

## A Histopathological Study of Cervix biopsy in VIA/VILI Positive cases.



### Pathology

**KEYWORDS:** Chronic cervicitis, CIN, Cervical cancer, VIA/VILI

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### ABSTRACT

Cervical lesions are potential causes of morbidity and mortality in women. This study is aimed at analysing the nature of lesion in cervical biopsies performed in VIA/VILI positive cases. This study was conducted in the department of Pathology, Government Mohan Kumaramangalam Medical College, Salem, Tamil Nadu over a period of three years from January 2013 to December 2015. Those patients who showed VIA/VILI positivity were subjected to cervical biopsy and histopathological analysis was done. **Summary:** In this study out of 2106 women screened, 547 women showed positive results with VIA/VILI. The most common histological pattern among the cervical biopsies was chronic nonspecific cervicitis (44.7%) followed by CIN I. Screening tests are mandatory to detect not only the pre-malignant lesions and malignant lesions at an early stage but also to identify the non neoplastic lesions, as these lesions are a major source of morbidity in women.

### Introduction

Cervical lesions are the most frequently encountered gynaecological problem in women. Cervical cancer is the second most common cancer in the world next to breast cancer in women [1], [2]. In Tamil-Nadu, the incidence of cervical cancer is more compared to breast cancer. It accounts for 23% of all cancer cases in women [3]. It is the third largest cause of cancer mortality in India accounting for about 10% of all cancer related deaths [4]. Rural women are at higher risk than urban counter parts [5]. Non-neoplastic lesions of cervix are also potential causes of morbidity in women worldwide.

Chronic cervicitis is one of the causes for chronic pelvic inflammatory diseases (PID). The racemose glands present in cervix provide a favourable environment for lodging of micro-organisms. Absence of cyclical shedding of the cervical epithelium helps in persistence of infection leading to chronic PID [6]. Hence it is essential to identify the non-neoplastic lesions at an early stage. By analysing the pattern of these lesions effective measures can be taken to reduce the associated morbidities.

The period of survival of the cancer patient depends on the stage of cancer at the time of diagnosis. Therefore screening programmes play an important role in the early detection of cancer cervix and reducing the associated morbidities and mortalities.

Various screening tools are available like Pap smears, visual inspection of cervix with application of acetic acid (VIA) or Lugol's iodine (VILI) and Human Papilloma Virus (HPV) testing. The high cost of HPV testing is a constraint to be used as a screening method in developing countries like India. VIA/VILI are simple tests that are carried out in health centres as a screening tool.

Govt. of Tamil Nadu in South India implemented cancer screening programme at primary and secondary level public sector health facilities as a pilot project since February 2007 [7]. This is implemented as a part of the Non Communicable Diseases control programme. The screening programme uses visual inspection methods followed by colposcopy directed biopsy. However, documentation of histological patterns of cervical biopsies in the published literature is limited. We present here histopathological patterns of cervical biopsies in those women who attended the Non Communicable Diseases Out Patient Department and reported positivity with VIA/VILI.

### Aim:

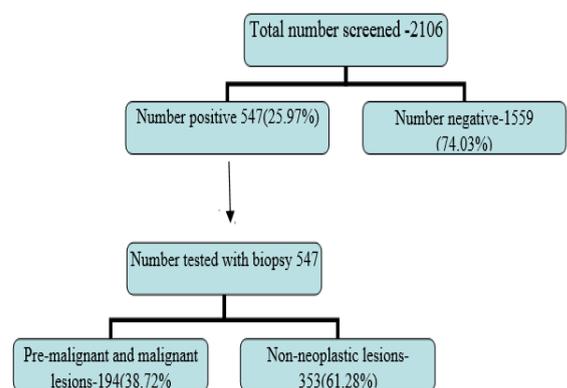
To analyse the various histopathological patterns of cervix biopsy in women reporting positivity in visual inspection methods in a tertiary care centre, Salem, Tamil Nadu, South India.

### Materials and Methods

This study was conducted in the Department of Pathology, Government Mohan Kumaramangalam Medical College, Salem, Tamilnadu over a period of three years from January 2013 to December 2015. The study population included women aged 20-80 years attending the NCD (Non Communicable disease) Out Patient clinic in Government Mohan Kumaramangalam Medical College, Salem, Tamilnadu and neighbouring Primary Health centres and Government Hospitals. These women were subjected to testing of cervix by visual inspection methods. Women who showed positivity on application of acetic acid and Lugol's iodine underwent cervical biopsy on the same day. The cervical biopsies were sent in 10% formalin to the Department of Pathology, where they were processed and embedded in paraffin blocks. 5 $\mu$  thick sections were cut, stained with Haematoxylin & Eosin and examined.

### Results:

During the study period, 2106 women were screened by visual inspection methods. Of these, 547 (25.97%) women were positive for VIA/VILI.



**Figure.1**

Non – neoplastic lesions form the major bulk constituting 61.3%, followed by Pre-malignant lesions - 28.7% and malignant lesions, which accounted for 10 % of the cases.

The various histological patterns observed were as follows.

