

## Role Of Colposcopy In Evaluation Of Lower Female Genital Tract In 175 Symptomatic Women.

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**OBJECTIVE** – To find out the role of colposcopy and colposcopy directed biopsy in evaluation of entire lower female genital tract in symptomatic women. **METHODS** – Colposcopy was carried out on 175 consecutive, referred patients who presented with symptoms like vaginal discharge, postcoital bleeding and post-menopausal bleeding or were found to have abnormal cervix on inspection or had a suspicious cytology. **RESULTS** – Colposcopy and colposcopy directed biopsy could pick up 18 cases of low grade and six cases of high grade squamous intra-epithelial lesion and one case each of adenocarcinoma of the cervix, squamous cell carcinoma of the cervix and squamous cell carcinoma of the vagina. Subclinical HPV infection of vulva was also detected in seven cases. **CONCLUSION** – Colposcopy is an extremely useful examination tool, in selected cases, to evaluate entire lower female genital tract and not just the uterine cervix.

**Key words** : colposcopy, cancer cervix, squamous intraepithelial lesion, vaginal carcinoma

### Introduction

Colposcopy was introduced by Hinselmann in Europe as early as 1924 as a tool to evaluate cervix. However, its use declined after evolution of cervical cytology in 1945<sup>1</sup>. It was only after 1970 that colposcopy reemerged to play a decisive role in verification of abnormal cytologies. With mounting knowledge about human papilloma virus (HPV), and its impact on epithelium of lower female genital tract as a whole and in the genesis of cancer cervix in particular, colposcopy has become an essential tool for diagnosis of HPV related lesions and is being considered an important extended gynecological examination tool in select cases<sup>2</sup>.

Abnormal cervix is a common finding on speculum examination and many cases may be wrongly interpreted as cancerous or precancerous lesions. This creates a cancer phobia in the minds of patients and treating doctors and many of them may be subjected to unnecessary 'panic' hysterectomies<sup>3</sup>. Colposcopy has proved to be an excellent method, for distinguishing a normal cervix from a cervix with high grade lesions and invasive cancer<sup>4</sup>.

The present study was undertaken to find out the role of colposcopy in detecting pathologies of the lower female genital tract in 175 consecutive symptomatic patients.

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### Material and Methods

This study was done on 175 consecutive referred patients from October 2002 to October 2003. All patients were primarily seen by gynecologists and then referred for colposcopy to us. Patients were counseled about the need and nature of the procedure, implication abnormal findings, need for biopsy and importance follow up before obtaining their consent. They were subjected to detailed history taking and a thorough physical examination. Patient characteristics such as age, parity, menstrual and contraceptive history, use of tobacco by self or by the partner, presence of STDs and co-existing medical illnesses were noted.

Colposcopic examination of vulva, cervix and vagina was carried out as per the guidelines of Apgar et al<sup>5</sup> in the following manner.

1. Vulvar examination was done with application of 5% acetic acid with 5X magnification.
2. With patient in lithotomy position, the largest size Graves speculum, which the patient could tolerate, was inserted, taking care not to injure the cervix. Cervix was examined with 12-15X magnification without application of acetic acid for presence of obvious growth, leukoplakia and abnormal vascular pattern. Vascular pattern was further evaluated using a green filter.
3. Pap smear was taken, if indicated.
4. Subsequently 3% acetic acid was applied on the cervix and any resultant change in cervical epithelium was noted.
5. In the presence of any abnormal finding on

colposcopy, a directed biopsy was taken; first from the posterior lip and then if required from the anterior lip using a punch biopsy forceps. Bleeding from the biopsy site was controlled by pressure.

6. The vagina was evaluated with 3% acetic acid while gradually withdrawing the speculum.
7. Vulvar biopsy was taken if required.
8. The findings were noted on a pre-designed sheet and a diagram was made to depict colposcopic findings and biopsy sites.

## Results

### *Patient characteristics*

All 175 patients were married parous women in the age group of 23 to 75 years (mean  $39.93 \pm 10.69$  years). Tobacco consumption in the form of gutka or gum massage was reported in 8 cases (3.5%) and 25 (14%) were exposed to passive smoking. Reasons for referral are given in Table I.

