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Original article

Office Cervicoscopy versus Colposcopy for Evaluation of Suspicious Cervix in Assiut Governorate

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ABSTRACT

Background: In developed countries, cervical cancer is the second most prevalent cancer between females. When it enters the invasive phase, but outside of all female genital tract cancers, cervical cancer is a deadly disease. If diagnosed in its early stages, it is the only preventable cancer, and the disease is almost 100% curable with accurate screening and early detection.

The aim of the work: To determine the effectiveness of both office cervicoscopy and colposcopy-directed biopsy in the assessment of clinically suspicious cervix.

Patients and Methods: A prospective randomized controlled study, held on 200 patients randomly selected used closed envelopes with clinically suspicious cervix attending the outpatient clinic of Obstetrics and Gynecology Department, Al-Azhar University Hospital [Assiut].

Results: In case of inflammatory cases, the sensitivity with the pathology results were 97.7%, and 98.1% for colposcopy and office cervicoscopy respectively and specificity were 84.3%, and 94.7% for colposcopy and office cervicoscopy respectively. In case of abnormal vasculature, the sensitivity with the pathology results were 33.3%, and 85% for colposcopy and office cervicoscopy respectively and specificity were 80%, and 94.4% for colposcopy and office cervicoscopy, respectively.

Conclusion: Colposcopy and office cervicoscopy have the same sensitivity and specificity for the detection of cervical polyps. But, in case of inflammatory and abnormal vasculature, office cervicoscopy was more sensitive with higher specificity than colposcopy more over office cervicoscopy had a great benefit in the assessment of endocervical canal and uterine cavity so, office cervicoscopy and colposcopy are complementary to each other.

Keywords: Suspicious Cervix; Colposcopy; Cervicoscopy; Punch Biopsy; Cervical Histopathology.

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* Main subject and any subcategories have been classified according to the research topic.

INTRODUCTION

Cervical cancer is the second most prevalent female cancer. The risk of women contracting cervical cancer ranges from 0.8% in developed countries to 1.5% in developing countries by the age of 65 years. Some cervical intraepithelial neoplasia [CIN] lesions progress to cervical cancer if left unnoticed. Most of them spontaneously relapse without therapy, especially CIN 1 and 2 lesions [1]. Traditional screening for cervical cancer is done with Papanicolaou smear test, colposcopic examination and colposcopic directed biopsy for histopathology. Pap smears have formed the standard basis of cervical cancer screening and detection services for many years. National cytology-based screening services have greatly led to the dramatic decrease in cervical cancer deaths in these countries [2].

Cervical Inter Epithelial Neoplasia [CIN] is not a cancer and is typically curable if accurate screening and early detection are identified in early stages. Most CIN cases either remain stable or are eliminated without intervention by the immune system of the organism. However, a small percentage of cases, usually cervical squamous cell carcinoma [SCC], progress to cervical cancer if left unnoticed [3]. Colposcopy practice involves the full colposcopy visit from visual evaluation of the cervix to biopsy sampling if indicated. Colposcopy can be used as a risk evaluation method that guides biopsies, care, or observation to subsequent management. In order to create a histopathologic diagnosis of the most serious disease present, colposcopy-directed biopsies of 2 to 4 sites are taken when a lesion[s] is/are present [4].

According to the International Federation of Cervical Pathology and Colposcopy, the endocervicopy report is based on colposcopic theoretical concepts and visible lesions are categorized under specific categories according to their severity [5]. Then, today's most hysteroscopic procedures in the office or outpatient environment can be performed. This is due to the effectiveness of using saline as a distending medium for operative hysteroscopy [6].

THE AIM OF THE WORK

The current study aimed to determine the

effectiveness of both office cervicocopy and colposcopy-directed biopsy in the assessment of clinically suspicious cervix.

PATIENTS AND METHODS

It was a prospective randomized controlled study that was conducted over a period of one year from November 2019 to November 2020. A total number of 200 patients with clinically suspicious cervix attending outpatient Clinic of Al-Azhar University Hospital [Assiut] were recruited in the study after taking written informed consent. Patients were divided randomly used a closed envelope into 2 similar groups: Group [A] for colposcopy and group [B] for office cervicocopy. Information on socio-demographic and reproductive variables were collected during an interview using a patient sheet. The study was ethically approved by the ethical committee of Al-Azhar Faculty of Medicine. Informed consent was obtained from every patient for participation in this study.

Inclusion Criteria:

Females in the age group of 20-60 years complaining from:

1. Persistent vaginal discharge
2. Post coital bleeding
3. Cervical hypertrophy
4. Cervical erosion/ ulceration/ oozing surface
5. Contact bleeding
6. Cervix flushed with petechial spot.
7. Unexplained occasional foul-smelling discharge per vagina.
8. Patients asymptomatic had an abnormal Pap smear.

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]

Colposcopic examination:

After washing the vagina and cervix, Cervix was examined under light with cotton swabs dipped by Regular Saline 0.9% to extract the discharge after that 5% acetic acid applied to ectocervix to determine the acetowhite areas and punch biopsy for any suspicious areas using the punch biopsy forceps.

