

# COLOPOSCOPY AND OFFICE HYSTEROSCOPY FOR CERVICAL ASSESSMENT FOR EVALUATION OF SUSPICIOUS CERVIX

By

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## ABSTRACT

**Background:** Cervical cancer is the second most common cancer among women in developing countries. Cervical cancer is a deadly disease once it reaches the invasive stages but out of all the female genital tract cancers. It is the only preventable cancer if detected in its early stages, and the disease is almost 100% curable with accurate screening and early detection.

**Objective:** To evaluate efficacy of both office cervicospopy and colposcopy directed biopsy in evaluation of clinically suspicious cervix.

**Patients and methods:** Prospective cohort study on 200 patients with clinically suspicious cervix attending the outpatient Department of Obstetrics and Gynecology, at the Hospital of Al-Azher Assiut University. Results: Colposcopy had a sensitivity of 60% and a specificity of 91.1%. Office cervicospopy showed a sensitivity of 75% and a specificity of 89.3%.

**Conclusions:** Office cervicospopy is more sensitive than stationary colposcopy for detection of cervical lesions in cases with suspicious cervix as an example of high risk group for cervical cancer. Its small caliber allows easy, simple and fast diagnostic out-patient evaluation of the cervix.

**Keywords:** Screening of suspicious cervix, Coloposcopy and office hysteroscopy, punch biopsy, cervical histopathology.

## INTRODUCTION

Cervical cancer is one of the leading causes of cancer-related deaths in developing countries worldwide, with incidence rates varying considerably from 528 000 new cases and more than with an about the reasons for this high incidence due to lack of valuable screening curriculums and poor organized resources (Ferlay et al., 2017).

Traditional screening for cervical cancer is done with papanicolaou smear

test, colposcopic examination and colposcopic directed biopsy for histopathology. Pap smears have formed the basis of cervical cancer screening and detection programs for many years. National cytology-based screening programs have contributed substantially to the marked decline in deaths from cervical cancer in these countries (ACOG, 2016).

Cervical lesions such as ectropion, nabothian cysts, and small cervical polyps are quite benign and may need not generate concern for patient or clinician,

In some patients, the cervix may be difficult to visualize. Several useful clinical suggestions for the optimal examinations of the cervix are presented (*Casey et al., 2011*).

Colposcopy is currently used for management of abnormal pap smears, and is the second step of diagnostic approach. The assessment of women with abnormal cytology and selection of those who require further therapy or follow up depends on the colposcopic assessment of the TZ (*Quaas et al., 2011*).

Colposcopy practice includes the complete colposcopy visit from visual assessment of the cervix to biopsy sampling if indicated. Colposcopy should be viewed as a risk assessment tool that directs subsequent management with biopsies, treatment, or observation. When a lesion(s) is/are present, colposcopy-directed biopsies of 2 to 4 sites are taken to establish a histopathologic diagnosis of the most severe disease present. For low-risk women with a normal colposcopic impression, deferring biopsies may be acceptable (*Wentzensen et al., 2017*).

The endocervicopy report is based on colposcopic theoretic principles and visible lesions are classified under specific categories on the basis of their severity, according to the international federation of cervical pathology and colposcopy (*Walzer et al., 2013*).

Today, many hysteroscopic procedures can be performed in the office or outpatient setting. This is due to the feasibility of operative hysteroscopy using saline as distending medium. There is good evidence to suggest that hysteroscopy in an ambulatory setting is preferable for the patient, and that it

avoids complications, allows a quicker recovery time and lowers cost (*Centini et al., 2016*).

## PATIENTS AND METHODS

This was a prospective study included 200 Women. The study participants were recruited from Obstetrics and Gynecology outpatient clinic at the Department of Obstetrics and Gynecology of Al-Azhar University Hospital (Assiut)

The local ethics committee of Al-Azhar University Hospital (Assiut) Egypt had approved this study from November 2019 till April 2020.