**Table 1:** Histological patterns of cervix biopsy in VIA/VILI positive cases, 2013-15

S.No	Histological patterns	Number of Cases	Percentage
1	Chronic nonspecific cervicitis	224	44.7%
2	Ulcer	05	0.9%
3	Epithelial Hyperplasia	07	1.4%
4	Chronic Papillary endocervicitis	58	11.6%
5	Granulomatous cervicitis	01	0.2%
6	Endocervical polyp	01	0.2%
7	Endocervical glandular	01	0.2%
8	Squamous Metaplasia	10	2.0%
9	CIN I	69	13.8%
10	CIN II	34	6.8%
11	CIN III	41	8.2%
12	Squamous Cell carcinoma	48	9.6%
13	Adenocarcinoma	02	0.4%

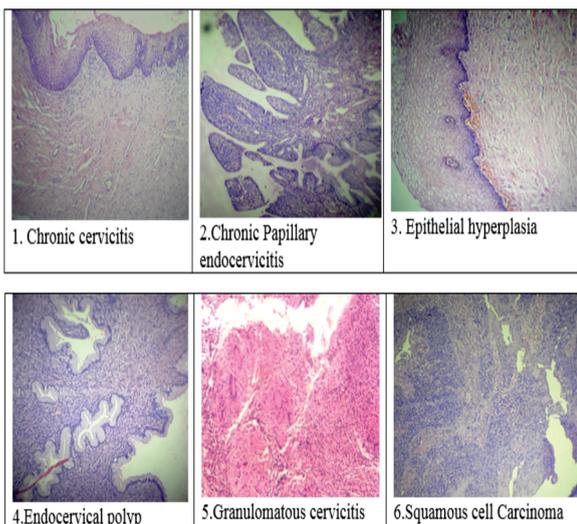
Among the 547 cases of cervical biopsies examined, 46 cases of inadequate samples (stroma only) were excluded from the analysis. The women screened were in the age group ranging from 20 years to 80 years.

Most of the non-neoplastic lesions occurred in the age group of 30-39 years (50.8%) followed by 40-49 years (28.7%)

The pre-malignant lesions also occurred predominantly in the age group of 30-39 years (51.4%), followed by 40-49 years (23.7%). Considering malignancy, most of the affected people were in the age group of 60-69 years (34%).

Major histological pattern observed during the study was chronic non specific cervicitis (44.7%), followed by Cervical Intraepithelial Neoplasia (CIN I) (13.8%) and chronic papillary endocervicitis (11.6%). One case each of granulomatous cervicitis, endocervical polyp and endocervical glandular hyperplasia were noted.

## FIG.2.HISTOPATHOLOGICAL PATTERNS OF CERVICAL BIOPSIES



## Discussion:

We analyzed the data from a visual inspection screening method followed by histopathological testing of those positive in screening test at a tertiary care facility in South India. The key histopathological pattern of majority was chronic non-specific cervicitis, the precancerous and cancerous lesions were detected in significant proportion.

Chronic non specific cervicitis was the most common pattern observed in our study constituting 44.7%. Our study coincides with a study in Delta state university in Nigeria, where chronic cervicitis constituted 43.5% [8]. Also in a study by Krishna Dubey et al, the percentage of chronic cervicitis was 49.5% [9]. In studies by other researchers, chronic cervicitis accounted for 80, 82 and 85.6% respectively [6], [10], [11].

We observed ten cases of Squamous metaplasia. Identifying this condition is important as it should not be over diagnosed as neoplasm.

In addition we had a case of granulomatous cervicitis similar to a study by Deepa Hatwal et al, in Uttarakhnad [11]. The most common cause for Granuloma in our setup is tuberculosis. This coincides with the worldwide incidence of cervical Tuberculosis 0.1%-0.6% [12].

Non neoplastic conditions of the cervix are a major concern of health in women. Non neoplastic lesions of cervix are categorised as inflammatory lesions and tumor like lesions. According to WHO, tumor like lesions include nabothian cysts, endocervical polyp, endocervical hyperplasia and endometriosis [13]. Tumor like lesions may be mistaken for neoplasms.

Chronic cervicitis is an extremely common gynaecological condition. Cervicitis has variable etiology, may be either infectious or non infectious. Non infectious cervicitis is due to chemical irritation by douching or local trauma by foreign bodies or surgical instrumentation. Infectious cervicitis plays a central role in the pathogenesis of Pelvic Inflammatory Disease and pregnancy complications [14]. It may also play a key role in the initiation or promotion of cervical neoplasia [15]. The term "chronic" in chronic cervicitis represents mostly the duration and not the nature of inflammatory cells.

Pre-malignant lesions accounted for 28.7% (144 cases) of lesions. The pre-malignant lesions detected were CIN I – 69 cases (13.8%), CIN II – 34 cases (6.8%) and CIN III – 41 cases (8.2%). In a study by P. Gosh et al, at New Delhi 23.9% cases had CIN I, 8.6% had CIN II and 2.0% had CIN III [16].

Malignant lesions constituted 10% (50 cases) of total cases, of which 96% (48 cases) were squamous cell carcinoma and 4% (2 cases) were adenocarcinoma.

Cervical Cancer is the most common gynaecological malignancy in the developing countries. In India nearly 75 thousand women die due to this condition every year [17]. Carcinoma cervix progresses from pre malignant conditions. Therefore it is essential to diagnose the disease at an early stage. Also it is mandatory to identify the non neoplastic lesions of the cervix to reduce the morbidities in women.

## Conclusion and recommendations

Cervix is a potential site for neoplastic and non-neoplastic lesions. Non neoplastic lesions of the cervix form a major bulk of cervical pathology. Screening tests are mandatory to detect not only the pre malignant lesions and malignant lesions at an early stage but also to identify these non neoplastic lesions. These cervical lesions are a major source of morbidity in women causing loss of work hours, thus imposing a financial burden in low socio economic countries like India. VIA/VILI is a simple technique which can be carried out in low resource setting.

In a screening cum histopathological testing of out-patients in a

tertiary care facility, we identified that majority had chronic non-specific cervicitis. We recommend that biopsy is mandatory to establish the correct diagnosis and plan the treatment.

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