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Abnormal Cervical Cytology Detection: A Study in Odissa

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Abstract: ***Background:*** ***Cervical cancer is the most important health disease in the world after breast cancer. It is the major health problem of womens.Cervical cytology by Papanicolaou (Pap) smears is an effective screening method for cervical premalignant and malignant conditions.*** ***Aim:*** ***To study the role of Pap smear in detecting premalignant and malignant lesions of cervix; and to determine the prevalence of various lesions.*** ***Materials and Methods:*** ***This study is based on 200 patients who attended the out-patient Department of Obstetrics and Gynaecology of AHRCC, Odissa. Pap smears were prepared from patients presenting with complaints like whitish vaginal discharge, post-coital bleeding, inter-menstrual bleeding, dyspareunia, and pain lower abdomen. After fixation and staining with papanicolou each smear was carefully examined.*** ***Results:*** ***Squamous intraepithelial lesion (SIL) found in 17(8.5%) cases, which includes low grade squamous intraepithelial lesion (LSIL) 6 (3%) and high grade squamous intraepithelial lesion (HSIL)7(3.5%) cases. Invasive carcinoma was seen in 4(2%) of cases .Out of which,3(1.5%)cases showed squamous cell carcinoma and 1 (0.5%) smear showed adenocarcinoma. . Maximum number of patients i.e. 86 (43%) were in the age group of 31-40 years. Mean age of cases with low grade squamous intraepithelial lesion (LSIL) was 37.8 years and those with HSIL and malignant carcinoma were 43.5 years and 54 years, respectively.*** ***Conclusion:*** ***Premalignant and malignant lesions of cervix can be diagnosed early by Pap smears.***

Keywords: Cervical cancer, HSIL, LSIL, papanicolaou smear, malignant carcinoma

1. Introduction

Cancer cervix is the second most common cancer in women in the world after breast cancer, while it is the leading cancer in women in the developing countries. Cancer of cervix is a major cause of death in women living in developing countries.[1] Cervical cancer has a major impact on woman's lives worldwide and one in every five women suffering from cervical cancer belongs to India. . According to IARC estimates, mortality from cervical cancer is expected to witness a 79% increase from 74,118 deaths in 2002 to 132,745 deaths by 2025 (National Cancer Registry Programme 2009, WHO 2004). At a rate of 113 age-adjusted DALYs per 100,000 population, cervical cancer accounts for 26.5% of global cervical cancer DALYs, and 11.6% of total cancer DALYs in India (WHO 2009b). Every year cervical cancer is diagnosed in about 500,000 women globally and is responsible for more than 280,000 deaths annually. One in every five women in the world suffering from cervical cancer belongs to India which has the largest burden of cervical cancer patients in the world.But unlike most other malignancies, cancer of cervix is readily preventable when effective programmes are conducted to detect and treat its precursor lesions. George Papanicolaou, an American researcher invented the Papanicolaou (Pap) test in the 1950's. The Pap test detectscervical dysplasia and its precursors[4]. It is the primary method of screening for cervical cancer. Early detection through regular screening has aided to significantly control the prevalence of this disease, thereby, lowering its incidenceSince the introduction of Pap test, a dramatic reduction has been observed in the incidence and mortality of invasive cervical cancer worldwide.[2]

2. Materials and Methods

This study was conducted on 200 Pap smears prepared from patients presenting with complaints like vaginal discharge, post-coital bleeding, inter-menstrual bleeding, dyspareunia and pain lower abdomen. Relevant history of illness was obtained from the patient and recorded on the Performa and consent from the patient taken was taken after taking permission from the ethics committee. It was ensured that no antiseptic cream and no local internal examination was done on the day of test. The smear was taken from the patient by a Ayer's spatula by rotating it 360° in side cervix when Cusco's bivalve speculum was introduced through vagina and cervix was visualized. The longer projection of the spatula was placed in the cervix near squamo-columnar junction and rotated through. The cellular material thus obtained was quickly, but gently smeared on a clean glass slide. The glass slide was then immediately fixed by ethyl alcohol putting over it .The prepared smears were then stained according to Papanicolaou's technique. The cytological interpretation of the smears was made according to the New 2001 Bethesda system.[3]