### Inclusion Criteria:

#### Women in age group of 20-60 years associated with:

1. Persistent vaginal discharge.
2. Post coital bleeding.
3. Cervical hypertrophy.
4. Cervical erosion/ ulceration/ growth/ oozing surface.
5. Contact bleeding.
6. Cervix flushed with petechial spot.
7. Unexplained occasional foul smelling discharge per vagina.

### Exclusion criteria:

1. Pregnant or postpartum or post abortive patients.
2. Patient having any history of treatment for either cervical dysplasia or vulval warts.
3. Patient who had underwent to recent endometrial curettage, hysterosalpingography, cervical biopsy or hysterectomy.

4. Immunocompromised patients (HIV patient on corticosteroids).

**Patients were divided into 2 equal groups: Group A** for office hysteroscope, and **group B** for colposcopy. The details and purpose of the study were explained to participants attending the outpatient clinic and oral consents were taken. Information on socio-demographic and reproductive variables was collected during an interview using a patient sheet.

**Colposcopic examination included 5 steps:**

1. 0.9% saline technique to assess the cervical lesion and vasculature of the cervix.
2. 5% acetic acid technique to determine acetowhite-positive area.
3. Schiller's iodine technique to visualize high glycogen containing cells.
4. Endo-cervical canal assessment using (Bossman forceps or endocervical speculum)
5. Biopsy using the punch biopsy forceps. Biopsy was obtained from every abnormal colposcopic examination. Using the same instruments used for traditional hysteroscopy, an office hysteroscopy was with telescope 2.6mm, outer sheath 3.6mm, a digital end camera and high-resolution monitor, and included the following steps:

- a. 0.9% saline technique to assess the cervical lesion and vasculature of the cervix.
- b. 5% acetic acid technique to determine aceto white-positive area.
- c. Schiller's iodine technique to visualize high glycogen containing cells.
- d. Endocervical canal assessment .
- e. Biopsy using the punch biopsy forceps. Biopsy was obtained from every abnormal hysteroscopic examination for histopathological examination.

Women with positive findings after histopathological examination were advised to continue follow-up care after proper management, and they were scheduled for follow up examination.

**Statistical analysis:**

Statistical analysis was performed using Statistical package for social science (SPSS) version 25.

The following tests were used: Descriptive analysis of the results in the form of percentage distribution for qualitative data (minimum, maximum, mean and standard deviation) calculation for quantitative data.

- P value was considered significant when  $P \leq 0.05$ .

**RESULTS**

There were no statistically significant differences between the two groups regarding the use of contraceptive

methods, types of contraceptive methods, family history of cervical cancer or prior cervical lesions (**Table 1**).

**Table (1): Risk factor for pre-invasive cervical lesions of studied women**

Parameters	Groups	Group A (Cervicoscope) (N=56)		Group B (Colposcope) (N=56)		P Value
		No	%	No	%	
Use Of Contraceptive Methods						
<b>Yes</b>		37	66.1	40	71.4	0.541
<b>No</b>		19	33.9	16	28.6	
Types Of Contraceptive Methods						
<b>Cocs</b>		23	62.2	24	60.0	.0846
<b>Pops</b>		0	0	4	10.0	0.116
<b>Iud</b>		20	54.1	19	46.5	0.565
<b>Implanone</b>		4	10.8	2	5	0.419
<b>Monthly Injectable</b>		1	2.7	1	2.5	1.000
<b>Depoprovera150mg Every 3 Months</b>		6	16.2	1	2.5	0.051
Family History Of Cervical Cancer						
<b>Yes</b>		2	3.6	3	5.4	0.647
<b>No</b>		54	96.4	53	94.6	
Prior Cervical Procedure						
<b>None</b>		55	98.2	54	96.4	0.558
<b>Conization</b>		1	1.8	0	0	1.000
<b>Cauterization</b>		0	0	2	3.6	0.495

The studied women of group (A) reported more spontaneous vaginal bleeding than women of group (B)

which was statistically significant (**Table 2**).

