

THE ROLE OF COLPOSCOPY IN THE EVALUATION OF UNHEALTHY CERVIX

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Introduction

The term unhealthy cervix encompasses a wide spectrum of conditions. The naked eye evaluation of the unhealthy cervix is deceptive and it is easy to dispose of the intra-epithelial cancer precursors as simple causes of erosion of inflammation. By the turn of the century, gynaecologists shifted their focus of interest from the gross and histologic appearance of advanced disease to the less well defined subject of pre-clinical carcinoma of the cervix. Hinselman in 1925 made a significant contribution in this regard. He devised the colposcope for inspection of the cervix with sharply focussed light and binocular optical magnification, thus pioneering a new field of clinical investigation, colposcopy. The great value of colposcopy lies in its ability to pinpoint the most suspicious area on the cervix for the target biopsy without which a random biopsy may well miss the very spot.

Aim of the study

The aims of the present study are as follows:

(i) Correlation of the colposcopic ap-

pearances with the histology of the colposcopy—directed biopsy.

(ii) Detection of preclinical malignant lesions of cervix.

(iii) Institution of treatment, appropriate for the lesion.

Material and Methods

This study was undertaken in the department of Obstetrics & Gynaecology, V.S.S. Medical College Hospital, Burla, from November 1977 to December 1979. One hundred and sixty-seven patients have been studied with Colposcope and the details of the two study groups have been illustrated in Table I.

TABLE I
Cases Studied

Total No. of Cases studied by Colposcope	167
Cases subjected to Colposcopy-directed biopsy	164
Antenatal cases under follow-up with Colposcopy (without biopsy)	3

In each case, the cervix was exposed by a Cusco's speculum, treated with 3% acetic acid for 3 minutes and studied by the Colposcope using an incandescent lamp and green filter. The impression of the colposcopic appearance was based on different criteria as illustrated in Table II.

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TABLE II
Basis of Colposcopic Grading

Colposcopy Grading	Surface Contour	Colour	Vascular pattern
Negative (Normal erosion or Inflammation)	Flat surface (Meta- plastic Sq. epithelium) (Colum epith)	Pink or Red	Regular dichotomous branching injected in inflammation
Mild Dysplasia	Same as above	Same as above or whitish	Few punctate or spiral vessels, closely spaced, regular arrange- ment
Moderate Dysplasia	Flat or slightly elevated	White epithelium	Fine punctation or mosaic Fine calibre spiral, shaped closely spaced at a regular distance
Severe Dysplasia	Elevated surface & proliferative tendency	Dense white	Coarse punctation & mosaic Atypical coarse Calibre vessels
Carcinoma in situ	Irregular, elevated	Obvious Leukoplakia	Very coarse, Irregularly arranged, Punctation, Mosaic, Atypical vessels
Overt cancer	Extremely irregular & necrotic	Leukoplakia	Bezarre vessels with very coarse calibre markedly increased intercapillary distance

The findings were recorded as per the scheme advocated by Hammond (Fig. 1).

All abnormal looking areas were biopsied. An additional endocervical curettage was obtained in those cases where the abnormal area extended deep into the endocervical canal and could not be viewed in entirety.

All the histology slides were jointly studied by the pathologists and by us. The correlation of the histology of the directed biopsies with the colposcopic appearance was studied (as illustrated in Table III). The colposcopic appearance and the

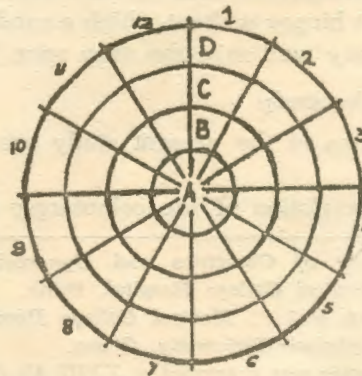


Fig. 1. HAMMOND GRAPH OF CERVIX.

