Original Article

Cervical Cancer and its Demographic Factors at Central India

B K Sharma[1], Sanghmitra Singh[2]

[1]Associate Professor, Department of Pathology, Bundelkhand Medical College, Sagar, Madhya Pradesh, India, [2]Resident Surgical Officer, Department of Obstetrics and Gynaecology, S.S. Medical College, Rewa, Madhya Pradesh, India

Abstract

Introduction: Cancer of the uterine cervix is the 7th most common cancer in the world, and it is the most common cancer causing death among women in developing countries. Africa, Central America, India, Pakistan, and most of the African countries have an incidence between 20 and 30/100,000.

Objective: With the objective to determine different abnormal cervical pattern and age, parity, socioeconomic status, and literacy wise distribution of cancers.

Materials and Methods: The present study was carried out at the Sanjay Gandhi Hospital and SS Medical College, Rewa, in 1-year duration with 200 samples were taken in account.

Results: Reactive changes 39 cases (19.5%) show epithelial abnormalities including atypical squamous cells of undetermined significance and atypical glandular cells of undetermined significance (13 cases) 6.5%. 15 cases (7.5%) show Low-grade squamous intraepithelial lesion (SIL), 8 cases (4%) show high-grade SIL, and 3 cases (1.5%) show carcinoma.

Conclusion: Most of the cases with abnormal smear were seen from the parity more than three and above. Furthermore, it has been observed that literacy and socioeconomic conditions are also having a high impact on rate among carcinoma cervix as it has been seen that lower socioeconomic condition and lower rate of literacy have more incidences of abnormal smear.

Key words: Cervical cancer, High-grade squamous intraepithelial lesion, Low-grade squamous intraepithelial lesion, Smear

INTRODUCTION

Cancer of the uterine cervix is the 7th most common cancer in the world, and it is the most common cancer causing death among women in developing countries.[1] Globally, the annual estimated number of new cases is 352,414 which accounts for 9% of all cancer diagnosed in women. 86% of the cancers occur in the developing countries,[2] whereas 20% in the undeveloped countries.[3]

The incidence of cancer of uterine cervix varies from part to part in the world. The highest incidence is seen in Sub Saharan african countries, Latin America. About 84 per cent of cervical cancer cases occurred in less developed countries like India, Pakistan and most of the African countries where incidence ranges between 20 and 30 per 100, 000. Most of the developed world, China and Middle East have a low incidence of <8/100,000.

In India, the peak age for cervical cancer incidence is 55-59 years.[4] Current data from the National Cancer Registry Program indicate that the most common sites of cancer among women are the breasts and the cervix.[5] It 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. However, the most common lesions of the female genital tract are inflammatory lesions and parasitic lesions. Some inflammatory lesions such as trichomonas and human papillomavirus are forerunners of malignancy underlining the importance of diagnosing these conditions.

Corresponding Author: Dr. B K Sharma, Associate Professor, Department of Pathology, Bundelkhand Medical College, Sagar, Madhya Pradesh, India. E-mail id: bk_drsharma@rediffmail.com

Cytology, as we know it today, is an interpretative art with histopathology as its basis. Cytology does not replace histology rather it supplements histology. The two can be considered as opposite sides of the same coin.

Apart from this, screening is an inherently attractive approach to cancer control. This includes evaluation of the test itself in terms of its sensitivity and predictive value for detection of cancer and precancerous state in the population. One of the essential prerequisites for the introduction of screening program is that the natural history of disease could be known. For cancer of cervix, we recognized that the majority of the cases pass through an *in situ* phase when they are detectable using cervical smear, and it is believed that this is preceded by a phase of dysplasia.

Aims and Objectives
1. To determine different abnormal cervical patterns
2. To determine age, parity, socioeconomic status, and literacy wise distribution of cancers.

MATERIALS AND METHODS

The present study titled "A study of cervical cancer and its demographic factor at Central India" was carried in the Department of Obstetrics and Gynaecology with the help of the Department of Pathology, at Sanjay Gandhi Hospital and SS Medical College, Rewa. Duration of study is 1 year. The present study comprises of examination of 200 cervical/vaginal smears, taken from the patients attending Outpatient Department (OPD) at the Sanjay Gandhi Hospital, Rewa.

The cases were examined in detail and findings recorded on the standard preformed. 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.

