International Journal of Clinical and Diagnostic Pathology

ISSN (P): 2617-7226
ISSN (E): 2617-7234
www.patholjournal.com
2020; 3(2): 81-83
Received: 04-02-2020
Accepted: 06-03-2020

Dr. Rahul Chandran CH
Post Graduate Department of Pathology, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, India

Dr. Vidhya
Post Graduate Department of Pathology, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, India

Dr. Bindhuja J
Associate Professor, Department of Pathology, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, India

Corresponding Author:
Dr. Bindhuja J
Associate Professor, Department of Pathology, Sree Mookambika Institute of Medical Sciences, Kulasekharam, Tamil Nadu, India

Descriptive study on cervical pap smear pattern in a tertiary care centre: A one-year study

Dr. Rahul Chandran CH, Dr. Vidhya and Dr. Bindhuja J

DOI: https://doi.org/10.33545/pathol.2020.v3.i2b.226

Abstract
Background: Cervical cancer is one of the leading cause of mortality and morbidity among women worldwide. Only few studies are available for cervical epithelial abnormalities, especially in Kanyakumari district. The objective of the study was to find out the prevalence of cervical cytological pattern.
Methods & Materials: A one year retrospective descriptive study was conducted in Department of Pathology of Sree Mookambika Institute of Medical Sciences, Kulasekharam to evaluate all the pap smears reported during January 2018 to December 2018. Smears were assessed according to the revised 2014 Bethesda system. A total of 2000 cases were analyzed. Prevalence of epithelial abnormalities was calculated in percentages.
Results: Out of total 2000 patients, Majority of smears were negative for intraepithelial lesion or malignancy (NILEM). Predominant epithelial cell abnormality was high grade squamous intraepithelial lesions (14 cases, 0.7%) Epithelial abnormality was seen totally in (24 cases, 1.2%) population. In this study epithelial abnormality was more prevalent in post-menopausal age group more than 50 year.
Conclusion: Though cervical cancer is a leading cause of death in India, our hospital based study shows a relatively low prevalence which is similar to that of developed world Pap smear testing is a very useful, simple, economical and safe tool to detect preinvasive cervical epithelial lesions. Hence on a routine basis, every woman above the age of 30 must be subjected to Pap smear and this must be continued even in post-menopausal period as most of patients with epithelial abnormalities in our study falls in this group.

Keywords: Pap smear, Post-menopausal, HSIL

Introduction
Cancer of uterine cervix is one of the leading cause of mortality and morbidity among women worldwide [1]. It is the third most frequently occurring cancer affecting women after breast, colorectal and lung cancers; it is also the seventh most common type of cancer overall. It is estimated that in India about 126,000 new cases of cervical cancer occur annually, and usually 70% or more of these cases present in stage III or Higher at the time of diagnosis. Cancer of cervix has a long latent period of about 10 years. Cervical cancer starts as a precancerous lesion, called dysplasia also termed as cervical intraepithelial neoplasia (CIN). CIN starts at the transformation zone especially in relation to the squamous metaplasia and reserve cell hyperplasia. Cancer of cervix is readily preventable condition as it is easy to identify and treat its precursor lesions. The prognosis of cervical cancers worsens with the increasing stage of the disease. The early diagnosis and prompt specific treatment of pre-invasive or early stages of the disease reduces the prevalence of invasive carcinoma and improves the prognostic outcome of the patients. Unfortunately, most of the patients with early stages or pre-invasive carcinoma of cervix are asymptomatic and do not produce any specific clinical alterations of the cervix or may have only mild symptoms.
The screening for cervical cancer is based on the assumption that early detection may allow early treatment. It is a well-known fact that cytology based screening programs has resulted in dramatic reduction in the incidence and mortality of invasive cervical cancer in different countries of the world[4]. Cervical cancers are more common in developing countries. The high burden of cervical cancer in developing countries is largely due to a lack of effective screening programs.

Liquid-based cytology is popular in the developed countries, in low resource settings, a conventional Pap smear test is the main screening system still following. It is important to know the overall scenario of epithelial cell abnormality in the Pap smear, especially in a developing country like India which accounts for quarter of the cervical cancer deaths. By knowing the patterns of premalignant and malignant lesions in an area, we can set up screening strategies and counsel women about the need of cervical screening. We have undertaken the present study using the revised Bethesda System, with the intention to estimate the prevalence of cervical epithelial abnormalities.

