**Research Article**

**Endocervicoscopy in the Diagnostic Workup of Cervical Intra-Epithelial Neoplasia.**

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**Abstract**

**Objective:** To propose and validate endocervicoscopy, a new technique for patients with squamous intraepithelial lesion. **Design:** descriptive cross-sectional study. **Setting:** The early cancer detection unit, department of Obstetrics and Gynecology, Minia University Hospital – Faculty of Medicine, Minia University. **Patient(s):** The study population was recruited from the out-patient clinic of Minia University Hospital, between the periods of February 2022 to April 2023. The present study included patients, patients were excluded from the study. **Intervention(s):** Endoscopic evaluation of the endocervical mucosa, performed with an office continuous-flow hysteroscope after application of acetic acid (% endocervicoscopy). Patients diagnosed with abnormal cervical findings underwent targeted biopsies of the visualized abnormalities. Negative patients at endocervicoscopy underwent four quadrant biopsy of the endocervix. **Main Outcome Measure(s):** Sensitivity, specificity, accuracy, positive predictive value (PPV), and negative predictive value (NPV) of endocervicoscopy plus targeted biopsy. **Result(s):** Endocervicoscopy plus targeted biopsy showed a sensitivity of %, a specificity of %, a diagnostic accuracy of %, a PPV of %, and a NPV of %. **Conclusion(s):** Endocervicoscopy appears to be a safe and effective office technique, improving the diagnostic work-up of cervical intraepithelial lesions. The precise localization of the lesions allows for the depth of cone excision to be tailored, thus leading to a more conservative treatment and preserving the future fertility of women.

**Key Words:** Endocervix, cervical intraepithelial neoplasia, curettage, Endocervicoscopy

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**Introduction**

New diagnostic imaging techniques for the endocervix need to be implemented, which might integrate the colposcopic imaging and counter the diagnostic inaccuracy of the “blind” methods. A new diagnostic imaging technique, such as endocervicoscopy, may represent an useful tool for the clinicians in that it would allow the precise definition of the lesion by overcoming the limits of the current techniques (Bifulco et al., ).

**Aim of the Work:** This work aimed to evaluate the diagnostic performance of Endocervicoscopy to enhance the detection of endocervical lesion in women being evaluated for cervical intra-epithelial neoplasia.

**Patients and Method:** This descriptive cross-sectional study was conducted in the early cancer detection unit (ECDU), department of Obstetrics and Gynecology, Minia University Hospital – Faculty of Medicine, Minia University. The study population was recruited between the periods of February to April ; included patients; patients were excluded from the study. The aim and technique of the study were simply explained to the patients. The study protocol was approved by scientific ethical committee research of the department of Obstetrics and Gynecology, faculty of Medicine, Minia University at its monthly meeting on December . Also approval was ascertained from the Institutional Review Board of the University Hospital-Quality control unit of the faculty of Medicine, Minia University on January . All patients were counseled about the procedure and verbal and signed an informed consent before treatment.
Inclusion criteria: All patients were; Married female; at least 18 years of age with negative pregnancy test and recent positive PAP smear.

Exclusion criteria:
Suspicion or evidence of invasive lesions on Pap smear, biopsy, or colposcopic examination, current PID or other gynecological infection, current menstruation, cervical stenosis, cervical or vaginal mass and Poor compliance.

- All the women referred to ECDU from out patient clinic for evaluation with positive PAP smear results then were evaluated by colposcopy and histopathology. Followed by endocervicoscopic assessment. And according to the result; the patients were assigned either to do directed biopsy if there was visible lesion or four quadrant random biopsy if there was no visible lesion.
- All women included in the study were subjected to: A thorough medical history; after that a physical examination was performed. Then;
- Colposcopic evaluation;
- Endocervicoscopic examination:
The first step of endocerviccoscopy (a vaginoscopic approach); the vagina was distended by introducing the fluid distention medium. As soon as the external uterine orifice was visualized, the irrigation of saline was stopped and a syringe with 2 mL of 5% acetic acid was connected to the inflow channel of the hysteroscope. In this way the impregnation of the cervix was directly and clearly visualized. The tropism, vascularization, and morphology of the endocervical mucosa were evaluated.

