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Original Research Article

A Study of Correlation of Pap Smear with Histopathological Findings in Lesions of Cervix

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Abstract

Introduction: Cervical cancer is the most common, preventable cancer and does not develop suddenly from normal epithelium but is presented by a spectrum of intraepithelial neoplasia. Pap smear is an ideal screening and low cost effective test to detect intraepithelial neoplasia especially in developing countries but has limitations and needs confirmation by histopathology.

Aims and Objectives: The aim of this study to see correlation between cervical smear and cervical biopsy.

Material and methods: This was prospective study carried out from August 2016 to August 2017 in the Department of Pathology, SMIMER, Surat. A complete clinical history and of the subjects was recorded. Pap smears stained by papanicolaou stain and cervical biopsies, with resected specimens were routinely processed and stained with H & E and examined under microscope. Conventional pap smears were reported by using Bethesda system.

Results: Total number of pap smears analysed were 100. NILM constituted major group 64. Amongst the subjects with epithelial cell abnormality (ECA), Atypical squamous cells of undetermined significance (ASCUS) were 4, Atypical Squamous Cells cannot Rule Out High-Grade Squamous Intra-epithelial Lesion (ASC H) 4, Low grade squamous intraepithelial lesion (LSIL) 12, High grade squamous intraepithelial lesion (HSIL) 16. Out of 100, 66 cases are correlated. 34 cases are deferred, 8 cases of NILM on cytology were given the diagnosis of 6 cases of CIN I,2 case of CIN II on histopathology. 2 case of LSIL on pap smear turned out CIN II on histopathology. 2 cases with diagnosis of ASCH and 2 cases with diagnosis of HSIL on pap smears, both are turned out to be squamous cell carcinoma on histopathology.

Conclusions: Pap smear is simple, inexpensive and can be performed in the outpatient department. Hence, it should be recommended routinely as a method of improving reproductive health, early detection of premalignant and malignant cervical lesions.

Keywords: NILM; Epithelial Cell Abnormality; Pap Smears; Cervical Cancer, Cervical Biopsy.

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Introduction

Cervical cancer is third common among all malignancies for women. Eighty percent of cancer cervix are seen in developing countries, where it is the commonest cancer in woman. It has been estimated that an average woman under 40 years of age has 2% chance of developing cervical carcinoma [1]. Studies show that cervical carcinoma does not develop suddenly from normal epithelium but is presented by a spectrum of intraepithelial neoplasia, if these lesions were untreated; up to one third of them would develop into carcinoma. [2]. The accessibility of the cervix to pap testing and visual examination (colposcopy) as well as the slow progression from precursor lesions to invasive carcinoma over the course of years provides ample time for screening, detection, and preventive therapy [3]. Cervical biopsy is described as thereference investigation or 'gold standard' for thediagnosis of cervical precancer [4]. The present study is about knowing the proportion of negative for intraepithelial lesions and epithelial cell abnormality, role of pap smear as a screening test in detecting these lesions.

Aims and Objectives

1. The aim of this study to see correlation between cervical smear and cervical biopsy.
2. To early detection of premalignant and malignant condition of cervix.

Materials and Methods

This was prospective study carried out from August 2016 to August 2017. All the Pap smears received from the Department of Gynecology to department of pathology, SMIMER within this period were included in the study. The inclusion criteria were: 1) Symptomatic patients with normal cervix on clinical examination. 2) Symptomatic patients with suspicious cervical lesion. The exclusion criteria were: 1) Patients who did not have cervical biopsy done. 2) Already have diagnosed cervical cancer. Patient data in the form of name, age, clinical complaints, and per vaginal findings were collected from requisition form and noted on structured proforma. Pap smear was reported using the 2001 Bethesda system. Correlation with histopathological findings was done in cervical biopsy or total hysterectomy specimens were available.

Results

Total number of pap smears received during this period were 100 with Cervical biopsies available for cyto-histological correlation. Pap smears revealed epithelial cell abnormality in 36 subjects, and smears were negative for intraepithelial lesions or malignancy (NILM) in 64 subjects.

Table 1: Age wise distribution

AGE (years)	Cases
18-30	14
31-45	54
46-60	20
>60	12
Total	100

Table 2: Duration of symptoms

Duration of symptoms	Cases
Up to 1 month	80
1-3 months	12
3-6 months	06
>6 months	02

Table 3: Clinical symptoms

Clinical features	Percentage
Whitish discharge per vagina	46
Pain in lower abdomen	22
Menstrual abnormalities	16
Postmenopausal bleeding	10
Others	04

Table 4: Cytomorphological diagnosis and positivity of smear

Cytological Patterns on PAP smear	No. of cases on PAP	Histopathological diagnosis					
		Non neoplastic	CIN 1	CIN 2	CIN 3	CAIN SITU	SCC
NILM	64	56	6	2			
ASC-US	04		4				
ASC-H	04				2		2
LSIL	12		10	2			
HSIL	16			8	4	2	2
Total cases	100	56	20	12	6	2	4

