



CLINICAL SYMPTOMATOLOGY AND CYTOMORPHOLOGICAL EVALUATION OF PAP SMEARS IN A TERTIARY CARE HOSPITAL IN RURAL INDIA

Pathology

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ABSTRACT

Introduction: One of the leading causes of mortality and morbidity and the most common malignancy of women in developing countries is carcinoma cervix. Pap smear examination, which is based on 2014 Bethesda system, serves as an easy screening method to help in the early diagnosis. This descriptive study is based on clinical symptomatology and cytomorphological evaluation of pap smears. The study was conducted at Sree Mookambika Institute of Medical Sciences, Kulasekharam, Kanyakumari, Tamil Nadu, over a period of two years from October 2018 to September 2020. A total of 2702 cases were screened. 2698 (97.85%) smears were satisfactory pap smears and 04 (0.15%) were insufficient smears. Of the 2694 sufficient smears, 2402 (88.90%) smears were reported as negative for squamous epithelial abnormalities while 93 (3.44%) showed inflammatory/reactive changes. 16 (0.59%) were diagnosed as positive for cervical epithelial abnormalities. It is concluded that routine screening is the best method for early detection and prevention of carcinoma cervix.

KEYWORDS

Bethesda system 2014; cervical intraepithelial lesions; pap smear.

INTRODUCTION:

Cervical cancer is the second most common cancer in female population and continues to be a major cause of morbidity and mortality among the female population in developing countries.¹⁻³

In developing countries, prevalence of cervical cancer is higher when compared to developed countries because of ineffective screening programmes. Pap smear provides an easy approach to early diagnosis of pre-cancerous and cancerous lesions. It is easy to perform, convenient, cost effective and reliable method for screening of cervical lesions. After the introduction of pap smear based cervical screening method, the incidence and mortality of invasive cervical cancer is reduced dramatically.⁴⁻⁶

20 lakhs population of women are suffering from cervical cancer worldwide, with 500,000 new cases and 280,000 cervical cancer related deaths annually.⁷

Various population based studies showed that in India 126,000 new cases of cervical cancer occur annually.⁸

Developing countries like India, the high incidence of cervical cancer is an important health care related issue.

Pap test detects cervical epithelial cell abnormalities which represent a spectrum of intraepithelial lesions, from LSIL, HSIL to invasive cancer and prompts early diagnosis.⁹

MATERIALS AND METHODS

This is a descriptive study done in the department of Pathology at Sree Mookambika Institute of Medical Sciences, Kulasekharam, Kanyakumari, Tamil Nadu for the period of two years from October 2018 to September 2020. All cervical pap smears received in the Department of Pathology during the study period were included. Required clinical history of the patients were obtained from the requisition forms.

Table 1. Distribution of patients according to symptoms.

Symptoms	No. of patients (%)
Vaginal discharge	32
Lower abdominal pain	469
Backache	187
Post coital bleeding	6
Post menopausal bleeding	23
Routine screening	1985
Total	2702

A total of 2702 cases were screened. All cases were included in this study. Those who presented with symptoms and routine screening cases were included in the study (Table 1). vaginal discharge, irregular

menstruation, post coital bleeding and back pain were considered as symptomatic patients. Cervical smears were collected in the OBG department by

Table 2. Distribution of cases according to Bethesda System of cervical cytology 2014.

Category	No. of patients (%)
satisfactory smears	2698 (99.85%)
Unsatisfactory smears	04 (0.15%)
Inflammatory smears	93 (3.44%)
Keratinotic changes	2 (0.07%)
Endometrial clusters	3 (0.11%)
Atrophic smears	182 (6.74%)
NIELM	2402 (88.90%)
ASCUS	4 (0.15%)
LSIL	8 (0.30%)
HSIL	2 (0.07%)
Squamous cell carcinoma	2 (0.07%)
Total	2702

(NIELM – Negative for intraepithelial lesion or malignancy, ASCUS – Atypical squamous cells of undetermined significance, LSIL- Low grade squamous intraepithelial lesion, HSIL- High grade squamous intraepithelial lesion.)

gynecologist with the help of Ayres wooden spatula, samplings of both ecto and endocervix were obtained.¹⁰ The smear was immediately fixed in isopropyl alcohol. In the laboratory the Pap staining was done and smears were evaluated by light microscopy using the 2014 Bethesda System for reporting cervical cytology.¹¹

Epithelial cell abnormalities particularly the squamous epithelial abnormality were categorized into atypical squamous cells (ASC) including ASC of undetermined significance (ASC-US) and ASC, cannot exclude high grade squamous intraepithelial lesions (ASCH) and squamous intraepithelial lesion (SIL). SIL was again subdivided into low-grade squamous intraepithelial lesion (LSIL) and high-grade squamous intraepithelial lesion (HSIL). Invasive malignancy was termed as squamous cell carcinoma. Similarly, glandular cell abnormalities were categorized into atypical endocervical cells not otherwise specified, atypical endometrial cell not otherwise specified and atypical glandular cells not otherwise specified.

