

# Incidental Finding of Cervical Dysplasia in Hysterectomy Cases Done for Other Causes

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## Abstract

**Introduction:** Cervical cancer is one of the leading causes of death in women. Squamous intraepithelial lesion (SIL) (cervical dysplasia) is usually diagnosed by cancer screening techniques. By keeping this in mind, we want to evaluate silent cells which have not been suspected or diagnosed previously, and the patient had hysterectomy for other cases. These findings will give us idea about the incidence of SIL in our population.

**Materials and Methods:** A retrospective data analysis of hysterectomy cases which were done for other benign indications. Women between 30 and 70 years age group are included in this study. The details were taken from the databases maintained by the Pathology Department, KAPV Government Medical College. Institutional board approval was obtained.

**Results:** During the study period, 100 hysterectomy cases in the age group of 30-70 years which were performed for benign causes were included. The most common indications for hysterectomy were leiomyoma and abnormal uterine bleeding. Among 100 cases, 14 cases were identified with SIL. All lesions are defined as squamous alterations in the cervical transformation zone that are induced by human papillomavirus infection.

**Conclusion:** Importance of screening procedures such as Papanicolaou smears and colposcopy not only for regular screening of individuals between age 30 and 70 years, these procedures are also to be followed before any hysterectomy procedures for other reasons. This one is important if cervical intraepithelial neoplasia III or high-grade squamous intraepithelial neoplasia or microinvasive disease identified to modify the surgical procedures. This will avoid further surgeries and complications due to metastasis or stump recurrence.

**Key words:** Cervical dysplasia, Cervical intraepithelial lesion, Papanicolaou smear

## INTRODUCTION

Invasive cervical cancers are usually preceded by a long phase of preinvasive disease. This is characterized by a spectrum of events progressing from cellular atypia to various grades of dysplasia or cervical intraepithelial neoplasia (CIN) before progression to invasive carcinoma.

Early diagnosis of this preinvasive dysplasia can save the life of the patient. Finding out the actual incidence of cervical dysplasia helps to improve the screening techniques.

Squamous cell carcinoma has been reduced steadily owing to effective cytological detection and eradication of its precursors.

## MATERIALS AND METHODS

We performed a retrospective data analysis of hysterectomy cases which were done for other benign indications. Women between 30 and 70 years age group are included in this study. The details were taken from the databases maintained by the Pathology Department, KAPV Government Medical College. Institutional board approval was obtained.

All cases of hysterectomy performed for benign indication in the database from January 1, 2015, to December 10, 2015, were included in this analysis. Pre-operative surgical indications for hysterectomy were taken from the medical

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www.ijss-sn.com

Month of Submission : 05-2016  
Month of Peer Review : 06-2016  
Month of Acceptance : 07-2016  
Month of Publishing : 07-2016

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record. The diagnosis of cervical dysplasia (squamous intraepithelial lesion [SIL]) and its categories were established based on the final pathology report abstracted from the clinical record. The previous HPE slides were also reviewed.

The criteria for the diagnosis of cervical dysplasia is based on guidelines established by the WHO.

Carcinoma cervix and SIL can be discovered on routine Papanicolaou (Pap) smear in an asymptomatic woman. However, the disadvantages are the mucosal surface may be covered by normal epithelium, and the underlying malignant cells may escape detection by cytological smear.

It was observed that some cases of SILs regressed, some persisted and others progressed to carcinoma *in situ* (CIS).

A direct correlation with progression and histological grade was observed. These observations held to the concept of a single, continuous disease process by which normal epithelium evolves into epithelial precursor lesions and to invasive cancer.

We conducted a data analysis of cervical dysplasia in hysterectomy cases which were done for other benign indications for a period of 1-year January 1, 2015, to December 31, 2015. Women in 30-70 years were included in this study. In this study, 100 hysterectomy cases in the age group of 30-70 years which were performed for benign causes were included. Among 100 cases, 14 cases were identified with SILs. 86 patients had normal cervical epithelium. Among SILs, the number of patients with CIN I is 11, CIN II is 2, and CIN III is 1. Incidence of CIN I is more 78%, whereas CIN II is 14.5% and CIN III 7.5%.

