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Pathology

CORRELATION OF PAP SMEAR WITH HISTOPATHOLOGICAL FINDINGS IN VARIOUS CERVICAL LESIONS

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ABSTRACT

Background: Conventional cervical cytology is the most widely used cervical cancer screening test in the world. Squamous intraepithelial neoplasia (SIL) and cervical cancer remain important health problems for women worldwide.

Aim and Objective: To study various types of cervical lesions with relevant factors such as age, parity, symptoms to classify cervical lesions into malignant & benign groups and to correlate the cytological findings with histopathological findings.

Materials and Methods: This study was conducted on 800 cases of Pap smears and cervical biopsies, resected specimens. After fixation and staining, smears and cervical biopsies were processed and examined under microscope.

Results: Age wise maximum number of patients were in fourth decade (54.50%), followed by fifth decade. On cytology, 59% were inflammatory smears and frank malignancy was reported in 10% cases. LSIL and HSIL were reported in 9% and 8.50% respectively. Maximum number of cases on biopsies were those of infections (57.50%), 27% cases were those of frank malignancy; most common being invasive squamous cell carcinoma (23%), adenocarcinoma in 2% and poorly differentiated 2%. Cervical cancer was seen in 39.65% of patients with having ≥3 children. 10% cases diagnosed on cytology turned out to be malignant on biopsy.

Conclusion: Pap smear followed by cervical biopsy is an effective method for detection of pre-cancerous, cancerous and non-cancerous changes in the cervix.

KEYWORDS : Nonmalignant, cervical cancer, pap smear, cervical biopsy.

Introduction Papanicolaou (Pap) smear is a simple, non- invasive and effective method for detection of pre- cancerous, cancerous and non-cancerous changes in the cervix. Conventional cervical cytology is the most widely used cervical cancer screening test in the world and cytology screening programme in several developed countries have been associated with impressive reduction in cervical cancer burden.[2] Squamous intraepithelial lesions were viewed as precancerous lesions exhibiting many of the morphological characteristics of invasive carcinomas. Identification of these entities is the focus of cervical screening programs that aim to discover them and commence their treatment in order to prevent invasive disease.[3] In India a steady decline in cervical cancer incidence rates over the last two decades, it still occupies second position and the risk of disease is still high.[3] Cervical carcinoma documents the remarkable effects of screening for early diagnosis,prognosis and curative therapy to decrease the mortality rate. Death rate has declined for which the credit goes to Pap test and accessibility of cervix to colposcopy and biopsy. Though, the Pap smear is an effective screening test,
Volume XIV Issue IV Version I yet confirmation of the diagnosis of cervical cancer or pre invasive lesions of cancer requires a biopsy of the cervix.

Aims and Objectives

Medical ResearchThe aims of this study were to study the changes in cervical cytology with relation to age, parity and other presenting features, to classify cervical lesions into malignant and benign groups on cytological, histopathological basis and also to correlate the changes observed in cervical cytology with cervical biopsy.

Materials and Methods

Global Journal ofThis study was done on 800 cases of Pap smears and cervical biopsies (including hysterectomy specimens). Most of the patients with symptoms suggestive of cervical disease were selected. However, some having gynaecological symptoms other than cervical disease were also included. A detailed clinical history especially age, parity, menstrual pattern and vaginal discharge were noted. The patients in whom both Pap smear and biopsy was available, were included in the study. The fixed cervical smears were subjected to staining according to Papanicolaou's method. The cytological interpretation of the smears was made according to the New 2014 Bethesda system which includes endometrial evaluation done in women >45 years of age. After grossing and processing, cervical biopsies were subjected to histopathological examination.

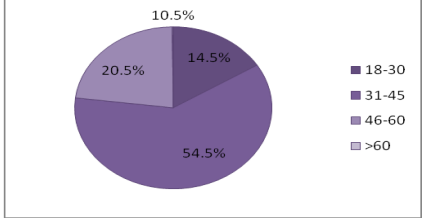
Results

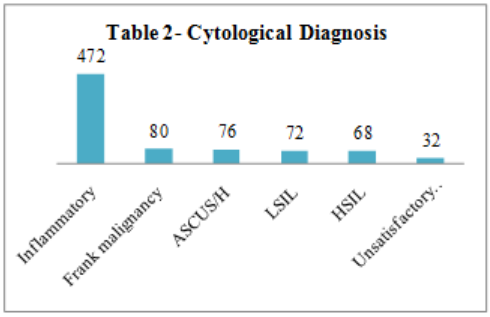
Age wise maximum number of patients were in fourth decade (54.50%), followed by fifth decade(20.50) (Table-1). In 800 majority of patients (58%) presented with vaginal discharge followed by irregular bleeding (47%). Menstrual changes were also seen in large number of patients.On cytology, 59% (472 cases) were inflammatory smears and frank malignancy was reported in 10% (80 cases), LSIL and HSIL was reported in 9% (72 cases) and 8.50% (68 cases) respectively (Table-2). Maximum number of cases on biopsy were those of infectious (57.50%), among them majority had non-specific chronic cervicitis. Squamous intraepithelial lesions were seen in 140 patients. 24 cases with Mild dysplasias correspond to low grade squamous intraepithelial lesions, 12 cases with severe dysplasias correspond to high grade intraepithelial lesions. 216 cases (27%) were those of frank malignancy on biopsy (Table-3); most common diagnosis being invasive squamous cell carcinoma 184 cases (23%) and adenocarcinoma in 16 cases (2%). Distribution of age was correlated with cancer cases. Most of the cancer cases were seen in the age group of 31- 45 years. The mean age among cancer cases was high (51.94±12.30 years) and (39.53±9.66 years) in cases who did not have cervical cancer . 80 cases diagnosed on cytology turned out to be malignant on biopsy showing strong correlation between cytology and histopathology ($p<0.001$). Some of the cases were obscured by blood and inflammation which were missed on cytology but proved to be malignant on biopsy.

