

Detection Of Abnormal Cervical Cytology In Papanicolaou Smears At A Tertiary Care Hospital

Dr. Ramit Chakraborty¹, Dr. Debaprasad Chakraborty², Dr. HIRAK MAJUMDER³

1(2nd year Post Graduate Trainee, Department of Pathology, Tripura Medical College & Dr. BRAM Teaching Hospital, Agartala, India)

2(Associate Professor, Department of Pathology, Tripura Medical College & Dr. BRAM Teaching Hospital, Agartala, India)

3(Junior Resident, Department of Pathology, Tripura Medical College & Dr. BRAM Teaching Hospital, Agartala, India)

Abstract:

Objective: After breast cancer, cervical cancer is the second most common cancer in women worldwide. In developing countries it happens to be a leading cause of death by cancer. It is one of the most preventable and curable of all cancers. Most women due to lack of awareness never undergo a cervical Pap smear screening. The Objective here is to study the role of Pap smear in detecting premalignant and malignant lesions as well as non-neoplastic lesions of cervix.

Methods: This retrospective study of 1058 women with age group 20 to 90 years was carried out over 4 years from 2012 to 2015 at cytology section of pathology department, Tripura Medical College, Hapania. Pap smears were prepared and after fixation and staining, each smear was carefully examined.

Results: In this study, Low-grade squamous intraepithelial lesions was the most common with 86 cases (8.1%) followed by High-grade squamous intraepithelial lesions with 52 cases (4.9%). Squamous cell carcinoma 35 cases (3.3%), ASCUS 12 cases (1.1%).

Conclusion: Pap smear happens to be an elementary, economical, safe and pragmatic diagnostic tool for early detection of cervical cancer, so it should be established as a routine screening procedure. A routine pap screening cytology of uterine cervix of all the women aged 40 to 50 years should be encouraged by the medical fraternity.

Key words: Pap smear, Cervical cancer, The Bethesda System

I. Introduction

The Papanicolaou (Pap) smear was introduced in 1941 and became the standard screening test for cervical cancer and premalignant lesions¹. Cervical cancer is the second most common malignancy in women world over, while it is the leading cancer in women in developing countries. Globally, 15% of all cancers in females are cervical cancers, while in Southeast Asia, cervical cancer accounts for 20%-30% of all cancers. Cancer of cervix is a major cause of death in women living in developing countries². Cervix cancers in the early stage of development, or carcinomas in situ, are highly treatable because the neoplastic cells are located in a layer of cells in or around the cervix and have yet to spread to other parts of the body. Once the malignant cells metastasize to other parts of the body the disease is more difficult to treat and cervical cancer treatment becomes more complex³. It is estimated that in India 1,26,000 new cases occur each year⁴.

Though pap test plays an exigent role in detection of carcinoma and precancer, its role in diagnosis of infective inflammatory conditions including the identification of causative organism, hormone related benign epithelial changes and changes due to therapeutic agents is also successful⁵.

Originally, the term Pap smear was used for smears made out of posterior fornix material for purpose of detection of cancer and pre-cancer lesions. But presently, the term is used for smear made from material collected from vagina, endocervical canal, ectocervix or vaginal vault⁵.

The easiness, effectuality and versatility of Pap test have made it ubiquitous in routine clinical examination and a large chunk of workload in gynecological and pathological practice is due to this test⁶.

II. Materials And Methods

In the study presented here, results of PAP smears obtained from 1058 women were analyzed, which had been examined in cytology section (Department of Pathology, Tripura Medical College, Hapania) during 4 years from 2012 to 2015. The mean age of the women was from 20 to 90 years. This study was conducted on 1058 Pap smears prepared from patients presenting with complaints like vaginal discharge, post-coital bleeding, inter-menstrual bleeding, dyspareunia and pain lower abdomen.

It was ensured that no local douche, antiseptic cream and no local internal examination was done on the day of test. The patient was placed in dorsal lithotomy position and a Cusco's bivalve speculum was introduced through vagina and cervix was visualized. The longer projection of the Ayre's spatula was placed in the cervix near squamo-columnar junction and rotated through 360°. The cellular material thus obtained was quickly, but gently smeared on a clean glass slide. The glass slide was then immediately put into the coplin jar containing 95% ethyl alcohol which acted as a fixative. 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.

III. Results

Maximum number of patients, 33.4% (n=353) were in the age group of 30-39 years (fourth decade) followed by 28.0% (n=296) in fifth decade. The most common presenting complaint was discharge per vaginum present in 624 (59%) patients. History of pain in the lower abdomen was present in 204 (19.3%), inter menstrual bleeding in 106 (10%), and 60 (5.7%) patients had complaint of dyspareunia. Post-coital bleeding was the chief complaint in 53 (5%) patients.