## RESULTS

During the study period, 100 hysterectomy cases in the age group of 30-70 years which were performed for benign causes were included. The most common indications for hysterectomy were leiomyoma and abnormal uterine bleeding. Among 100 cases, 14 cases were identified with SILs.

All lesions are defined as squamous alterations in the cervical transformation zone that are induced by human papillomavirus (HPV) infection.

The features of the low-grade squamous intraepithelial lesion (LSIL) include the presence of conspicuous superficial cell atypia with binucleation, 2-fold nuclear

enlargement, variable nuclear chromatin, low N/C ratio with well-preserved polarity.

There are categories of LSIL that includes flat mature LSIL or flat Condyloma, mature exophytic LSIL or exophytic Condyloma, extensive exophytic LSIL or giant Condyloma, immature exophytic LSIL or immature Condyloma and immature flat metaplastic LSIL.

High-grade SILs (HSILs) exhibit atypia in all layers of epithelium. The features include less maturation, higher nuclear density, orderly transition from the immature to mature epithelial layers, nucleomegaly, hyperchromasia in the lower epithelial layers, loss of polarity, increased mitotic index, and abnormal mitotic Figures 1 and 2.<sup>5</sup>

## DISCUSSION

We analyzed the data obtained from a sample of KAPV Government Medical College, Pathology Department. The incidence of SILs among 100 hysterectomy cases which were done for some other benign indications was

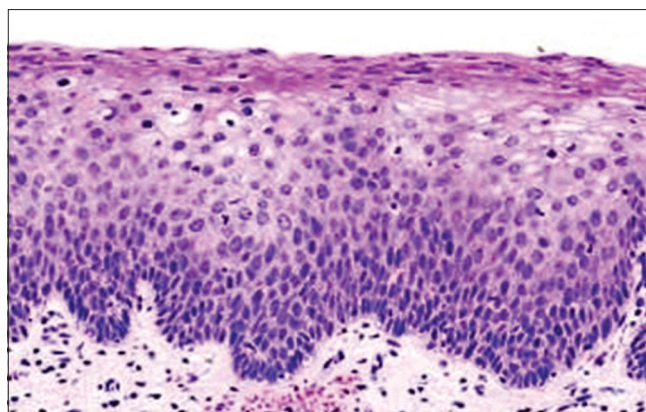


Figure 1: Cervical intraepithelial neoplasia I

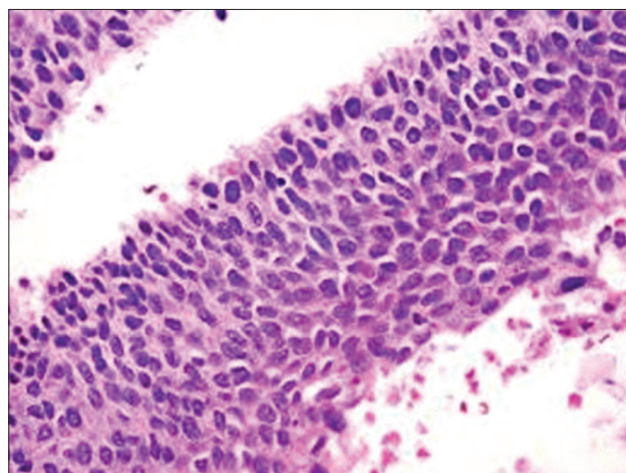


Figure 2: Cervical intraepithelial neoplasia III

14%. Among SILs, the number of patients with CIN I is 11, CIN II is 1, and CIN III is 1. Incidence of CIN I is more (85%), whereas CIN II is 7.5% and CIN III 7.5% (Table 1).