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. In this study, more than half (54%) were aged between 31 to 45 years followed by 20 % between 46 to 60 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 72 years and the lowest was 28 years. In this study, the most common symptoms was discharge per vaginum (46%) followed by pain in abdomeni 22% of the patients. Patients with cancer also presented with post menopausal bleeding was seen. In 64 cases of NILM, non specific inflammation seen in 40 cases, 12 cases shows bacterial vaginosis, 8 smears showed atrophy. 4 cases showed specific infections in smearswas, Trichomonasvaginalis (Figure 1). Amongst the subjects with ECA, Atypical squamous cells of undetermined significance (ASCUS) were 4% (Figure 2), 8% ASC H, Low grade squamous intraepithelial lesion (LSIL): 12% (Figure 3), High grade squamous intraepithelial lesion (HSIL): 8%. In the present study NILM cases 56/64 (87.5%), ASCUS cases 4/4 (100%), ASCH cases 2/4 (50%), LSIL cases 10/12 (83.3%), HSIL cases 14/16 (87.5%) were correlated on histopathology. This is comparable to Sahaand Thapa [7] in which benign cases were 51.16% andcarcinoma was diagnosed in 6.97% of the cases. Maximum number of cases on biopsy were those of infections (87.5%), among them majority had non-specific chronic cervicitis. Out of 34 deferred cases, 8 cases of NILM six cases on cytology were given the diagnosis of 6 cases of CIN I, 2 case of CIN II on histopathology. 2 case of LSIL on pap turned out CIN II on histopathology. 2 cases with diagnosis of ASCH and 2 cases with diagnosis of HSIL on pap smears, two turned out to be squamous cell carcinoma on histopathology. Most common cancer in the present study was squamous cellcarcinoma. This study showed results similarto those seen by Ikram et al. [8] (83.33%).

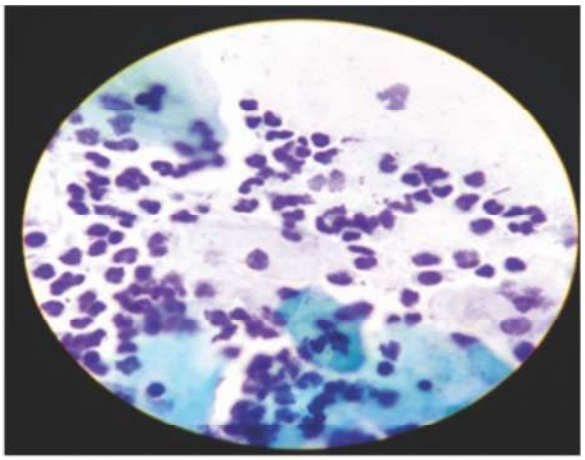

Fig. 1: Candida (PAP, 40x)

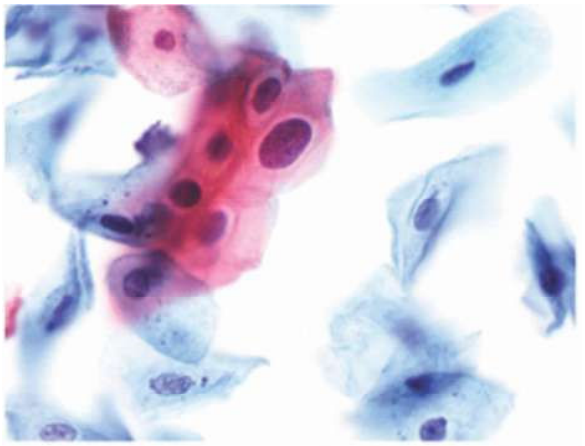

Fig. 2: LSIL (PAP, 40x)

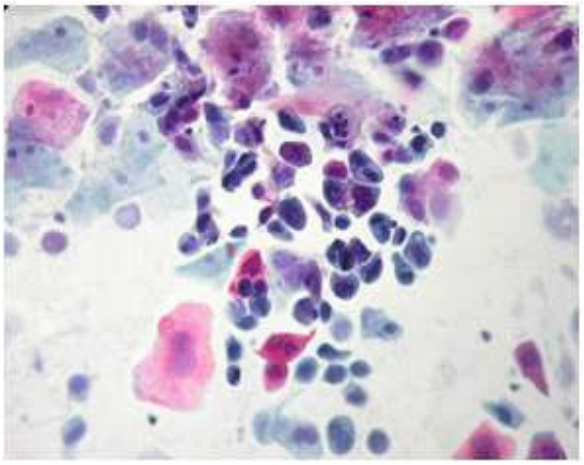

Fig. 3: HSIL (PAP, 40 xs)

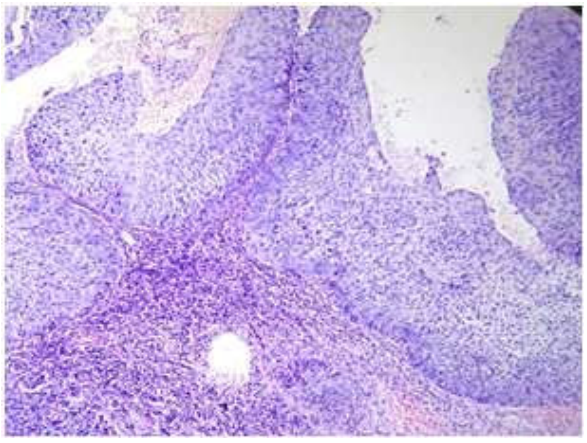

Fig. 4: CIN III (H & E, 40x)

Conclusion

This study demonstrated high accuracy and correlationbetween Papsmearand histology. The main goal of cervical screening is to identify women with high-grade intraepithelial lesions, which were considered to be the true precursors of invasive cancer and require treatment. Pap is a relatively less invasive and a simple procedure to diagnose cervical lesions in developing countries.

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