

Study of pap smear and cervical biopsy in a woman with unhealthy cervix attending tertiary care institute

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Abstract

Background: Carcinoma of cervix is the third most common cancer in women worldwide and most common female cancer in many developing countries like India. The ultimate aim of various modalities of diagnosis is to prevent the development of invasive cervical cancer. **Aims and objective:** To study the Pap smear and cervical biopsy in a woman with unhealthy cervix attending tertiary care institute **Materials and method:** In the present study 120 women who were attending Out Patients Department (OPD) or being admitted to indoor ward. Among them women who fulfilled one or more of the following selection criteria were randomly selected. A detailed clinical history of each patient was taken. A thorough general and systemic examination was done. The cervix was exposed and visualized for any gross pathological features such as erosion ectropion, hypertrophy, Ulcer or fungating growth, polyp, frank cancer and any abnormal vaginal discharge under adequate light and findings were recorded. Pap smear was taken using Ayre's spatula. The squamo - columnar junction was scraped with the Ayre's spatula by rotating full 360 degree. **Results:** Majority of the cases (34.2%) were in age group of 31-40 years. Majority of the cases in the present study were from lower socio-economic class (63.34%). Majority of cases with abnormal cervical lesion were in the multipara group (parity from 2 to 4). Whitish discharge (68.3%) was the main complaint of majority of the patients with unhealthy cervix followed by irregular bleeding (51.7%). Majority of the cases showed erosion (51.7%) which was followed by growth in 27.5% cases. Pap smear revealed that 55% had an inflammatory/metaplasia and 22.5% showed invasive carcinoma. Among 27 positive cases for cervical neoplasia, 5.8% had CIN I changes, 9.2% had CIN II changes and 7.5% had CIN III changes. Out of all 120 cases were subjected to either punch, wedge or cone cervical biopsy or endometrial curettage. Majority of cases, 44.16% had chronic cervicitis, 4.16% had mucus polyp, 3.34% had mild dysplasia, 5.84% had moderate dysplasia and 7.5% had severe dysplasia. In 30% cases HPE revealed invasive carcinoma. **Conclusion:** Pap smear revealed that 55% had an inflammatory/metaplasia and 22.5% showed invasive carcinoma. Among 27 positive cases for cervical neoplasia, 5.8% had CIN I changes, 9.2% had CIN II changes and 7.5% had CIN III changes. However out of all 120 cases were subjected to either punch, wedge or cone cervical biopsy or endometrial curettage; majority of cases, 44.16% had chronic cervicitis, 4.16% had mucus polyp, 3.34% had mild dysplasia, 5.84% had moderate dysplasia and 7.5% had severe dysplasia. In 30% cases HPE revealed invasive carcinoma.

Key Word: cervical biopsy, Pap smear, unhealthy cervix

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INTRODUCTION

Carcinoma of cervix is the third most common cancer in women worldwide and most common female cancer in many developing countries like India.¹ Incidence of preclinical and invasive carcinoma is undeniably high amongst the group of "unhealthy cervix". Incidence of invasive carcinoma is reported to be 29 / 1000 in women with abnormal cervix but only 1.53 per 1000 in those with a healthy cervix. Incidence of invasive carcinoma shows gradually decreasing trend because of advancement of various methods for early detection. Again early detection

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in preclinical stage ensures 100% survival rate. The ultimate aim of various modalities of diagnosis is to prevent the development of invasive cervical cancer. Out of various available methods cytology, colposcopy and histopathology are most commonly used worldwide at present. Clinical utilization of cytopathology is rapidly expanding and exfoliative cytology in early detection of cervical cancer has become firm established. It gives the first signal to the need further essential diagnostic procedures and then evaluates their accuracy. By its use appropriate treatment is indicated initially and evaluated for efficacy subsequently. Pap smear was first described by Papanicolaou and Traut in 1943. Aside from pre malignant and malignant changes other local conditions can often be recognised by the cytologist.² Pap smear is a screening test only. Positive test requires further investigation like colposcopy, cervical biopsy and fractional curettage. Pap smear can detect 98% of cancer of the cervix and about 70% of endometrial cancer. Reliability of the report depends upon the slide preparation and skill of cytology. Whereas single test yields as much as 10 – 15% false negative reading, it is reduced to only 1% with repeated test. Carcinoma of cervix is the third most common cancer in women worldwide and most common female cancer in many developing countries like India.¹ Incidence of preclinical and invasive carcinoma is undeniably high amongst the group of “unhealthy cervix”. Incidence of invasive carcinoma is reported to be 29 / 1000 in women with abnormal cervix but only 1.53 per 1000 in those with a healthy cervix. Incidence of invasive carcinoma shows gradually decreasing trend because of advancement of various methods for early detection. Again early detection in preclinical stage ensures 100% survival rate. The ultimate aim of various modalities of diagnosis is to prevent the development of invasive cervical cancer. Out of various available methods cytology, colposcopy and histopathology are most commonly used worldwide at present. Clinical utilization of cytopathology is rapidly expanding and exfoliative cytology in early detection of cervical cancer has become firm established. It gives the first signal to the need further essential diagnostic procedures and then evaluates their accuracy. By its use appropriate treatment is indicated initially and evaluated for efficacy subsequently. Pap smear was first described by Papanicolaou and Traut in 1943. Aside from pre malignant and malignant changes other local conditions can often be recognised by the cytologist.² Pap smear is a screening test only. Positive test requires further investigation like colposcopy, cervical biopsy and fractional curettage. Pap smear can detect 98% of cancer of the cervix and about 70% of endometrial cancer. Reliability of the report depends upon the slide