### *Colposcopy findings of vulva and vagina (Table II)*

Seven patients presenting with vulvar irritation and vaginal discharge unresponsive to antifungal, antitrichomonal, antichlamydial and corticosteroid therapy revealed subclinical HPV infection of vulva that was not visible to the naked eye. Evaluation of the vagina was difficult because of vaginal rugosities and speculum blade obscuring the lesion. A patient with squamous cell carcinoma had presented with postcoital bleeding and was evaluated and biopsied under general anesthesia. The lesion was hidden in the posterolateral fornix and turned out to be primary squamous cell carcinoma of the vagina with normal cervix as later confirmed histologically. One patient with vaginal HPV infection had similar lesion on the cervix.

### *Colposcopic findings of the cervix*

Pap smear reports were available in 96 patients, of whom 18 had suspicious cytology report and the rest had negative reports. Of these 18 patients, 15 were referred because of repeated inflammatory smears of whom 14 showed normal colposcopic findings and the remaining one was found to have trichomoniasis. Three patients were referred with report of mild dysplasia and colposcopy showed white epithelium on the cervix in all of them. They were biopsied and all of them revealed low grade squamous intraepithelial lesion (LSIL).

Colposcopic examination was considered satisfactory in 162 cases. While in 13 patients, it was unsatisfactory as squamo-columnar junction (SCJ) was not visualized. Amongst those who had unsatisfactory colposcopy, 10

were postmenopausal and three premenopausal. All of them were re-evaluated by colposcope after 3 weeks of local estrogen therapy and were subjected to Pap smear using Ayre's spatula and endocervical brush.

### *Pap smear results in unsatisfactory colposcopy (n=13) (Table III)*

Patients with koilocytosis on Pap smear also had white epithelium on ectocervix suggesting a LSIL that was later confirmed by biopsy. None of these patients warranted further evaluation by more invasive methods like conisation.

### *Results of satisfactory colposcopy (n=162) (Table IV)*

Ninety-nine patients had normal colposcopic findings while 63 had abnormal findings. All the 63 patients with abnormal colposcopic findings were subjected to directed biopsies. All biopsies were performed in the outpatient department except one vaginal biopsy which required general anesthesia as the lesion was hidden in posterolateral fornix.

### *Results of colposcopically directed biopsies of cervix, vagina and vulva*

The results of cervical biopsies are given in Table V. The colposcopically directed biopsies of vagina (n=2) revealed HPV infection in one case and squamous cell carcinoma in another case while vulvar biopsy (n=2) revealed squamous cell hyperplasia in both the patients.

## Discussion

In contrast to cytology, colposcopy has not achieved world wide acceptance as a screening modality due to inherent cost and a need for wide availability of expertise. It is most often being used to evaluate patients with abnormal cytology.

Based on a meta analysis of 84 appropriately designed and conducted studies, the Agency for Health Care Policy and Research (AHCPR) reported that conventional cytology has a specificity of 98% and sensitivity of 51%.<sup>5</sup> Inadequate sampling and sample transfer were major causes of high false negative results.

In view of poor sensitivity and lack of organized cytology screening programs in developing countries, alternative strategies like visual inspection of cervix using acetic acid for down staging of cervical cancer have evolved. Parashari et al<sup>6</sup> found that inspection of the cervix after application of 3% acetic acid and examining it with simple illuminated magnifying device, improved detection of early cancerous lesions to the extent of 95%. It also picked up pre-invasive lesions of the cervix, 58% of LSIL and 83% of high grade

Table I: Reasons for referral

Reasons	No.	%
Abnormal cervix on inspection	95	54.28
Vaginal discharge	21	12
Suspicious Pap smear	18	10.28
Vulvar irritation	12	6.85
Postcoital bleeding	13	7.43
Postmenopausal bleeding	11	6.28
Intermenstrual bleeding	5	2.85
Total	175	100