Cervical cancer is one of the leading causes of death in women. Significant public awareness must be created to enhance the early detection of cervical cancer. The mortality ratio of cervical cancer can be reduced by early screening techniques. The risk of cervical cancer increases with age.<sup>1,2</sup>

The replacement of areas of physiological columnar epithelium with mature stratified squamous epithelium beginning soon after birth. Before pubarche, the vaginal pH is neutral. After pubarche and before menarche, when plasma concentrations of estrogen rise and the vaginal and squamous cervical epithelia become glycogenated, lactobacilli are present in the normal flora and glycogenolysis causes the vagina to become acidic. The effect of this on columnar epithelium accustomed to conditions in the alkaline endocervical canal is thought to stimulate squamous metaplasia. Change of shape of the cervix, with exposure of the endocervical epithelium to the vaginal milieu, occurs on many occasions during adolescent and adult life and squamous metaplasia is, therefore, a recurring event.<sup>3</sup>

In early metaplasia, the simple columnar epithelium is retained above the proliferative squamous cells, but eventually, it is shed.

The histopathologist looking at a section of a cervical biopsy is faced with the task of deciding, whether a particular epithelium shows the changes of CIN and, if so, what degree of abnormality is present. Both these decisions may be fraught with difficulty. A number of benign physiological epithelial changes may be mistaken for CIN, and it is important that these are recognized for what they are. CIN is graded because of the belief that the degree of histological abnormality relates to the prognosis and so can be used as a guide for the management of the patient

Many of cervical dysplasia are undiagnosed, and the actual incidence is also unknown. The incidence of actual cases of cervical dysplasia is actually less than the original incidence.

Cervical precancerous conditions were reported using the categories of dysplasia and CIS, and still they are used in all countries. Many numbers of follow-up studied were conducted in women with such precancerous conditions.

The main observations are some cases of dysplasia regressed, some persisted, and other progressed to CIS. These observations led to the concept of a disease process by which normal epithelium evolves into epithelial precursor lesions and on to invasive cancer.<sup>4</sup>

CIN was divided into Grades 1, 2, and 3. CIN I - corresponds to mild dysplasia, CIN II - moderates dysplasia. CIN III - severe dysplasia and CIS. Invasive cervical cancers are usually preceded by a long phase of preinvasive disease. This is characterized microscopically as a spectrum of events progressing from cellular atypia to various grades of dysplasia or CIN before progression to invasive carcinoma. CIN may be suspected through cytological examination using the Pap technique or through colposcopic examination. Final diagnosis of CIN is established by the histopathological examination of a cervical punch biopsy or excision specimen. A judgment of whether or not a cervical tissue specimen reveals CIN, and to what degree, is dependent on the histological features concerned with differentiation, maturation and stratification of cells, and nuclear abnormalities. The proportion of the thickness of the epithelium showing mature and differentiated cells is used for grading CIN progression rates to invasive cancer. The diagnosis of HSIL on a Pap test means the presence of precancerous cells, not cancer. Although it is the most preventable type of cancer, each year cervical cancer kills about 4,000 women in the U.S. and about 300,000 women worldwide. Cervical cancer mortality rates are reduced now thanks to increased screening and early detection with the Pap test.<sup>5</sup>

In our study, 21% of CIN I diagnosis occur in women ages 30-50, and about 14% occur in women 41-50, 35% occurs in women 51-60, and 14% occurs in women 61-70 years of age. The median age of diagnosis is 48 years. About 7% of women had CIN II between the ages of 51-60. About 7% of women had CIN III between the ages of 61-70 (Table 2).

**Table 1: Incidence of CIN**

CIN I	CIN II	CIN III
12 (85%)	1 (7.5%)	1 (7.5%)

CIN: Cervical intraepithelial neoplasia

**Table 2: Agewise incidence of CIN**

Age	CIN I	CIN II	CIN III
30-40	3	-	-
41-50	2	1	-
51-60	5	-	1
61-70	2	-	-

CIN: Cervical intraepithelial neoplasia



Cervical cancer is very rare in women younger than age 20. However, many young women become infected with HPV, which then can increase their risk of getting cervical cancer in the future. Young women with early abnormal changes who do not have regular examinations are at high risk for developing cervical cancer by their age 40 and for invasive cancer by age 50.