Materials and Methods

The study is a one year retrospective descriptive study conducted in Department of Pathology of Sree Mookambika Institute of Medical Sciences, Kulasekharam, to evaluate all the pap smears reported during January 2018 to December 2018. Smears were assessed according to the revised 2014 Bethesda system. A total of 2000 cases were analyzed. Prevalence of epithelial abnormalities was calculated in percentages. As this was a retrospective study, no separate informed consent was required and the study was approved by Institutional Ethics Committee. All cytological smears were taken by gynecologists for routine screening by conventional method. After fixation in 80% isopropyl alcohol, these slides were stained with Papanicolaou's method. Specimen adequacy as well as reporting was assessed according to the revised 2014 Bethesda system. Data on patient's clinical details were collected from patient's case notes & cytopathologic findings from slide archive. All patients aged more than 20 years were included in this study.

Results

A total number of 2000 cases were studied, in which 41 cases (2.05%) were unsatisfactory for evaluation. Causes for inadequacy were inadequate squamous cells or blood. A totally 24 cases (1.2%) cases found epithelial abnormalities. In this study patients between age 40-70 were found out epithelial abnormality. Mean age is 55 year. Common abnormality in present study was HSIL (14 cases, 0.7%). Other cytological finding of the smear are tabulate in Table1.

Table 1: Results of Pap smears

PAP Result	No of cases	Percentage of total no of smears
Unsatisfactory	41	2.05
ASCUS	2	0.1
LSIL	5	0.25
HSIL	14	0.7
SCC	3	0.15
NILM	1935	96.75
TOTAL	2000	100

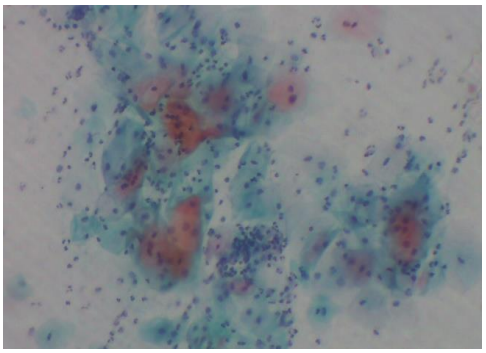


Fig 1: Inflammatory pap smear 10x

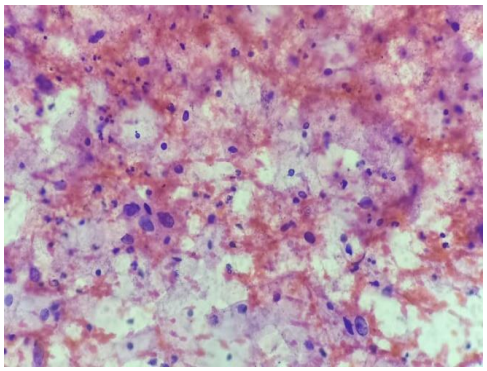
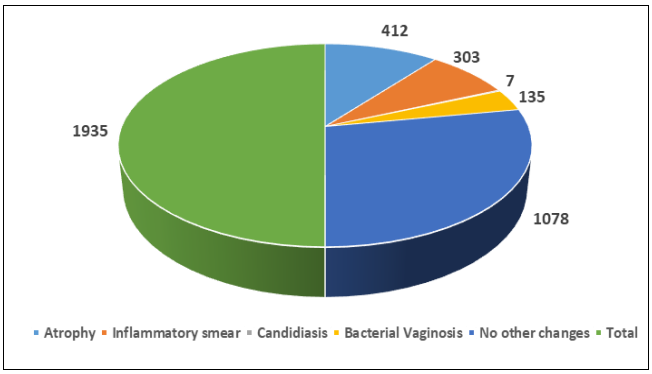


Fig 2: High grade squamous intra epithelial lesion 10x

Non neoplastic lesions were seen in 1935 (96.75%) of the samples. Infections occur in our study are candidiasis and bacterial vaginosis. Bacterial vaginosis was the most common infection (135 cases). Totally 412 cases shows atropic pap smear. Non neoplastic lesion summarised in Table 2.

Table 2: Non neoplastic finding in pap smear

PAP Result	No of cases
Atrophy	412
Inflammatory smear	303
Candidiasis	7
Bacterial Vaginosis	135
No other changes	1078
Total	1935



Discussion

The common presenting complaint was white discharge per vaginum (leucorrhoea) in 467 followed by abdominal pain in 275 patients.

The main differential diagnosis of ASCUS is LSIL, marked reactive changes. There are also problematic zones in the interpretation of HSIL and LSIL and glandular epithelial abnormalities. In all these cases, histopathological examination from a representative area would be a gold standard method.

It is a well-known fact that the burden of cervical cancer has been reduced dramatically after the introduction of screening programmes. Various studies around the world has shown a wide range of prevalence of cervical epithelial abnormalities from as low as 1.14% in Nepal to 14.52% in Iran. No consistent pattern emerged in these studies both in developed and developing countries.