3. Results

Maximum number of patients i.e. 86 (43%) were in the age group of 31-40 years. Mean age of cases with low grade squamous intraepithelial lesion (LSIL) was 37.8 years and those with HSIL and malignant carcinoma were 43.5 years and 54 years, respectively. There was sequential progression in the development of LSIL to HSIL to malignant carcinoma with advancing age

The most common presenting complaint was discharge from vagina present in 139 (69.5%) patients. History of pain in the lower abdomen was present in 85(42.5%), inter menstrual bleeding in 42(21%), and 26 (13%) patients had complaint of dyspareunia. Post-coital bleeding was the chief complaint in 36 (18%) patients. 32 (16%) patients presented with post menopausal bleeding.

Out of the 183 smears negative for any intra epithelial lesion or malignancy, 45 (22.5%) showed normal cytological

findings and 223 (74.3%) were inflammatory. Out of 138 inflammatory smears, 115 (57.5%) showed non-specific inflammation. 23 (11.5%) had features of specific inflammation. Out of that,7(3.5%) show Candida sp. infection,9(4.5%) shows Gardnerella infection, 4 (2%) had evidence of Trichomonas infection,1 (0.5%) shows woucheria infection and 2(1%) shows Doerleins bacillus infection.

Squamous intraepithelial lesion was seen in 17 (8.5%) patients, out of which, 6 (3%) had low grade squamous intraepithelial lesion (LSIL) exhibiting koilocytic atypia in majority of the smears . In 7 (3.5%) cases of high grade squamous intraepithelial lesion (HSIL), the smears showed severely dyskaryotic cells with irregular hyper chromatic nuclei with coarsely clumped chromatin. Malignant carcinoma was detected in 4 (2%) cases. Out of these, 3 (1.5%) smears showed squamous cell carcinoma and 1 (0.5%) smear showed adenocarcinoma.

Table 1: Cytodiagonosed categories

cytodiagnosis	*categories*	*No. of patients*	*percentage*
Normal	_	45	22.5
Inflammation	Non-specific	115	57.5
	Candida sp.	7	3.5
	Gardnerella	9	4.5
	Trichomonas	4	2
	woucheria	1	0.5
	Doerleins bacillus	2	1
LSIL	_	6	3
HSIL	_	7	3.5
Malignant carcinoma	Squamous cell carcinoma	3	1.5
	Adenocarcinoma	1	0.5

4. Figures

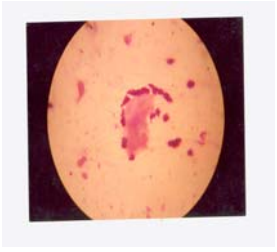

Figure 1: Candida sp. (Pap, ×100x oil immersion)

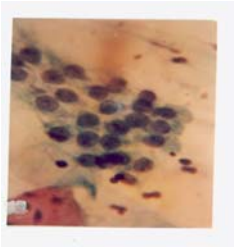

Figure 2: Trichomonas infection(Pap, ×100x oil immersion)

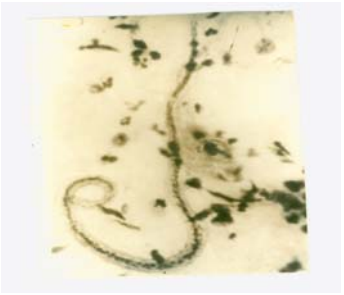

Figure 3: Woucheria(microfilaria) (Pap, ×100x oil immersion)

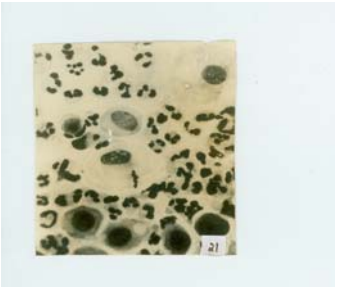

Figure 4: LSIL with koilocytic atypia showing perinuclear halo(Pap, ×100x oil immersion)