**Table (2): Main symptoms of the studied women**

Main Complaints	Groups	Group A (Cervicoscope) (N=56)		Group B (Colposcope) (N=56)		P-Value
		NO	%	NO	%	
CONTACT BLEEDING		14	25.0	19	33.9	0.300
SPONTANEOUS VAGINAL BLEEDING		26	46.4	13	23.2	0.010
PELVIC PAIN		21	37.5	18	32.1	0.552
BACHACHE		32	57.1	35	62.5	0.563
DYSPAREUNIA		30	53.6	34	60.7	0.445
VAGINAL DISCHARGE		39	69.6	37	66.1	0.686

There were no statistically significant difference between the two groups regarding cervical ectopy, cervical ectropion, cervical mass,

nabothian cyst, cervical ulcer, hypertrophied cervix, cervical polyp, inflammatory spots and cervical warts (**Table 3**).

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**Table (3): Naked eye examination of the cervix of the studied women**

Groups Naked eye Examination of the cervix	Group A (Cervicoscope) (N=56)		Group B (Colposcope) (N=56)		P-Value
	NO	%	NO	%	
<b>Cervical ectopy</b>	43	76.8	43	76.8	1.000
<b>Cervical ectropion</b>	2	3.6	1	1.8	0.558
<b>Cervical mass</b>	2	3.6	3	5.4	0.647
<b>Napothian follicle</b>	9	16.1	10	17.9	0.801
<b>Cervical ulcer</b>	1	1.8	1	1.8	1.000
<b>Hypertrophic cervix</b>	8	14.3	4	7.1	0.222
<b>Cervical polyps</b>	8	14.3	7	12.5	0.781
<b>White spots</b>	1	1.8	1	1.8	1.000
<b>Inflammatory spots</b>	1	1.8	0	0.0	1.000
<b>Cervical warts</b>	1	1.8	1	1.8	1.000

Women of group (B) reported more painless than group (A) which was statistically significant. Women of group (A) reported more tolerable pain than group (B) which were statistically significant. There were no statistically

significant difference between the two groups regarding examination, type of abnormalities, Schiller's iodine, accessibility of endocervical and endometrial cavity (**Table 4**).

**Table (4): Office cervicoscopic and colposcopic findings in both groups**

Groups Parameters	Group A (Cervicoscope) (N=56)		Group B (Colposcope) (N=56)		P-Value
	NO	%	NO	%	
Examination					
<b>Suspicious abnormalities</b>	8	14.3	6	10.7	0.568
<b>Inflammatory</b>	48	85.7	46	82.2	0.607
<b>Unsatisfactory</b>	0	0	4	7.1	0.118
Types of suspicious abnormalities					
<b>Abnormal vasculature</b>	3	37.5	2	33.3	1.000
<b>Punctuation</b>	1	12.5	1	16.7	1.000
<b>Mosaic appearance</b>	1	12.5	1	16.7	1.000
<b>Acetoehite areas</b>	3	37.5	2	33.3	1.000
Schiller's test					
<b>Positive</b>	9	16.1	3	5.4	0.067
<b>Negative</b>	47	83.9	53	94.6	
Accessibility of endocervical and endometrial cavity					
<b>Accessible</b>	49	87.5	--	--	--
<b>Not accessible due to internal stenosis</b>	7	12.5	--	--	
Pain during procedure					
<b>Painful</b>	8	14.3	7	12.5	0.481
<b>Painless</b>	26	46.4	43	76.7	0.001
<b>Tolerable</b>	22	39.3	6	10.7	< 0.0001

There was no statistically significant difference between the two groups as regarding histopathology. Chronic nonspecific cervicitis was the

most frequent diagnosis in both groups; 69.6 % in group A and 71.4 % in group B (Table 5).