Table II: Colposcopic findings of vulva and vagina

Vulva (n=175)		Vagina(n=175)	
Findings	Patients	Findings	Patients
Normal	162	Normal	167
Subclinical HPV infection	7	Atrophic Vaginitis	5
Squamous cell hyperplasia	2	Moniliasis	1
Psoriasis	1	HPV infection	1
Herpetic ulcers	1	Squamous cell carcinoma	1
Leukoderma	2		

Table III: Pap smear results in unsatisfactory colposcopy (n =13)

Pap Smear Results	Patients
Smile changes	9
Inflammatory smear	2
Negative smear	1
Koilocytosis	1

Table IV: Results of satisfactory colposcopy (n =162)

Normal colposcopic appearance (n =99)	No. of patients	Abnormal colposcopic appearance (n =63)	No. of patients
Featureless squamous epithelium and squamocolumnar junction	31	White epithelium	36
Evidence of squamous metaplasia (Nabothian follicle + gland openings)	51	Punctations	10
Ectopy	17	Mosaic	15
		Abnormal vessels	3

Table V. Colposcopically directed biopsies of the cervix (n = 63)

	Squamous Metaplasia	LSIL <sup>a</sup>	HSIL <sup>b</sup>	Adeno-carcinoma	Squamous cell carcinoma
Number of patients	37	18	6	1	1

<sup>a</sup> Low grade squamous intraepithelial lesion. Koilocytic atypia + cervical intra epithelial neoplasia (CIN-I)

<sup>b</sup> High grade squamous intraepithelial lesion. Cervical intra epithelial neoplasia -II and III (CIN-II + CIN -III)

intraepithelial lesions (HSIL), which were not picked up by the naked eye.

Our study was not a screening study but was conducted on symptomatic patients with the primary objective of evaluating the cervix, biopsying abnormal areas, and evaluating vagina and vulva as well. Colposcopic finding of low grade lesions is less precise and less reproducible as they differ from squamous metaplasia narrowly by a degree<sup>4</sup>. We found histologic diagnosis of LSIL in 18 out of 61 cases diagnosed by colposcope; colposcopy histology correlation in diagnosis of LSIL was 30%. Out of 95 cases of abnormal cervix on inspection, 60 had a red lesion on cervix. Only three had CIN I lesion confirmed by biopsy and the rest had normal columnar epithelium. Colposcopy of HSIL is more accurate and spectacular<sup>7</sup>. We picked up squamous cell carcinoma in one case and HSIL in six cases accurately by colposcopy.

Modern colposcopy is an intermediate link between cytology and histology. The drawback of colposcopy lies in possible overinterpretation, thus potentially leading to overtreatment of low grade lesions which otherwise regress in the majority (80%) with a risk of progression to invasive cancer in only 1% of cases. HPV DNA typing has emerged as a triage procedure to find out those patients with LSIL who have a high potential to progress to invasion<sup>8</sup>. Major limitation of colposcopy lies in evaluating cases with unsatisfactory colposcopy and picking up of glandular lesions. Endocervical curettage and conisation, if indicated, are helpful in cases with unsatisfactory colposcopy. Recently, new sets of colposcopic criteria have been recommended to identify glandular diseases such as location over columnar epithelium, large glands, patchy red and white coloration, and abnormal vessels<sup>9</sup>. Using these criteria we picked up one patient with adenocarcinoma who was a pre-menopausal woman presenting with vaginal discharge.

Colposcopy of vulva is an accepted procedure for evaluating patients with known or suspected vulvar pathology like HPV related lesions, many benign conditions grouped as vulvar intraepithelial neoplasia (VIN I) and invasive cancer of the vulva. We could pick up seven cases with subclinical HPV infection, two cases with squamous cell hyperplasia and one case with psoriasis.

Colposcopic examination of vagina is indicated for evaluation of abnormal cytology when cervical

colposcopy is negative. We found one case of squamous cell carcinoma of the vagina in a pre-menopausal woman who had normal cervix. The vagina looked inflamed to the naked eye. Colposcopic directed biopsy proved the diagnosis.

Colposcopy is an excellent extended gynecological examination tool, in select cases, for evaluation of the lower female genital tract as a whole and not only the cervix. Errors in its interpretation can be avoided with experience and by following a proper protocol of examination. Advantages of colposcopy weigh over its limitations.

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