The best way to prevent cervical cancer is to avoid getting infected with HPV. CIN usually occurs after a woman becomes infected with the HPV. This is a virus that is spread through sexual contact. Some strains, such as HPV-16 and HPV-18, are more likely to infect the reproductive tract in women and cause CIN. A vaccine can protect against the major cancer-causing HPV strains in girls and young women who have not yet been exposed to the virus. Screening for cervical cancer includes regular Pap tests that remain the most effective way of identifying cervical cancer while it is in its earliest precancerous stages and preventing the development of invasive cervical cancer. About half of cervical cancer cases are diagnosed when the cancer is confined to the cervix. About 30-40% of cases are diagnosed after cancer has spread to adjacent areas or lymph nodes and about 10-20% of cases are diagnosed when cancer has already spread to distant regions. Low-grade cervical dysplasia (LGSIL and/or CIN1) often spontaneously resolves without treatment, but follow-up screening is recommended. Untreated high-grade cervical dysplasia may progress to cervical cancer over time. Surgical treatment of cervical dysplasia cures most women.<sup>5</sup>

Women who are sexually active are sometimes infected with HPV. About 50% of the HPV infections occur in women between the ages of 15 and 25. Mostly, the infections go away without causing any problems. According to Italian Group for Cervical Cancer Screening survey 2.4% of Pap tests were positive for cervical dysplasia. The problem with cervical screening is poor follow-up with abnormal pap smears. The problem with cervical screening is poor follow-up with abnormal Pap smears. The lack of symptoms, infrequent screening may lead the cervical dysplasia to develop into cervical cancer.<sup>6</sup> If early detected cervical dysplasia is treated easily. If it progresses to cervical cancer, the treatment will be a prolonged one.

The well-known classification system has incorporated the finding of HPV as a preneoplastic lesion HPV lesions are now grouped with CIN I (mild dysplasia) as a single category, low-grade SIL (low-grade SIL). High-grade lesions are called high-grade SIL and include lesions previously known as CIN II and CIN III (moderate dysplasia, severe dysplasia, and CIS).

So, this system divides all lesions into two functional groups. CIN is characterized by a gradual progression of continuous derangements eventually culminating in a tumor capable of invasion.<sup>7-10</sup> Detection of cervical epithelial cell abnormality helps predict the prognosis and can be used as a guide to manage the patient. The hallmarks of CIN are its defining nuclear abnormalities. Nuclei are enlarged, pleomorphic, and with the wrinkled nuclear membrane. There is hyperchromasia and irregularly clumped chromatin. Nucleoli are rare. The differentiation is reduced when the nuclear abnormality is increased. Nuclear polarity will be altered. Mitotic activity is increased there will be increase in the height of the epithelium. Abnormal configurations present. The definition of an *in situ* carcinoma requires that the surface epithelium lacks all differentiation. So, that immature and undifferentiated cells occupy the entire thickness of the epithelium.

## CONCLUSION

About 14 cases being discovered incidentally in hysterectomy specimens done for other reasons may also be taken as the incidence of SILs in our population in silent way. Hence, we here stress the importance of screening procedures such as Pap smears and colposcopy not only for regular screening of individuals between age 30-70 years, these procedures are also to be followed before any hysterectomy procedures for other reasons. This one is important if CIN III or high-grade squamous intraepithelial neoplasia or microinvasive disease identified to modify the surgical procedures. This will avoid further surgeries and complications due to metastasis or stump recurrence.

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**How to cite this article:** Visalakshi S, Balakrishnan K, Maheswari KU, Hemalatha G. Incidental Finding of Cervical Dysplasia in Hysterectomy Cases Done for Other Causes. *Int J Sci Stud* 2016;4(4):157-161.

**Source of Support:** Nil, **Conflict of Interest:** None declared.