185 cases were positive for malignancy, 219 were of inflammatory or infectious causes (which includes nonspecific inflammation, trichomonas, gardnerella, candidiasis, herpes infections and bacterial vaginosis), and in 135 smears, the material was inadequate for evaluation. 519 cases showed normal cytological findings.

Table 1: Age-wise distribution of total number of patients

Age group	Number of cases	Percentage
20-29	142	13.4
30-39	353	33.4
40-49	296	28.0
50-59	127	12.0
60 or more	140	13.2
Total	1058	100

Table 2: Papsmear cytodiagnosis

Serial Number	Diagnosis	No. of cases	Percentage
1	Normal	519	49.3
2	Inflammatory	219	20.6
3	ASCUS	12	1.1
4	LSIL	86	8.1
5	HSIL	52	4.9
6	Squamous cell carcinoma	35	3.3
7	Adenocarcinoma	0	0
8	Unsatisfactory smear	135	12.7
9	Total	1058	100

IV. Discussion

As a result of implementation of widespread screening with cervical cytology, incidence of cervical cancer has shown a decrease of more than 50% in the past 30 years. In 1975, the rate was 14.8 per 100,000 women in the United States and by 2006 it reduced to 6.5 per 100,000 women. Naturally, mortality due to cervical cancer has undergone a similar decrease^{7,19}.

The result of present study and their comparison with other workers are tabulated above:

Table 3: Comparison of findings of Pap smear cytology with other studies

Name of workers	No. of cases	Inadequate (%)	Normal (%)	Inflammatory Lesions (%)	SIL (%)	Invasive carcinoma (%)
Jajoo et al ⁸	1200	-	20.84	65	13.33	0.83
Yajima et al ⁹	959475	-	-	-	-	0.10
Beinton et al ¹⁰	130	-	20	59.23	11.15	2.69
Mital et al ¹¹	250	-	40.65	12.70	40.65	6.00
Chauhan et al ¹²	5778	-	9.76	69.19	2.28	-
Spinilla et al ¹³ (postmenopausal)	1483	-	17.39	9.64	-	-
Tabrizi et al ¹⁴	460(p)	8.30	54.16	23.30	12.58	1.66
Thomas et al ¹⁵		5.88				-
Karuma et al ¹⁶	100(p)	-	-	-	12	-
Mishra et al ¹⁷	764(p)	-	-	-	11.3	-
Sherwani et al ¹⁸	160	-	85	-	11.2	3.7
Present study	1058	12.7	49.3	20.6	13	3.3

Above table shows higher incidence of inadequate smears in present study. Incidence of inflammatory lesions, SIL and invasive carcinoma was comparative to others studies