preparation and skill of cytology. Whereas single test yields as much as 10 – 15% false negative reading, it is reduced to only 1% with repeated test. Cervical biopsy Diagnosis can only be made for certain by microscopic examination of cervical tissue. Biopsy is essential in every case where signs or symptoms raise the slightest suspicion and it is irrespective of whether cervical smear contain malignant cells. Either punch or wedge or cone biopsy can be taken depending upon lesion and involvement. Keeping the above facts in view, the present study is designed to evaluate the role of Pap smear and biopsy in a women presenting with unhealthy cervix.

MATERIALS AND METHOD

The present study was conducted in the department of Obstetrics and Gynaecology of VSS MEDICAL COLLEGE BURLA. The study was conducted in 120 women who were attending Out Patients Department (OPD) or being admitted to indoor ward. Among them women who fulfilled one or more of the following selection criteria were randomly selected.

Inclusion criteria

- Married women with abnormal symptoms like profuse white discharge, post coital bleeding, irregular bleeding or post menopausal bleeding.
- Patients with clinically unhealthy cervix diagnosed by speculum examination like cervical erosion, congestion, hypertrophy, ectropion, cervical polyp and growth.
- Patients with pap smears showing dysplasia

Exclusion criteria

- Unmarried women or Pregnant women
- Patients with bleeding at the time of examination.
- Women who underwent total hysterectomy

Procedure: Written and informed consent were obtained from all the participants after brief explanation of the procedure. A detailed clinical history of each patient was taken with special stress to chief complaints with duration, menstrual history, obstetric history particularly age of marriage, age of first pregnancy, number of pregnancies and their outcome and personal history with socioeconomic status and literacy level. Some leading questions may be asked like post coital bleeding, family history of cancers was taken in relation to the presenting complaints. History of any previous surgery on cervix was noted. A thorough general and systemic examination was done. The patient was placed in dorsal position, the labia separated and a double bladed sim's speculum gently inserted without the use of lubricant or jelly. The cervix was exposed and visualized for any gross pathological features such as erosion ectropion, hypertrophy, Ulcer or fungating growth, polyp, frank

cancer and any abnormal vaginal discharge under adequate light and findings were recorded.

Pap smear: After preliminary inspection of the cervix, a Pap smear was taken using Ayre's spatula. The squamo-columnar junction was scraped with the Ayre's spatula by rotating full 360 degree. The scrapings were evenly spread on a glass slide and immediately fixed by dipping in the jar containing equal parts of 95% ethyl alcohol and ether and transported to the cytopathological laboratory. Smears were analyzed by senior pathologist. The Richart's classification was used for describing Pap smear results.

Cervical biopsy: Biopsy was taken from abnormal area, in the form of either a cervical punch or wedge or cone

biopsy in operation theatre under anaesthesia. The specimen was sent for histopathological examination in 10% formalin solution. Slides were analyzed by senior consultant pathologist.

Biopsy results were categorized as

- Cervicitis/ metaplasia
- CIN-1 (mild dysplasia/ correlating with LSIL)
- CIN-2/3 (moderate to severe dysplasia/ correlating with HSIL)
- Squamous cell carcinoma

The collected information was entered in excel sheet and was analysed and presented with appropriate.