Discussion

Cancer cervix is considered to be an ideal gynaecological malignancy for screening as it meets both test and disease criteria for screening. It has a long latent phase during which it can be detected as identifiable and treatable premalignant lesions which precede the invasive disease and the benefit of conducting screening for carcinoma cervix exceeds the cost involved. [4]

Table 1- Age distribuion of cervical lesions





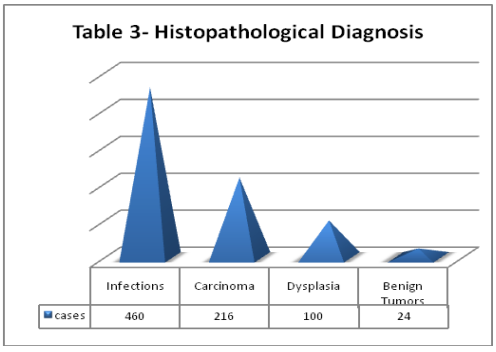


TABLE 4- Correlation of cytological and Histopathological Diagnosis

Histopathological Diagnosis	No.	Cytological Diagnosis					
		Unsatisfactory	Inflammatory	ASCUS/H	LSIL	HSIL	Ca
Infections	460	-	432	28	-	-	-
Carcinoma	216	32	-	-	48	56	80
Dysplasia	100	-	16	48	24	12	-
Benign tumors	24	-	24	-	-	-	-
Total	800	32	472	76	72	68	80

TABLE 5 - Comparative study with author

	Benign lesions	Carcinomas	SCC
Saha and Thapa	51.16%	6.97%	85.18%
Present study	59%	10%	83.33%

Despite the success of cervical cancer screening programs, questions remain about the appropriate time to begin and end screening. This review explores epidemiologic and contextual data on cervical cancer screening to inform decisions about when screening should begin and end. The incidence and mortality rates from, cervical cancer that have had a Pap smear within 3 years have decreased. In this study, more than half (54.50%) were aged between 31 to 45 years followed by 20.50% between 46 to 60 years. The mean age of patients with cancer in the present study was 51.94 years. This is close to that found by Biswas et al[5] and Missaoui et al.[6] Although, invasive cancer cervix is reported at all ages; it has two peaks, one at about 35 years and another above 50 years. The highest age of cervical cancer in the present study was 70 years and the lowest was 26 years. The mean age for non-cancer cases was Medical Research 39.53 years. Patients with cancer presented with post-coital bleeding and in cases of older age group post menopausal bleeding was seen.

In this study, 59% patients had the cytological diagnosis of benign / inflammatory and carcinoma was present in 10% of the cases. This is comparable to Saha and Thapa[8] in which benign cases were 51.16% and carcinoma was

Table 6- Differentiation of SCC

Well differentiated	23.9%
Moderately differentiated	67.4%
Poorly differentiated	8.7%

diagnosed in 6.97% of the cases. Most common cancer in the present study was squamous cell carcinoma (85.18%). This study showed results similar to those seen by Ikram et al[7] (83.33%).

As regards the various histopathological varieties of SCC, the present study found an incidence of 67.39% for moderately differentiated SCC, 23.91% for well differentiated, 8.70% for poorly differentiated. Thus, the findings of the present study are consistent with that of Missaoui et al [6] in that moderately differentiated large cell non-keratinizing variety is the commonest variety.

Conclusions

It is concluded that most commonly seen problem, infection, can be controlled with good hygiene. Cervical carcinoma is seen in large number of patients. Pap is a relatively less invasive and a simple procedure to diagnose cervical lesions in developing countries. But sometimes, there can be obscuring of the cellular details by blood, especially in malignant cases. In such cases, biopsy is helpful and confirmatory.

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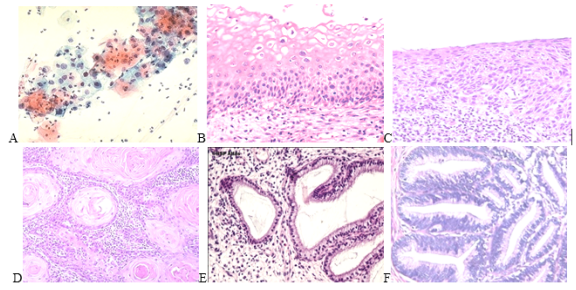

A. Inflammatory Cervical Smear, B.Low grade Squamous intraepithelial neoplasia, C.High grade squamous intraepithelial neoplasia,

D.Well differentiated SCC, E. Endocervical polyp, F.Adenocarcinoma cervix

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