Office cervicospopy:

The usage of the same equipment used for standard hysteroscopy [an office hysteroscopy with telescope 2.6mm, outer sheath 3.6mm, a digital end camera and high-resolution display]: In any irregular hysteroscopic test for histopathological examination, 0.9 percent saline application was obtained to determine the cervical lesion and vasculature of the cervix and punch biopsy for any suspicious areas using the punch biopsy forceps. Also, the endocervical canal was assessed by the office cervicoscope to determine any lesion extended to cervical canal or cases with unsatisfactory colposcopic findings. Women with positive findings after histopathological examination Follow-up treatment was recommended to proceed after careful management, and follow-up tests were planned.

Statistical analysis:

The statistical analysis was carried using the statistical package for social science [SPSS] version 25 [IBM® SPSS® Inc., Chicago, Illinois, USA]. The following measures were used: descriptive measures of the outcomes for quantitative data [mean, standard deviation, minimum, maximum] and frequency and percentage distribution for qualitative data. Sensitivity and specificity, positive and negative predictive values were calculated by equations, considering the results of the histopathology as the standard for comparison. When P value < 0.05, it was considered significant for the interpretation of results.

RESULTS

The pathology results were 97.7%, and 98.1% for colposcopy and office cervicospopy respectively and specificity were 84.3%, and 94.7% for colposcopy and office cervicospopy respectively. In case of abnormal vasculature, the sensitivity with the pathology results were 33.3%, and 85% for colposcopy and office cervicospopy respectively and specificity were 80%, and 94.4% for colposcopy and office cervicospopy, respectively [Table 1]. Table [2] shows a statistically significant difference between the two groups regarding cervical ulcer where it was significantly higher in the office cervicospopy group, than the colposcopy group [56% vs. 30.0% respectively, p< 0.01].

Regarding histopathology results, there was no significant difference between both groups [Table 3]. Regarding findings, there was a significant increase of inflammatory changes and polyps in colposcopy group than cervicospopy group [86.0%, 9.0% vs 77.0% and 5.0% respectively] and significant decrease of abnormal vasculature in colposcopy group than cervicospopy group [5.0% vs 18% respectively] [Table 4]. Regarding the management of cervical lesions, there was no significant difference between groups [Table 5].

As shown in table [6], it is clearly identified both colposcopy and office cervicospopy in case of detection of polyp have sensitivity, accuracy, positive predictive value, and negative predictive values of 100 percent when compared with the pathology results. That means both of them have 100% compatibility with the gold test which is the pathology test. In case of inflammatory cases the sensitivity with the pathology results were 97.7%, and 98.1% for colposcopy and office cervicospopy respectively and specificity were 84.3%, and 94.7% for colposcopy and office cervicospopy respectively which means the office cervicospopy have more compatibility with pathology than colposcopy. In case of abnormal vasculature, the sensitivity with the pathology results were 33.3%, and 85% for colposcopy and Office cervicospopy respectively and specificity were 80%, and 94.4% for colposcopy and office cervicospopy respectively which means the office cervicospopy have more compatibility with pathology than colposcopy

Table [1]: Presenting symptoms among studied groups

		Group [A]: Colposcopy [n=100]		Group [B]: cervicoscopy [n=100]		p. value
		n.	%	n.	%	
Vaginal discharge	Yes	55	55.0	61	61.0	0.390
	No	45	45.0	39	39.0	
Pelvic pain	Yes	30	30.0	40	40.0	0.138
	No	70	70.0	60	60.0	
Vaginal bleeding	Yes	10	10.0	8	8.0	0.621
	No	90	90.0	92	92.0	
Contact bleeding	Yes	22	22.0	40	40.0	0.006*
	No	78	78.0	60	60.0	

Table [2]: The clinical appearance of cervix

		Group [A]: Colposcopy		Group [B]: Cervicoscopy		p. value
		n.	%	n.	%	
Cervical polyp	Yes	9	9.0	5	5.0	0.268
	No	91	91.0	95	95.0	
White spot	Yes	40	40.0	50	50.0	0.155
	No	60	60.0	50	50.0	
Cervical ulcer	Yes	30	30.0	56	56.0	0.000*
	No	70	70.0	44	44.0	
Hypertrophic cervix	Yes	22	22.0	30	30.0	0.197
	No	78	78.0	70	70.0	
Cervical ectopy	Yes	30	30.0	20	20.0	0.102
	No	70	70.0	80	80.0	

Table [3]: Histopathology among studied patients

Biopsy	Group [A] colposcopy [n=100]		Group [B] cervicoscopy [n=100]		P. value
	n.	%	n.	%	
Chronic non-specific cervicitis	44	44.0	55	55.0	0.132
Endocervical adenocarcinoma grade 2	1	1.0	2	2.0	
Polypoidal chronic non-specific cervicitis	9	9.0	5	5.0	
Cervical intraepithelial neoplasia grade 1	6	6.0	10	10.0	
Cervical intraepithelial neoplasia grade 2	5	5.0	8	8.0	
Not follow up	35	35.0	20	20.0	

