2 (28.57)
>60	10	1 (2.85)	2 (8)	1 (14.28)
Total		35	25	07

As per the above table prevalence of LSIL and HSIL increased with age.

Table 3: Association of age of marriage and Ca cervix

Age (Years)	Total No of cases	LSIL (%)	HSIL (%)	Ca Cervix (%)
<15	90	8 (22.85)	7 (28)	3 (42.85)
16-20	335	20 (57.15)	14 (56)	3 (42.85)
21-25	65	7 (20)	4 (16)	1 (14.28)
>25	10	-	-	-
Total		35	25	7

As per the table it is clear that early age of marriage was more likely to be associated with all kind of pre cancerous and cancerous lesion.

Table 4: Effect of first child birth before 18 years on positive cases

Age at First child birth	LSIL	HSIL	Ca Cervix
< 18 Years	20	17	5
> 18 Years	15	8	2
Total	35	25	7

Early age at the time of first pregnancy is more common in all kind of lesion.

Table 5: Effect of Parity on Cases

Parity of cases	Total	LSIL (%)	HSIL (%)	Ca Cervix (%)
P0	5			
P1- P2	150	6 (17.15)	3 (12)	1 (14.28)
P3- P4	270	15 (42.85)	9 (36)	2 (28.57)
> P5	75	14 (40)	13 (52)	4 (57.15)
Total		35	25	7

As per table it is clear that higher parity is more likely to be associated with all kind of cervical lesion.

Discussion

Cancer cervix is multifactorial.¹² HPV infection is the most important risk factor. HPV 16 & 18 have been evaluated to be the most carcinogenic type to humans.¹³ Screening is an inherently attractive approach to cancer control. The differences in prognosis of cancer according to stage have encouraged physicians and the public in belief that if only cancer could be found early enough then it could almost invariably be cured.

We recognized that the majority of the cases of cancer of cervix pass through an in situ phase, when they are detectable by means of cervical smear and it is believed that this is preceded by a phase of dysplasia. We know that an appreciable proportion of in situ cases and even greater proportion of dysplasia cases regress.

However as we can not identify which precursor lesion will progress to invasive cancer, if left untreated. All patients with detected lesion must be treated and passed on special surveillance. The screening test appear to identify cases in an in situ and early invasive phase, that have a long survival, yet the long survival appears due to the additional observation period gained by earlier diagnosis possible with a screening test (Lead time). In the present study 500 pap smears were analyzed. Table No. 1 shows that Out of 500, 65 cases showed atypical epithelial cells abnormalities of undetermined significance, 35 cases showed LSIL, 25 cases showed HSIL and 7 cases showed features of carcinoma cervix.

The age distribution pattern of invasive cancer shows a rise that starts in the early 20s continues up sharply in the 30s, and plateaus at 40 to 50 years of age. Data cancer

registers in developing countries indicate that more than 80 to 90% cervical cancer cases develop in women 35 years or older. Most of studies in developing countries revealed that average age of women with CIS was between 35-44 years. In our study Table no. 3 shows that maximum cases of LSIL, HSIL (42.85% and 32%) were detected in 31-40 years of age group whereas maximum cases of carcinoma cervix (71.5%) were in 41-60 years of age group.

Mean age of LSIL, HSIL and Carcinoma cervix in present study was found to be 36.92 years, 45.5 years and 54.71 years respectively Many studies have shown that early initiation (<16 years) of sexual relations is associated with increased risk for developing cervical carcinoma.^{14,15} In present study as shown in table no III, 335 (67%) patients were married between the age of 16-20 years and a good number of patients 90 (18%) were married below the age of 15 years.

Table no IV shows that age group 16-20 years comprises the maximum number 355 (71%), at which they had their first child birth. Present study shows that significant number of patient with history of early age at marriage (34 cases) and first child before 18 years of age (37 cases) presented with squamous intraepithelial lesions (LSIL + HSIL). Like wise carcinoma cervix was found to be correlated with early age of marriage and first child birth before 18 years of age. In 1994 Mukherjee found that the age at first coitus is very significant risk factor for carcinoma cervix. Lakshmi Devi Y (1980), also found that 64.3% of dysplastic and frank cancer cases had their first sexual initiation at 18

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years or below. Biswas (1997) also reported similar findings. Previous studies shows that woman with parity 3 or more are at higher risk of developing squamous intra epithelial lesions and carcinomatous changes.¹⁶⁻¹⁸ Table no V shows that maximum number of patients belong to parity group 3-4 (270 cases).

Conclusion

Cervical/ vaginal cytology is a practical method for early detection of intraepithelial lesions and malignancy and therefore should be established as a routine diagnostic aid. A single screen at the age 40 reduces the cumulative incidence of cervix cancer by 20%. Health education regarding the risk factors, symptoms, and signs of cervical carcinoma has been shown to be associated with early detection and improvement in survival.¹⁹⁻²¹

In any case, since prevention is always better than cure, it is better to take preventive measures than face the consequences. Hence the etiological factors mainly in the form of early marriage, multiparity, first child before 18 years, promiscuity and consequent chronic infection should all be controlled. If infection sets in, prompt treatment goes a long way in prevention of occurrence of future damage.

The value of exfoliative vaginal cytology is undisputed today. The Bethesda System used here for reporting provide good view of the patients in which preventive measures can be taken to herald the disease progression.

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