**Table (5): Histopathology of biopsy specimen of the studied Women**

Diagnosis	Group A (Cervicoscope) (N=56)		Group B (Colposcope) (N=56)		P-Value
	NO.	%	NO.	%	
Chronic heavy lymphocytic cervicitis	4	7.1	0	0.0	0.118
Chronic nonspecific cervicitis	39	69.6	40	71.4	0.836
Chronic nonspecific cervicitis with excessive mucine material	2	3.6	5	8.9	0.438
Polypoidal chronic nonspecific cervicitis	6	10.7	6	10.7	1.000
Hyperplastic endometrial tissue	1	1.8	0	0.0	1.000
Condylomaacuminata(low grade squamas intraepithelial lesion)	2	3.6	3	5.4	0.647
Invasive moderately differentiated squamous cell carcinoma	1	1.8	0	0.0	1.000
Moderately differentiated adenocarcinoma	0	0.0	1	1.8	1.000
Non-keratinized squamous cell carcinoma	0	0.0	1	1.8	1.000
Stratified squamous cervical inrta epithelial neoplasia grade II	1	1.8	0	0.0	1.000

The sensitivity of cervicoscope was higher than colposcopic which was statistically significant. There was no statistically significant difference

between them regarding specificity, + PV, -PV and diagnostic accuracy (Table 6).

**Table (6): Diagnostic efficacy of cervicoscope, colposcope.**

Groups	cervicoscope	Colposcope	P-value
sensitivity	75	60	<b>0.031 *</b>
Specivicity	90.38	94.12	<b>0.288</b>
+ pv	37.5	50	<b>0.171</b>
-pv	97.9	96	<b>0.7360</b>
Diagnostic accuracy	89.3	91.1	<b>0.412</b>

## DISCUSSION

The current study compared the diagnostic accuracy of the office hysteroscopy (cervicoscopy) and stationary colposcopy in diagnosis of cervical lesion in women presented with suspicious cervix. Two tools had been compared in this work namely office hysteroscope (cervicoscope) and stationary colposcopy and biopsy as confirmatory method for diagnosis.

The results of our study indicated that more than 60% of patient complained of vaginal discharge followed by backache in about 60% and dyspareunia in about 55% in both groups which was an agreement with *Darwish et al. (2013)*. Moreover, we reported abnormal uterine bleeding more in office cervicoscopic group (46.4% versus 23.2%) which was statistically significant which could be attributed to more use of different methods of contraceptives in this group like COCs, IUD, Deprovera and Implanon (62.6%, 54.1%, 16.2% and 10.8% versus 60%, 47.5 %, 2.5 % and 5% in both groups respectively). On unaided naked eye examination of the cervix, cervical ectopy was the commonest suspicious lesion which should not be ignored during routine speculum examination. In addition to recurrent cervicitis and postcoital bleeding, cervical ectopy is a precursor of cervical metaplasia which means change of columnar epithelium to squamous epithelium (cellular activity), with a possibility of abnormal cellular pathway to cellular dysplasia at the most dangerous part of the cervix (transformation zone).

In this study, office cervicoscopy succeeded to diagnose abnormal and inflammatory lesions in 14.3% and 85.7%

respectively with no case of unsatisfactory examination. Contrarily, stationary colposcopy was unsatisfactory in 7.1 %. This high sensitivity of office cervicoscopy can be attributed to the ability of the office telescope to freely examine the whole cervix and go inside the endocervical canal, unlike colposcopic lens which is fixed at far distance from the cervix with possibility of magnification again away from the cervix. In a previous study by *Valli et al. (2013)*, cervicoscopic examination revealed 7.8% of CIN 2-3 in LSIL patients with inadequate or negative colposcopy.

In this study, we performed cervical biopsy in all cases as histopathology was the cornerstone for diagnosing the nature of cervical lesions. It has been recommended since a long time that at colposcopy two or more biopsies should be taken (Executive Council of the society of Canadian Colposcopists (*SOGC / SCC, 2012*)).