TABLE III
Correlation between Colposcopic Appearance and Histology of Directed Biopsy

Colposcopic Appearance	No. of Cases	Histopathology of directed biopsy					
		Negative	Mild D	Moderate D	Severe D	Ca-in-situ	Invasive Cancer
Negative	59	41	10	8			
Mild dysplasia	67	19	45		3		
Moderate dysplasia	20	41	5	10		1	
Severe dysplasia	10	2	3	2	2	1	
Ca-in-situ	3			2		1	
Overt Ca.	5						5

histology of the biopsies were considered to be in agreement if they did not differ by more than one histologic gradation.

The patients who were treated subsequently by hysterectomy, conisation or amputation of cervix, the operative specimens were sent for further histopathological study.

Results

As illustrated in Table III, there was agreement between colposcopic diagnosis and histopathology of the directed biopsy in 141 of 164 patients (those within the heavy lines), for a correlation of 85.9%. The histology was less advanced than the colposcopic appearance in 11 patients for a false-positive rate of 6.7%. The histology was more advanced than the colposcopic diagnosis in 12 cases, accounting for a false-negative rate of 7.3%.

Table IV illustrates the analysis of the result of the study and those of other authors has been assessed in Table V.

In all cases the histologic diagnosis of the directed biopsy was taken to be the final in instituting treatment.

This study revealed 93 cases of cervical-intraepithelial-neoplasia (dyspla-

TABLE IV
Analysis of the Result of Colposcopy-histology Correlation

	Total No. of cases	Percentage
Colposcopy-histology agreement	141	85.9%
Colposcopy false-positive	11	6.7%
Colposcopy negative	12	7.3%

TABLE V
Comparison of the Result

	Colposcopy-Histology agreement	False +ve	False --ve
Staff & Mattingly, 1973	85%	—	3.3%
Cruickshank et al 1976	80%	4%	16%
Present series	85.9%	6.7%	7.3%

sia and carcinoma-in-situ) and 5 cases of early overt cancer out of 164 patients of unhealthy cervix subjected to Colposcopy-directed biopsy. Thus the detection rate was 59.7% in the series Ref. Table VI).

TABLE VI
Detection Rate of CIN and Early Overt Cancerous Lesions

Total No. of cases subjected Colposcopy-directed biopsy	Total No. of cases diagnosed as C.I.N. (Dysplasia & C.I.S.)	Cases diagnosed as overt cancer (Total No.)	Total No. of detection	Percentage (Detection rate)
164	93	5	98	59.7%

Treatment modality

The treatment of choice for negative and mild dysplasia cases was diathermy cauterisation. Moderate dysplasia cases were subjected to amputation or conisation of cervix. Some of the negative, mild and moderate dysplasia patients have undergone hysterectomy (Total abdominal or vaginal) for other associated condition like DUB., fibromyoma or prolapse uterus. Severe dysplasia patients at perimenopausal or postmenopausal age were subjected to hysterectomy and others underwent amputation or conisation of cervix. Extended hysterectomy was done in carcinoma-in-situ patients. One pregnant patient with C.I.S. is under follow-up by Colposcopy. Out of 5 invasive cancer cases, 4 were subjected to Wertheim's hysterectomy and 1 was referred for radiotherapy for her unwillingness to surgery.

Comments

We feel that the 85.9% correlation found between the colposcopic appearance of the lesion and the histology of directed biopsy is good. This is in close agreement with the observation of Staff and Mattingly (1973) and Cruickshank *et al* (1976). In our series the false-positive rate was 6.7% and false-negative rate 7.3%.

The false positive findings were due to

inflammatory changes as we think. The false negative rate was relatively more in the early days of our study and it gradually diminished with experience. However, these findings did not detract from the principal advantage of colposcopy, which is to identify the most suspicious areas on the cervix, so that they may be biopsied without being missed. We were able to detect 93 cases of C.I.N. (Cervical-intraepithelial-neoplasia) and 5 cases of overt cancer. Without colposcope these lesions could have been missed and a random biopsy would have been a gamble. With the help of clinical colposcopy the appropriate treatment was instituted without any hesitation.

Conclusion

The colposcopy has its greatest use:

- (1) in the practical evaluation and precise diagnosis of lesions of the cervix.
- (2) to pinpoint the most abnormal area which is to be biopsied.

Colposcopy is another diagnostic tool for precancerous and early cancerous lesions of cervix. Currently its place is between cytology and biopsy.

References

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