There are also problematic zones in the interpretation of HSIL and LSIL and glandular epithelial abnormalities.

Author	Year	Place	No of Patients	Total prevalence (%)	Epithelial abnormality (%)			
					ASC-US	LSIL	HSIL	SCC
Alakananda *et al* [7]	2015-16	Guwahati	280	25	12.3	3	7	3
Patel *et al*. [8]	2014	Gujarat	1808	4.65	2.9	0.6	0.6	0.3
Thomas EE *et al*. [9]	2014-2015	Kannur	3059	2.15	0.26	1.01	0.88	-
Present study	2019	Kulasekharam	2000	3.25	0.1	0.25	0.7	0.15

This fact highlights the need for cytological screening in older age group of patients and the need to create awareness about cervical cancer for motivating them to attend screening. Kerala is a state in India, which is well known for its high literacy level and good health care system. But study conducted by Beevi NA *et al*. [11] among health care workers in a Govt. Medical College, Calicut shows that about 46.7% of them had never heard of Pap smear. Only 30.7% had underwent Pap smear atleast once. This highlights the need for more awareness programmes among their population. Limitations of this study are few but important. Being a retrospective study, eventual outcome of all patients could not be known and hence no consistent pattern of the disease could be established. Use of liquid based cytology methods may further reduce the number of unsatisfactory smears, but is not cost effective in our set up. In future, introduction of HPV vaccine in our areas is likely to reduce the number of abnormal smears further. For this, studies has to be done incorporating HPV testing also.

Conclusion

In the present setup conventional pap smears still remain the most dependable screening and diagnostic test. Diagnosing infective lesions, reactive / regenerative changes and malignancy by pap smears is highly accurate. The problematic zone is ASCUS, LSIL and HSIL, which is also documented in the present study. In ASCUS we have atypical squamous cells, sometimes showing cytopathic effects mimicking LSIL. In such cases besides biopsy, HPV DNA testing would help us in further follow up of the cases and management. In cases of LSIL on Pap smear, colposcopy guided biopsy would help us in taking biopsy from a representative area to rule out HSIL. Regular interval screening and stringent quality control are necessary to improve the efficacy of Pap smear screening test.

References

1. Patel MM, Pandya AN, Modi J. Cervical pap smear study and its utility in cancer screening, to specify the strategy for cervical cancer control. National Journal of Community. 2011; 2(1):49-51.
2. Bukhari M, Qamar S, Niazi S, Saba K, Majeed M, Naeem S. Clinicopathological importance of Papanicolaou smears for the diagnosis of premalignant and malignant lesions of the cervix. Journal of Cytology. 2012; 29(1):20.
3. Tiwari A, Kishore J, Tiwari A. Perceptions and concerns of women undergoing Pap smear examination in a tertiary care hospital of India. Indian J Cancer. 2011; 48(4):477-82.
4. Mody DR. Glandular cell abnormalities. In: Mody DR, editor. Diagnostic pathology cytopathology. Salt Lake City (Utah): Amirsys Publishing Inc. 2014, 2-28. Part 1, Section 4.
5. Marahatta R, Bhattarai S. Value of Conventional cervical cytology as a screening test for cervical cancer. Orig Artic Nepal Med Coll J. 2013; 15(2):223-7.
6. Alakananada, Sarma U, Biswas I. Histopathological Correlation with Cervical Cytology. IOSR J Dent Med Sci. 2016; 15(11):2279-861.
7. Patel CB, Shah PC, Bhagat VM. A role of cervical Pap smear as a screening tool in diagnosis of lesions of cervix - a one-year study. Int J Med Sci Public Heal. 2016; 5(9):1841-5.
8. Tailor HJ, Patel PR, Bhagat VM. Study of cervical pap smears in a tertiary care hospital of south Gujarat, India. Int J Res Med Sci. 2016; 44(1):286-8.
9. Thomas EE, Kumaran JA. Profile of PAP smears done in a tertiary centre in North Kerala. Int J Community Med Public Health. 2018; 5:1974-9.
10. Nair G, Shamsuddin F, Narayanan T, Balan P. Cytopathological pattern of cervical pap smears-a study among population of North Malabar in Kerala. Indian Journal of Pathology and Oncology. 2016; 3(4):552-7.
11. Beevi NA, Sreenivas S. Awareness of cervical cancer and pap smear and it's utilization among health care workers in medical college, Kozhikode. Journal of evidence based medicine and health care [Internet]. 2014; 1:12-7.