Specimens were taken from the vagina and cervix. For the vaginal specimen, aspiration should be done before the induction of specimen. For cervical specimen, smear was made by placing the small end of the cervical scraper through the external orifice high into the cervical canal and rotating the spatula through 360°, scraping the squamocolumnar junction. The material was spread on the clean, pre-labeled glass slide and fixed immediately in fixative. 95% ethyl alcohol is normally used as fixative. Many reagents are used in staining technique such as Harris hematoxylin, OG - 6, EA 36, lithium carbonate, hydrochloric acid, alcohol, xylol, distilled water, and Canada balsam/DPX.

Relevant data on age, parity, socioeconomic status, literacy, and hygienic condition were recorded in a separate sheath. Pap smear findings were then clinically correlated followed by analysis.

RESULTS

In the present study, Pap smears were taken from 200 patients who were preferably more than 25 years of age, symptomatic or with some clinical lesion of the cervix, attending and admitted to the Gandhi Memorial Hospital associated with SS Medical College, Rewa (MP).

Data such as age, sex, location of tumors, and socioeconomic classification were taken as records.

Out of all parity cases, Table 4 shows that significant percentage of abdominal smears is seen mainly in patients with party 3 and above.

Women with no literacy or primary level of education have more cases of abnormal smear and cervical cancer lesions.

Lower and middle socioeconomic conditions were more responsible to cause abnormal smear and cases.

DISCUSSION

Date from 200 patients, attending the OPD and admitted to the Gandhi Memorial Hospital, Rewa (MP), were collected and analyzed.

Table 1 shows different types of pap smear and their distribution taken from different age groups and parity.

Table 2 shows that the bulk of patients 105 belong to age group 25-35 years.

Table 3 shows that maximum number of patients belong to parity group 3-4 (160 cases).

Table 4 shows that woman with parity 3 or more are at higher risk of developing squamous intraepithelial lesions and carcinomatous changes.

Parity and dysplasia comparison

Parity	YL Devi	Rao
2-3	30.64	27.06
4-5	35.48	40.44
6-7	28.58	23.44
Above 7	5.40	9.04

Women with a large number of pregnancies usually start sexual life early, and the early age of first intercourse

might be etiologically more important than the number of pregnancies. The period of early squamous metaplasia

is the time of greatest risk for cellular transformation and the development of cervical neoplasia. Early squamous metaplasia is most frequent in puberty, early adolescence, and first pregnancy. Therefore, women who begin sexual activity at an early age when the metaplastic process is most active would have a greater chance of developing cervical cancer.

High parity usually means a young age at marriage and first pregnancy. All observed an increasing risk of development of carcinoma cervix with each pregnancy. Shah and Shah (1980) noted that the incidence of dysplasia increased in parity 4 and above. This is also confirmed by the present study. Maliphant (1949) stressed the increasing risk with each pregnancy. He was of the opinion that with every pregnancy a married woman doubles the risk compared to a married woman without children, and ten times the risk when unmarried women are taken into consideration.

Table 5 indicates that common gross appearance of cervix per speculum was chronic cervicitis in abnormal smears. Chronic cervicitis was seen in 53.3% cases of low-grade squamous intraepithelial lesion (L-SIL), 62.5% cases high-grade SIL (H-SIL), and 33.33% cases carcinoma cervix.

Table 1: Description of Pap smear

Pap smear	Total N (%)
Adequacy of smears	
Satisfactory for evaluation	195 (97.5)
Unsatisfactory for evaluation	5 (2.5)
General categorization	
Normal smears	20 (10)
Benign cellular changes	136 (68)
Specific infection	21 (10.5)
Trichomonas	10 (5)
Gardnerella	11 (5.5)
Reactive changes	115 (57.5)
Inflammatory smears	108 (54)
Atrophic smears	5 (2.5)
Endocervicitis	2 (1)
Epithelial cell abnormality	39 (19.5)
Atypical epithelial cells	13 (6.5)
ASCUS	12 (6)
AGUS	1 (0.5)
HPV mild dysplasia/CIN–I	15 (7.5)
H-SIL (moderate and severe dysplasia/CIN–II and III)	8 (4)
Malignancy	3 (1.5)

ASCUS: Atypical squamous cells of undermined significance, AGUS: Atypical glandular cells of undermined significance, L-SIL: Low-grade squamous intraepithelial lesion, CIN: Cervical intraepithelial neoplasia, HPV: Human papillomavirus, H-SIL: High-grade squamous intraepithelial lesion