All the data were manually collected and results were scrutinized.

RESULTS

A total of 2702 cervical pap smears were received and reported in the Department Of Pathology at Sree Mookambika Institute of Medical Sciences, Kulasekharam, Kanyakumari, for a period of two years from

October 2018 to september 2020. This study showed (Table 2) 2698 (99.85%) satisfactory smears and 04 (0.15%) unsatisfactory smears. These smears were excluded from the study. Microscopic examination of the smears showed 2402(88.90%) NIELM, 93 (3.44%) inflammatory smears, 182(6.74%) atrophic smears, 4(0.15%) ASCUS, 8 (0.30%) LSIL, 2 (0.07%) HSIL and 2 (0.07%) squamous cell carcinoma. Keratotic changes were seen in 2(0.07%) cases, endometrial clusters were seen in 3(0.11%) cases. No endocervical or endometrial cells, favour neoplastic or adenocarcinoma in situ were reported in this study.

DISCUSSION

The changing life style pattern, cultural habits and geographical differences in developing countries, necessitate importance of cancer screening programs¹². The incidence of cervical cancer has decreased more than 50% in the past 30 years because of widespread screening with cervical cytology¹³. Considering the efficacy of Pap smear cytology in preventing cervical cancer, it is recommended that screening programmes to be initiated in all women at the age of 21 years.

Women younger than 21 years of age should not be screened, regardless of the age of sexual initiation. Women aged 21 to 29 years, screening once in every 3 years with cytology (liquidbased or conventional) alone. Women aged 30 to 65 years screening once in every 3 years with cytology alone, or every 5 years if cotesting with cytology and human papillomavirus (HPV) assay (preferred by ACOG and ACS/ASCCP/ASCP).

Discontinuation of screening can be done at the age of 65 years if adequate prior screening and no history of cervical intraepithelial neoplasia (CIN) 2 or higher. Although control of cervical cancer by early detection and treatment remains a priority of the National Cancer Control Programme of India, there is a lacunae in implementing cytology screening programmes.

Possible reasons are technical, financial constraint, lack of awareness among the public and insufficient health education about cervical cytology screening methods.⁸ Introduction of conventional Pap screening services reduces cervical cancer rates by 60% to 90% within 3 years of implementation.¹⁴ So Pap test is designated as the "single best cancer screening procedure". The past failures of cervical screening in developing countries are due to defects in implementing the programme rather than technological limitations.¹⁵

Predominant age group in the present study was between 25-48 years and the age of the patient ranged from 22 to 80 years. These finding were comparable to studies done by Hirachand et al, Ranabhat et al, Bukhar et al and Bamanikar et al¹⁶. In the studies conducted by Yeasmin S there were no cases below 20 years.¹⁷ Epithelial cell abnormalities were 0.59% of cases in our study which includes LSIL, HSIL and ASCUS. LSIL (0.30%) seen in our study was similar to other studies (0.15%, 0.3% and 0.2%)¹⁸. Study conducted Kapila K et al¹⁹ showed prevalence of cervical cell abnormality in Pap smear was 4.3%.

Study conducted by Misra JS et al²⁰ showed incidence of SIL and cervical malignancy were 5.9% and 0.6% respectively. The study revealed the importance of cytological screening in minimizing the incidence of carcinoma cervix in the segment of the urban population screened, as the incidence of carcinoma cervix is reduced to 0.5% in the second half from 1.1% of first half screening period.

It may be due to public awareness, and regular cervical screening.

CONCLUSION

In a country like India with predominant rural population, cervical screening awareness programmes should be formulated with co-operation of media, NGO's and government for early detection of cervical cancer by pap test followed by effective management.

Institutional Research Committee and Ethical Committee clearance were obtained.

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Conflicts of interest

No conflicts of interest.

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