Regarding histopathology of biopsy specimen of the studied women, we documented that chronic cervicitis was the most frequent diagnosis (91% in both group) followed by condyloma accuminata low-grade squamous intraepithelial lesion 3.6% in cervicoscopic group, and 5.4 % in colposcopic group, invasive moderately differentiated squamous cell carcinoma 1.8% only in cervicoscopic group, stratified squamous cervical intraepithelial neoplasia grade II 1.8% only in cervicoscopic group, moderately differentiated adenocarcinoma 1.8% and non-keratinized squamous cell carcinoma 1.8% only in colposcopic group, In the concordance with our study (*Dhakal et al., 2016*), documented that 78.70% had

chronic cervicitis, 8% had normal findings, 1.30 % had moderate and 6.70% had severe squamous intraepithelial lesions. In the present study, the women of cervicoscopic group had higher sensitivity than colposcopic group which was statistically significant. The significant difference between the two methods in sensitivity and the non-significant difference between the two methods in specificity, +PV, -PV, diagnostic accuracy means that cervicoscope has the same efficacy as colposcope in evaluating cervical lesions. Moreover, cervicoscope is easier, cheaper, available, safe and widely used in evaluation of endocervical canal and endometrial cavity than colposcope.

In a previous study, we found that cervicoscopy was a simple, cheap and office procedure that can be used as a quick screening tool of HPV infection in women with suspicious cervix. It has the advantage of screening of the rest of the genital tract. In the absence of laboratory HPV testing, performing cervicoscopy in conjunction with cytology screening of high risk cases were encouraged (*Darwish et al., 2013*).

### CONCLUSION

Office hysteroscopy (cervicoscope) in evaluation of cervical lesions is, simple, widely used, cheaper and can evaluate whole length of cervical canal and endometrial cavity than stationary colposcopy. Cervicoscope can be used as an alternative to colposcopy in the diagnosis of cervical lesions in suspicious cervix.

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## استخدام منظار عنق الرحم والمنظار الرحمي المكتبي في تقييم عنق الرحم المشبوه

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**خلفية البحث:** يعد سرطان عنق الرحم ثاني أكثر أنواع السرطان شيوعاً بين النساء في الدول النامية، فسرطان عنق الرحم هو مرض مميت بمجرد أن يصل إلى المراحل المتقدمة؛ ولكن من جميع السرطانات التناسلية الأنثوية، هو السرطان الوحيد الذي يمكن الوقاية منه إذا تم اكتشافه في مراحله المبكرة. ومن الممكن منع الوفيات الناجمة عن سرطان عنق الرحم من خلال برامج للفحص والأستكشاف المبكر.

**الهدف من البحث:** تقييم فاعلية كلا من المنظار الرحمي ومنظار عنق الرحم وعينة موجهة بمنظار عنق الرحم وتحليلها باثولوجيا.

**المریضات وطرق البحث:** تمت هذه الدراسة على 200 حالة من السيدات اللواتي تم تقييمهن بفحص عنق الرحم المشكوك فيه أثناء الفحص السريري اللواتي حضرن بالعيادة الخارجية لقسم النساء والتوليد بمستشفى الأزهر الجامعي فرع اسيوط.

**نتائج البحث:** تراوحت نتيجة منظار عنق الرحم عن حساسية 60%، ودقة تصل إلى 91.1%، وتراوحت نتيجة المنظار الرحمي عن حساسية 75%، ودقة تصل إلى 89.3%.

**الاستنتاج:** المنظار الرحمي أكثر حساسية ودقة وسرعه في تشخيص المرض وأكثر فاعلية في تحديد بداية الاورام عن منظار عنق الرحم.

**الكلمات الدارة:** منظار عنق الرحم – المنظار الرحمي المكتبي – عنق الرحم المشبوه .