Table 2: Age distribution of the patients

Age in year	N (%)
25-35	105 (52.5)
36-45	54 (27)
46-55	26 (13)
>55	15 (7.5)

Table 3: Distribution of patient according to total number of pregnancies

Number of pregnancy	Total number of cases (%)
0	-
1	16 (8)
2	28 (14)
3	80 (40)
4	50 (25)
5	18 (9)
>/6	8 (4)

Table 4: Effect of parity in positive cases

Parity	Total number of cases	L-SIL (%)	H-SIL (%)	Cancer of the cervix (%)
P_0	-	-	-	-
P_1P_2	44	3 (20)	1 (12.5)	-
P_3P_4	130	7 (46.6)	3 (37)	1 (33.3)
>/P_5	26	5 (33.3)	4 (50)	2 (66.6)

L-SIL: Low-grade squamous intraepithelial lesion, H-SIL: High-grade squamous intraepithelial lesion

Table 5: Gross appearance of cervix

Appearance	Total number of cases (%)
Normal	64 (32)
Chronic cervicitis (hypertrophied cervix)	84 (42)
Cervical erosion	48 (24)
Bleeding on touch	4 (2)

Table 6: Distribution of patients according to literacy

Literacy	Total number of cases	L-SIL (%)	H-SIL (%)	Cancer of the cervix (%)
Illiterate	77	5 (33.33)	4 (50)	2 (66.66)
Primary	58	4 (26.67)	2 (25)	1 (33.33)
Secondary	36	3 (20)	1 (12.5)	
Graduate	29	3 (20)	1 (12.5)	

L-SIL: Low-grade squamous intraepithelial lesion, H-SIL: High-grade squamous intraepithelial lesion

Table 7: Distribution of patients according to socioeconomic

Socioeconomic status	Total number of cases	L-SIL (%)	H-SIL (%)	Cancer of the cervix (%)
Low (<5000/month)	106	7 (46.67)	4 (50)	2 (66.66)
Middle (5000-10,000)	66	5 (53.33)	2 (25)	1 (33.33)
High (>10,000)	28	3 (20)	2 (25)	-

L-SIL: Low-grade squamous intraepithelial lesion, H-SIL: High-grade squamous intraepithelial lesion

Cervical erosion was presenting 33.33% cases of L-SIL, 37.5% cases of H-SIL, and 66.66% cases of carcinoma cervix.

Table 6 shows the relationship of different level of literacy with the incidence of cervical cancer lesions, which clearly describe illiterate has maximum number of cases. Which also tells as literacy increases awareness increases towards health.

Table 7 describe relation of cases with Socio economic status in society. Low socio economic status has maximum no of cases which decline drastically as status increases.

A close association of dysplasia and malignancy with unhealthy cervix, e.g., cervical hypertrophy, cervical erosion has been observed by many people (Singh *et al.*, Guard *et al.*, Gupta *et al.*, Panda *et al.*, etc.) Therefore, all cases of suspected cervical lesion should be routinely subjected to Pap smears, and patients should be kept on regular follow-up.

Out of 200 smears and analyzed 7.5% were of L-SIL, 4% were of H-SIL, and 1.5% were malignant.

MacGregor and Baird (1963) screened 2683 cases and reported 18 (0.67%) to be malignant. Wahi *et al.* (1972) found rate of malignant smears to be 0.6% and that of dysplastic smears 6.7%.

From the above observation of different workers, it is concluded that there is a wide variability in the incidence of carcinoma diagnose by cytology, and also the result of present series of work differ much from results of others.

CONCLUSION

In the present study, 200 Pap smear analyzed, which shows the distribution pattern of various conditions, of which, 115 cases (57.5%) show reactive changes, 39 cases (19.5%) show epithelial abnormalities including atypical squamous cells of undetermined significance and atypical glandular cells of undetermined significance (13 cases) 6.5%. 15 cases (7.5%) show L-SIL, 8 cases (4%) show H-SIL, and 3 cases (1.5%) show carcinoma. Most of the cases with abnormal smear were seen from the parity more than 3 and above. Furthermore, it has been observed that literacy and socioeconomic conditions are also having a high impact on rate among carcinoma cervix as it has been seen that lower socioeconomic condition and lower rate of literacy have more incidences of abnormal smear.

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