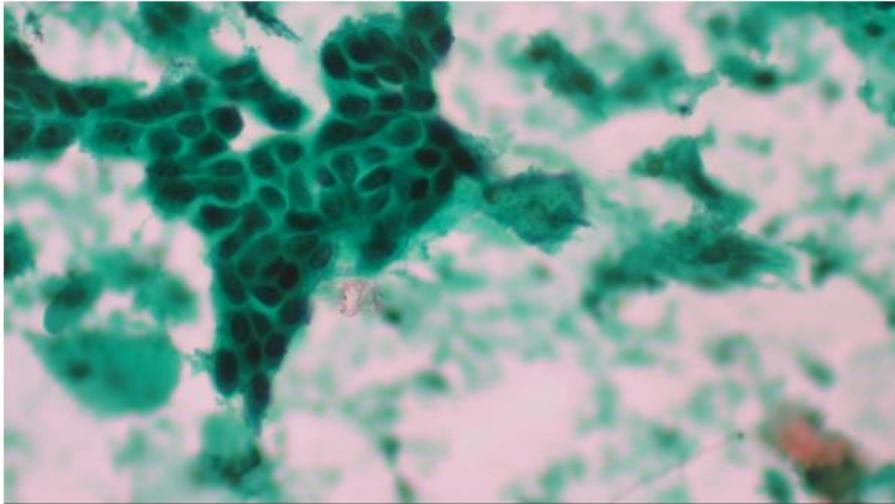


Fig 1 - Adenocarcinoma cervix. 40x PAPsmear

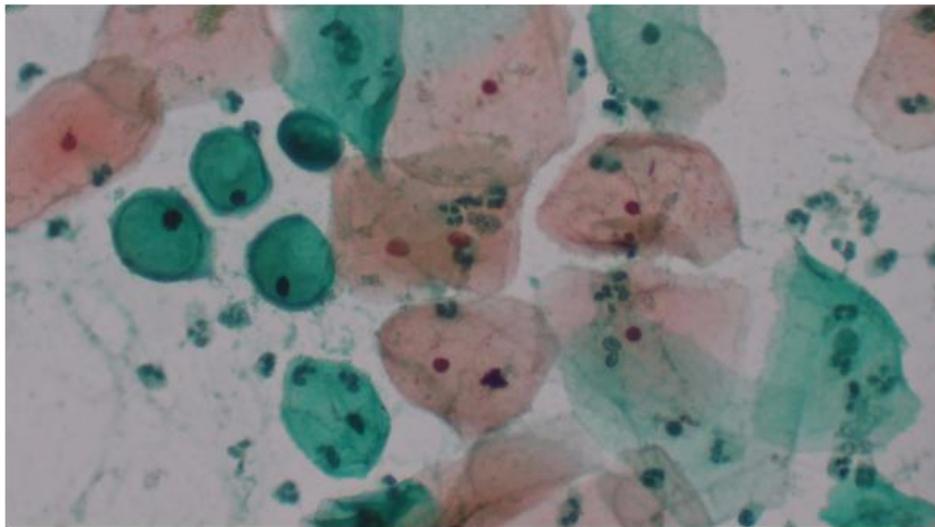


Fig 2 - Chronic cervicitis. 40x PAPsmear

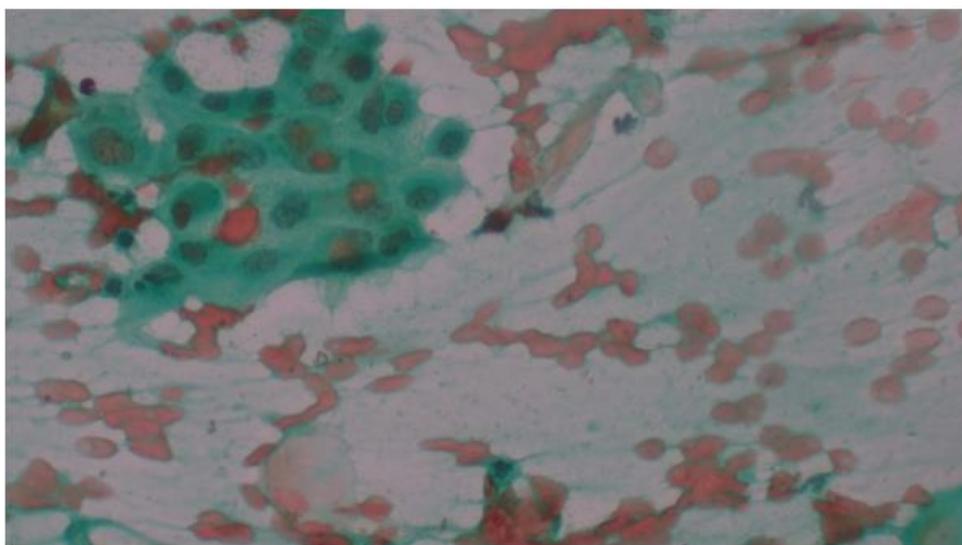


Fig 3 - High grade Squamous Intraepithelial Lesion. 40x PAPsmear

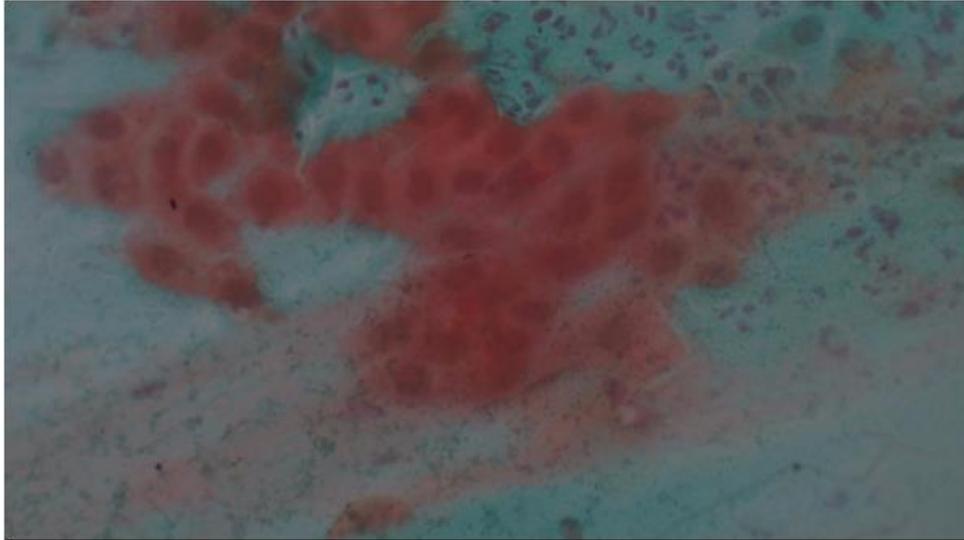


Fig 4 - Keratinising Squamous cell carcinoma. 40x PAPsmear

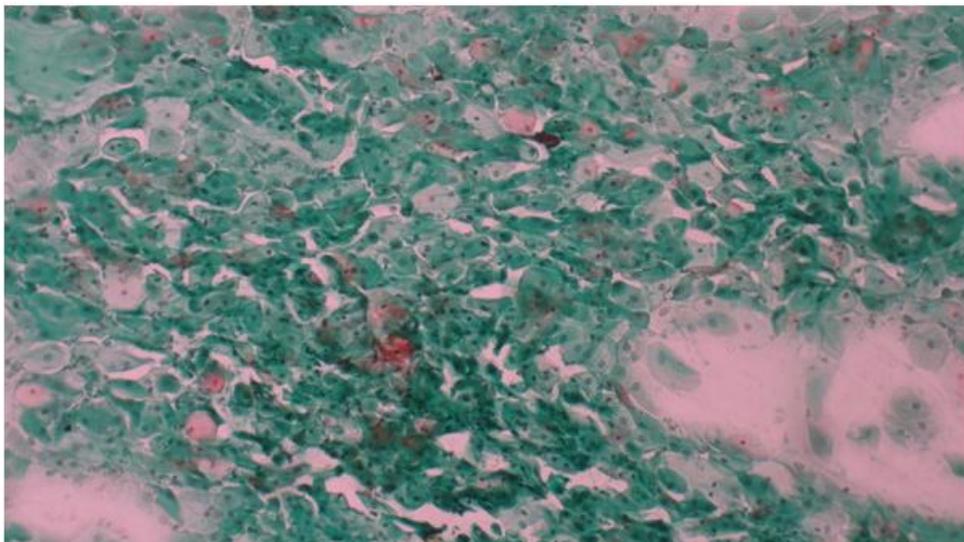


Fig 5 - Low grade Squamous Intraepithelial Lesion. 40x PAPsmear

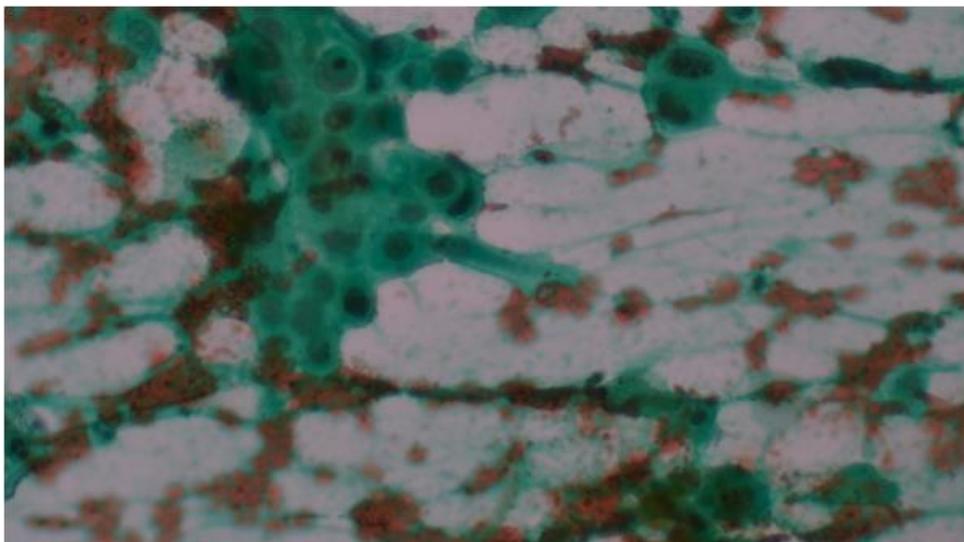


Fig 6 - Well differentiated squamous cell carcinoma cervix. 40x PAPsmear

V. Conclusion

Cervical cancer is one of the most common malignancies in women of developing country like India. Pap smear happens to be an elementary, economical, safe and pragmatic diagnostic tool for early detection of cervical cancer. Passionate effort must be levied to establish Cervical Pap smear as a routine screening procedure. Its role in diagnosis of inflammatory lesions including the identification of causative organism, atrophic changes, changes of radiation therapy and some rare tumors must also be exploited. It is recommended that a routine pap screening cytology of uterine cervix of all the women aged 40 to 50 years be encouraged by the medical fraternity.

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