Table [4]: Office cervicoscopy and colposcopic findings

Findings	Group [A]: Colposcopy		Group [B]: Cervicoscopy		p. value
	n.	%	n.	%	
Abnormal vasculature	5	5.0	18	18.0	0.011*
Inflammatory changes	86	86.0	77	77.0	
Polyp	9	9.0	5	5.0	

Table [5]: Management of cervical lesions

Management	Group [A] colposcopy		Group [B] cervicoscopy		P. value
	n.	%	n.	%	
Cautery with diathermy	26	26.0	15	15.0	0.087
Medical treatment	59	59.0	69	69.0	
Polypectomy	9	9.0	4	4.0	
Polypectomy, cautery, and diathermy	0	0.0	1	1.0	
Referral	6	6.0	11	11.0	

Table [6]: Sensitivity for identification of polyp, inflammatory changes, and abnormal vasculature, in relation to the biopsy as a standard diagnostic method in groups A and B.

		Sensitivity	Specificity	PPV	NPV
Polyp	Group [A] colposcopy	100	100	100	100
	Group [B] cervicoscopy	100	100	100	100
Inflammatory changes	Group [A] colposcopy	97.73	61.9	84.3	92.9
	Group [B] cervicoscopy	98.18	88	94.7	95.7
Abnormal vasculature	Group [A] colposcopy	33.33	98.11	80	86.7
	Group [B] cervicoscopy	85	98.33	94.4	95.2

DISCUSSION

Cervical cancer was the world's second most prevalent cancer, but invasive cervical cancer was deemed a preventable disease because it was associated with a long pre-invasive stage [CIN] that made it ideal for the use of screening and therapy.

The purpose of this analysis was to assess the diagnostic accuracy of colposcopy and office cervicoscopy for cervical evaluation of suspected cervix, compared with histopathological evaluation. The wide range of age [19-50 years], equality, profession, education levels and residence of the women included in this study made them more or less representative of the general population.

In line with the current research, Vaidya *et al.* [7] showed that, CIN was more common in the >35-year age group. Additionally, Valli *et al.* [8] concluded that, cervicoscopy assessment identified 7.8% of CIN2-3 in LSIL patients with insufficient or negative colposcopy. In patients with negative colposcopy the percentage of undiagnosed lesions inside the cervical canal was very low. The use of blue dye added to the sensitivity of the exam. Furthermore, colposcopy in 30% of women at 12 months after large loop excision of the transformation zone [LLETZ] was unsatisfactory in Thompson and Marin *et al.* [9].

Dhakal *et al.* [10] reported that 78.70% had chronic cervicitis, 8% had normal findings, 1.30% had moderate, and 6.70% had serious squamous intraepithelial lesions. These results are comparable to the current work, where, 59% of patients in the colposcopic group and 69% of patients in the office cervicoscopy group received medical attention, followed by diathermic cautery in about 26% of patients in the colposcopic group and 15% in the office cervicoscopy group.

Darwish *et al.* [11] concluded that, office cervicoscopy is a good tool for identification of cervical lesions in suspicious cervix, especially if added to stationary colposcopy. Cervicoscopy offers a better assessment of the endocervical canal due to its small caliber, especially in cases of CIN2 and CIN3 with a possibility to examine the endometrial cavity at the same time.

In a retrospective study, Jordão *et al.* [12] reported that, cytological examination is a reliable and simple method to determine management options in patients with suspicious cervix and negative colposcopic data. It remains the gold-standard for diagnosis of such lesions.

De Rosa *et al.* [13] reported a statistically significant association between colposcopy and cervicoscopy for all lesions detected in 634 females. They concluded that, cervicoscopy is a good technique to recognize and grade CIN lesions in a group of patients where colposcopy was negative or insufficient. Cervicoscopy able to overcome the limits of colposcopy in the assessment of the squamo-columnar junction and to establish the actual lesion extension.

Rahimi *et al.* [14] reported that, cervicoscopy is a safe, office-based and reliable procedure, for the detection of the transformation zone in females with CIN 3 and insufficient colposcopy. Additionally, it potentially permits biopsy of the transformation zone. However, they reported a relatively low specificity/negative predictive value in prediction of the high-grade cervical intraepithelial neoplasia.

Conclusion: Colposcopy and office cervicoscopy have comparable sensitivity and specificity for the identification of cervical polyps. However, in abnormal vasculature and inflammatory lesions, cervicoscopy was more sensitive and specific than colposcopy. In addition, cervicoscopy is more beneficial in the

assessment of endocervical canal and uterine cavity.

The limitation of our study were the indices of the assessment of ectocervix by small caliber device as office cervicospcope and the clinicians' satisfaction for the usage of office cervicospcope in the assessment of the suspicious cervix.

Financial and Non-Financial Relationships and Activities of Interest

None

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