RESULTS

Table 1: Distribution of cases according to age and socio economic status

		No of cases	Percentage
Age group	21- 30	20	16.7%
	31 –40	41	34.2%
	41– 50	36	30%
	51 –60	20	16.7%
	>60	3	2.4%
Socio economic status	Low	76	63.4%
	Middle	40	33.3%
	High	4	3.3%
Total		120	100%

It was seen that majority of the cases (34.2%) were in age group of 31-40 years followed by 31-40 years (30%) and 21-30 and 51-6- years of age (16.7% each). It was observed that majority of the cases in the present study were from lower socio-economic class (63.34%).

Table no. 2: Distribution of cases according to parity and symptoms

		No. of cases	Percentage
Parity	Nullipara (P ₀)	1	0.8%
	Primipara (P ₁)	10	8.3%
	Multipara (P ₂ -P ₄)	88	73.4%
	Grand multipara (≥P ₅)	21	17.5%
	Whitish discharge	82	68.3%
Symptoms*	Irregular bleeding	62	51.7%
	Post menopausal bleeding	17	14.2%
	Post coital bleeding	10	8.3%
	Blood stained discharge	6	5%
	Menorrhagia	12	10%
	Low backache	17	14.2%
	Others	6	5%

It was observed that majority of cases with abnormal cervical lesion were in the multipara group (parity from 2 to 4) which constituted 73.4% cases out of 120 cases. Whitish discharge (68.3%) was the main complaint of majority of the patients with unhealthy cervix followed by irregular bleeding (51.7%). Among 120 cases 14.2% presented with post menopausal bleeding, 8.3% with post coital bleeding, 10% menorrhagia and low backache in 14.2% cases.

Table no. 3: Distribution of cases according to gross appearance of cervix

Appearance of cervix	No of cases	Percentage
Erosion	46	38.3%
Congestion	12	10%
Hypertrophy + erosion	16	13.4%
Hypertrophy + congestion	7	5.8%
Hypertrophy + ectropion	1	0.8%
Mucus Polyp	5	4.2%
Growth	33	27.5%
Total	120	100%

It was seen that majority of the cases showed erosion (38.3%) which was followed by growth in 27.5% cases. Hypertrophy with erosion was seen in 13.4% of the cases, hypertrophy with congestion in 5.84%, congestion in 10% and mucus polyp was seen in 4.16% of cases.

Table 4: Distribution of cases according to Pap smear findings

Pap smear	No of cases	Percentage
Inflammatory / metaplasia	66	55%
CIN I	7	5.8%
CIN II	11	9.2%
CIN III	9	7.5%
Invasive carcinoma	27	22.5%
Total	120	100%

Pap smear revealed that 55% had an inflammatory/metaplasia and 22.5% showed invasive carcinoma. Among 27 positive cases for cervical neoplasia, 5.8% had CIN I changes, 9.2% had CIN II changes and 7.5% had CIN III changes.

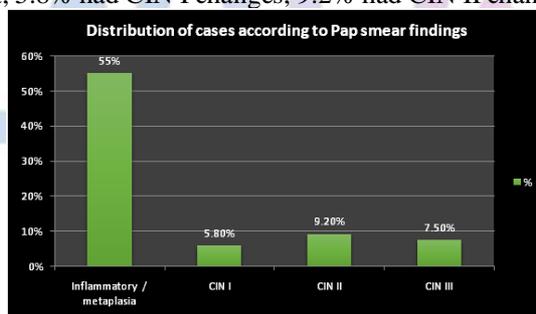


Table 5: Distribution of cases according to histopathological findings

Histopathology findings	No of cases	Percentage
Normal	6	5%
Cervicitis / metaplasia	53	44.16%
CIN I	4	3.34%
CIN II	7	5.84%
CIN III	9	7.5%
Invasive carcinoma	36	30%
Mucus polyp	5	4.16%
Total	120	100%

Out of all 120 cases were subjected to either punch, wedge or cone cervical biopsy or endometrial curettage. Majority of cases, 44.16% had chronic cervicitis, 4.16% had mucus polyp, 3.34% had mild dysplasia, 5.84% had moderate dysplasia and 7.5% had severe dysplasia. In 30% cases HPE revealed invasive carcinoma.