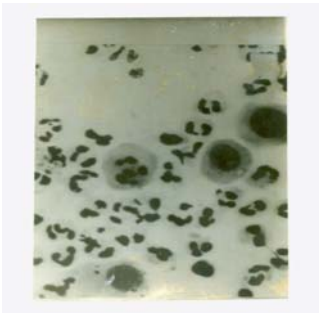

Figure 5: HSIL with hyper chromatic nuclei with prominent nucleoli(Pap, ×100x oil immersion)

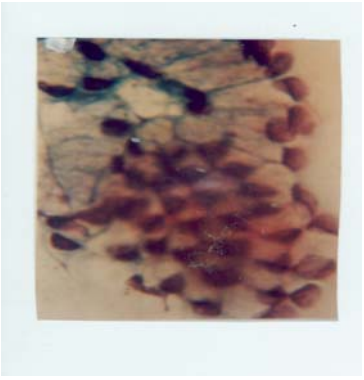

Figure 6: Squamous cell carcinoma showing strap cells signifying stromal invasion (Pap, ×100x oil immersion)

5. Discussion

In our study, mean age of patients with LSIL was 37.8 years, and those with HSIL and invasive carcinoma were 43.5 years and 54years, respectively Afrakhteh *et al.*,[2] found mean age of patients with LSIL, HSIL and invasive cancer to be 37.7, 41.7 and 54.5 years, respectively. The results are in concordance with present study.

Present study emphasized the significance of vaginal

discharge and its association with neoplastic changes in the cervix. The results correspond with many previous studies.[4,5,6]. In the present study, Squamous intraepithelial lesion was seen in 17 (8.5%) patients, out of which, 6 (3%) had low grade squamous intraepithelial lesion (LSIL) 7 (3.5%) cases of high grade squamous intraepithelial lesion (HSIL), Malignant carcinoma was detected in 4 (2%) cases. Out of these, 3 (1.5%) smears showed squamous cell carcinoma and 1 (0.5%) smear showed adenocarcinoma. The results are comparable to other studies also.[7]

6. Conclusions

While reviewing all the results, it is concluded Cervical cytology by Pap smear is a simple, safe and effective test to detect premalignant and malignant lesions of cervix at an early stage to understand the exact stage of the cervical lesion and thus help the clinicians in early and more efficient management of the patients.

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8. Source of Support

Nil

9. Conflict of Interest

There is no conflict of interest among the authors.

References

[1] Ferlay J, Shin HR, Bray F, Forman D, Mathers C, Parkin 1. DM. Estimates of worldwide burden of Cancer in 2008:
[2] Afrakhteh M, Khodakarami N, Moradi A, Alavi E, Shirazi FH. A study of 13315 papanicolaou smear diagnoses in Sohada hospital. J Fam Reprod Health. 2007;1:75–9.
[3] Kurman RJ, Solomon D. *The Bethesda system for reporting cervical vaginal cytologicdiagnosis*.New York: Springer – Verlag, 1994
[4] Khattak ST, Khattak I, Naheed T, Akhtar S, Jamal T. Detection of abnormal cervical cytology by pap smears. Gomal J Med Sci. 2006;4:74–7.
[5] Sherwani RK, Khan T, Akhtar K, Zeba A, Siddiqui FA, Rahman K, et al. Conventional Pap smear and liquid based cytology for cervical cancer screening - A comparative study. J Cytol. 2007;24:167–72.
[6] Pradhan N, Giri K, Rana A. Cervical cytology study in unhealthy and healthy looking cervix. N J Obstet Gynaecol. 2007;2:42–7.
[7] Manjit singh Bal,Rishu Goyal etal Journal of Cytology. 2012 Jan-Mar; 29(1): 45–47.

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