

# Correlation of Colposcopy with Cervical Biopsy Findings in Various Lesions of Cervix

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**Abstract:** Worldwide cervical cancer is the second most common cancer, cancer of the breast occupying the first position. The aim was to study the lesions of the cervix by colposcopy and compare it with biopsy findings. A retrospective and prospective study was carried out from 2013 to 2017 including 42 cases. Patients with cervical disease symptoms and with availability of both colposcopy and biopsy findings were included. For retrospective evaluation relevant material was collected. For prospective evaluation colposcopy and cervical biopsies were performed. Out of 42 cases, 33 cases correlated while 9 cases did not correlate. Colposcopy is a reliable method of detecting lesions of cervix but histopathology is considered as gold standard.

**Keywords:** Cervical cancer, Colposcopy, Cervical Biopsy, Squamous cell carcinoma

## 1. Introduction

Worldwide cervical cancer is second most common cancer, cancer of breast occupying the first position. Cervical carcinoma comprises about 90% of all genital malignancies in the developing countries. Colposcopy is a clinical method which detects the cervical intraepithelial neoplasia (CIN) as well as cervical carcinoma. Colposcope is a binocular microscope used for direct visualization of cervix. It complements cytology and when combined with selective biopsy of the worst affected area, it allows a high level of diagnostic accuracy. [1]

Several types of cervical biopsies can be used to diagnose pre-cancerous and cancerous lesions of the cervix. It can be the only treatment needed if the biopsy can completely remove all of the abnormal tissue. Different types of cervical biopsies include colposcopic biopsy, endo-cervical curettage (endo-cervical scraping), cone biopsy (conization) and loop electrosurgical excision procedure (LEEP). [2]

The aim of the study was to study the lesions of the cervix by colposcopy and compare it with biopsy findings.

## 2. Materials and Methods

A retrospective and prospective study was carried out from 2013 to 2017 including a total of 42 cases. Patients with cervical disease symptoms and with availability of both colposcopy and biopsy findings were included. For retrospective evaluation relevant material was collected. For prospective evaluation colposcopy and cervical biopsies were performed. Colposcopy was performed using a colposcope. The cervix was examined for any abnormality or presence of growth. The findings of the colposcopy were noted and correlated with the findings of histopathological examination. Representative areas of cervix were sampled by cervical biopsy. Biopsy specimens were kept in 10% buffered formalin for 24 hours for fixation. Biopsy measurement and number of bits were noted. The entire specimen was processed. Thin sections of 4 micron thickness were prepared. They were stained routinely with haematoxylin and

eosin. Histopathological examination was performed. Analysis was carried out using SPSS (Statistical Package for Social Studies) for Windows version 20.2 and online Graph Pad software (Prism 5 for Windows) version 5.01. Categorical data were presented as percentages (%). Sensitivity, specificity, positive predictive value and negative predictive value were calculated to analyze the correlation between colposcopy and histopathology.

## 3. Results and Discussion

A total of 42 cases were included in the present study. The age group of the patients varied from 21-80 years. The most common age group with cervical lesions was 5th decade. Colposcopy showed normal study in 30 (71.43%) out of 42 cases. 8 cases were reported as CIN I (19.05%) by colposcopy. 3 cases were reported as CIN II (7.14%) by colposcopy. 1 case was reported as carcinoma (2.38%) by colposcopy. No case was reported as CIN III by colposcopy.

**Table 1:** Spectrum of findings of colposcopic examination

Colposcopic Findings	Distribution (N=42)	
	Cases (N)	Percentage (%)
Normal study	30	71.43
CIN I	08	19.05
CIN II	03	7.14
CIN III	-	-
Carcinoma	01	2.38
Total	42	100

The most common cervical lesion on histopathological examination was cervicitis (83.34%) followed by CIN II (9.52%). Malignancy cases included one cases of moderately differentiated squamous cell carcinoma.

**Table 2:** Distribution of cervical lesions according to histopathological examination

Diagnosis	Distribution (N=42)	
	Cases (N)	Percentage (%)
Cervicitis	35	83.34
CIN I	01	2.38
CIN II	04	9.52
CIN III	01	2.38
Carcinoma	01	2.38
Total	42	100

Out of total 42 cases, 33 (78.57%) colposcopy cases correlated with histopathological findings while 9 (21.43%) colposcopy cases did not correlate with histopathological findings.

**Table 3:** Correlation of histopathological and colposcopic diagnoses

Colpo \ Histo	Normal (N)	CIN I (N)	CIN II (N)	CIN III (N)	Carcinoma (N)	Total (N)
Cervicitis (N)	29	05	01	-	-	35
CIN I (N)	-	01	-	-	-	01
CIN II (N)	-	02	02	-	-	04
CIN III (N)	01	-	-	-	-	01
SCC (N)	-	-	-	-	01	01
Total	30	08	03	-	01	42

The sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) was 85.71%, 82.86%, 50.0% and 96.67% respectively.

The most common finding on colposcopic examination in the present study was normal study (71.43%) which was also seen as the most common finding in a study conducted by Vidyadhar et al.[3] Second most common finding on colposcopic examination in the present study was CIN I which was which was also seen as the second most common finding in a study conducted by Vidyadhar et al.[3]

Study conducted by Parvin et al[4] showed variation from the present study. They had CIN I as the most common colposcopic diagnosis followed by CIN II. This may be attributed to the geographical variation of distribution of cases in their study.

The present study showed a good sensitivity (85.71%), specificity (82.86%) and NPV (96.67%) of colposcopy with regards to histopathology. The sensitivity, PPV and NPV of colposcopy in the present study was comparable to the values obtained in the other studies.

The specificity (82.86%) of the colposcopy in the present study was comparable to majority of the studies except for one study conducted by Parvin MI et al[4] in which specificity was lower (66.67%). The variability between sensitivity as well as specificity may be seen amongst various studies. This can be explained on the basis of the performance and accuracy of colposcopy depends largely on the training, experience and skills of the colposcopist. The training, experience and skills of pathologist in reporting also play a role.

Interestingly, PPV was low in this study. However it was comparable with the PPV findings of the other studies as well. So this supports our finding that colposcopy tends to over-diagnose the malignant cases as compared to histopathology.

#### 4. Conclusion

All the abnormal smears should be followed up by colposcopy and histopathological examination. Although colposcopy is very reliable method for detecting the lesions of cervix, histopathology remains the gold standard.

#### 5. Future scope

Sample size should be increased. Multicentric study if possible should be conducted. The strength of the study lies in the fact that we could correlate the findings of colposcopy and histopathology to corroborate the diagnoses to give quality treatment to the patients. Small sample size was one of the limitations of the present study. Also it was a single centre study.

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