DISCUSSION

The present study was conducted with the aim to study the Pap smear and cervical biopsy in a woman with unhealthy cervix attending tertiary care institute. For this purpose total 120 women with unhealthy cervix were examined with pap smear, cytology followed by biopsy for histopathological examination. The histopathological report has been taken as a final confirmatory diagnosis. It was seen that majority of the cases of unhealthy cervix were in the age group of 31- 40 years (41%) and the mean age was found to be 44.18 years. It confirms the well established fact that, unhealthy cervix is more common in women of reproductive age group who are sexually active. Sandhya³, Ashfan and Bhojani KR *et al*⁴ showed that majority of cases of unhealthy cervix are in the age group of 31–40 years, which is consistent with the present study. Socio economic status had always been playing an epidemiological role in genesis of dysplasia. It was observed that majority of the cases in the present study were from lower socio-economic class (63.34%). Vaidya *et al*⁵ had showed that low socio economic status had a definite role on the development of dyskaryosis. The present study was also supported by the studies done by Bukhari MH *et al*⁶ who concluded that maximum no of cases were from low SE status. Poor personal hygiene, poor living conditions, unstable marriages, and early age at first intercourse are factors seen with low socio economic conditions which are known risk factor for cervical cancer. It was observed that majority of cases with abnormal cervical lesion were in the multipara group (parity from 2 to 4) which constituted 73.4% cases out of 120 cases. Both Kushtagi P *et al*⁷ and Vaidya *et al*⁵ also observed similar findings in their study. In the present study majority of women complained of excessive white discharge per vaginum (68.3%). Bhojani *et al*⁴ showed in their study that 40.6% cases presented with discharge per vaginum and in the study done by Sandhya majority of women (56%) complained of excessive white discharge per vaginum, which are almost consistent with the present study. Excessive vaginal discharge playing a role in contributing to the development of CIN was also proved to be a risk factor in the study conducted by Vaidya *et al*⁵. In their study, 24% of cases of CIN presented with vaginal discharge. Sandhya showed that in women presenting with white vaginal discharge, CIN was found in 21.4% (12/56). In the present study 13.12% (16/82) of women complaining of white discharged had CIN. In the present study, among the patients presenting with irregular bleeding (51.7%) and post menopausal bleeding (14.2%). It was seen that post coital bleeding was found in 8.3% cases. Shalini R *et al*⁸ in their study showed the relationship of post coital bleeding and CIN. In the present study the gross appearances of cervix revealed

cervical erosion in 51.7% of cases, rest of the cases showed growth in 27.5%, congestion in 10%, Hypertrophy with congestion seen in 5.8%, Hypertrophy with erosion was seen in 13.4% and mucus polyp was found in 4.2% of cases. Padhy also showed that cervical erosion as most common clinical finding in unhealthy cervix gross and also in cervical neoplasia and invasive carcinoma. MS Bal⁹ also showed erosion in as most common finding in their study. In the present study pap test revealed inflammatory smears in 55% of cases, mild dysplasia in 5.8%, moderate dysplasia in 9.2%, severe dysplasia in 7.5% and invasive carcinoma was seen in 22.5% of cases. The overall incidence of CIN reported by pap smear was 22.5%. The overall incidence of CIN on cytology by various authors are 6.78% by Sholapurkee *et al*, 3.5% by Sarangi *et al*, 7.75% by Bhojani KR *et al*⁴ and 8.2% by Bukhari *et al*⁶. In the present study the overall incidence of invasive carcinoma was 22.5%. Incidence of invasive cancer detected on cytology by various studies are 1.75% by Pattnaik and Pati¹⁰, 0.5% by Sarangi *et al*, 0.75% by Bhojani KR *et al*⁴, 2% by Bukhari *et al*⁶. The disparity between the results of the present study and other studies may be due to selection of high risk cases who had positive symptoms, signs and cervical pathology in the present study where as in most of the other studies mentioned above only mass screening procedures were adapted. The increased incidence of CIN and malignancy was also due to low literacy rate and low socioeconomic status, lack of health awareness in rural set up along with inaccessibility of proper health care facilities being a cause of neglecting the symptoms in the preclinical stage of cervical cancer. As this Medical College and Hospital is the only referral centre for tertiary level health care for whole of the western Odisha and some parts of nearby states, most women harbouring the frank cancer come late to this hospital after failure of all modalities of irrational treatment at the grass root level.

CONCLUSION

Thus we conclude that majority of cases of unhealthy cervix were multiparous women in the age group of 31-40 years belonging to lower socio economic class. The most common clinical finding in unhealthy cervix and in cervical neoplasia was cervical erosion and for invasive carcinoma it was cervical growth. Pap smear revealed that 55% had an inflammatory/metaplasia and 22.5% showed invasive carcinoma. Among 27 positive cases for cervical neoplasia, 5.8% had CIN I changes, 9.2% had CIN II changes and 7.5% had CIN III changes. However out of all 120 cases were subjected to either punch, wedge or cone cervical biopsy or endometrial curettage; majority of cases, 44.16% had chronic cervicitis, 4.16% had mucus polyp, 3.34% had mild dysplasia, 5.84% had moderate

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