Normal Finding of endocervicoscopy:
The canal of the cervix appears spindle-shaped. Longitudinal crests of the endocervical mucosa are seen protruding into the cavity anteriorly and posteriorly as the plicae palmatae. Secondary oblique branching of the mucosa gives the appearance of a tree and constitutes the arbor vitae.

Abnormal finding:
- Atypical TZ: acetowhite epithelium, mosaicism, punctuation, iodine positivity and atypical vessels
- Presence of benign lesion: Mucous polyp, adenomatous polyp, masses, immature metaplasia...etc.

Endocervicoscopy was completed by an examination of the uterine cavity.
Patients were managed according to the histopathological findings which varied from LLETZ to hysterectomy which were done in fourteen cases.

Results:
The present study included 350 women with positive Pap smear. Twenty three patients were excluded from the result along the course of evaluation and assessment, so about 327 patients only who complete the maneuver.

The patient characteristics were as follow: Age of the patients ranged between 25-62 years old. Most of the screened cases had single marriage about 245 (0.05) patients. The duration of marriage ranged between 2-42 years, with the mean 22.75 ± 20.75 years. (0.05) of patients were of urban origin. The parity ranged between 0-20 offsprings, 7.25% of patients being of high parity (have>4 offsprings). Regarding smoking, about (44745) were currently exposed to passive effect of smoking.
Table (1): Distribution of the patients according to results of endocervicoscopy

<table>
<thead>
<tr>
<th>Endocervicoscopy</th>
<th>NO. = 372</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No lesion</td>
<td>244</td>
<td>65.4%</td>
</tr>
<tr>
<td>Benign Lesion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polyp</td>
<td>22</td>
<td>6.7%</td>
</tr>
<tr>
<td>Adenomatous polyp</td>
<td>5</td>
<td>1.3%</td>
</tr>
<tr>
<td>Metaplasia</td>
<td>6</td>
<td>1.6%</td>
</tr>
<tr>
<td>Atypical lesion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Acetowhite epithelium, Mosaicism, Punctuation)</td>
<td>22</td>
<td>37.6%</td>
</tr>
</tbody>
</table>

Table (2): Diagnostic performance of the endocervicoscopy in detecting endocervical lesion

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>97.8%</td>
<td>97.3% to 98.3%</td>
</tr>
<tr>
<td>Specificity</td>
<td>98.4%</td>
<td>97.9% to 98.8%</td>
</tr>
<tr>
<td>Positive predictive value</td>
<td>98.7%</td>
<td>98.2% to 99.1%</td>
</tr>
<tr>
<td>Negative predictive value</td>
<td>98.4%</td>
<td>97.9% to 98.8%</td>
</tr>
<tr>
<td>Diagnostic accuracy</td>
<td>98.4%</td>
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</table>

Discussion

Numerous techniques for the study of the endocervix (liquid-phase cytology, flow cytometric DNA analysis, microcolpohysteroscopy, endocervical curettage) have been developed and become widespread, substantially providing information available from the conventional Papanicolaou smear and those resulting from conization (Bifulco et al., 2020).

Endocervical evaluation in the present study by direct endocervical vision, after priming with acetic acid, enabled us to diagnose the majority of the glandular lesions of the endocervix in patients recruited with Pap smear showing HSIL&AGC. Out of eight cases (27.5%) diagnosed by endocervical biopsy; all of them were CIN ≥2 pathology or more. These results were matched with Williams and colleagues (2003); in which the ECC was positive in only 9.3% of the cases, and none of these women were subsequently found to have greater than CIN ≥2 pathology. Also our results were comparable to Pretorius and colleagues (2011) who reported higher rates of positive ECC in ASCUS and LGSIL cytology (≥1.3% and ≥4.8% with greater than or equal to CIN ≥2, respectively), but noted a much higher rate of positive ECCs in the setting of HGSIL on referral cytology (≥1.2% with greater than or equal to CIN ≥2). But our data was not matched with Krebs et al. (2011) who considered that ECC was unnecessary in women who had a satisfactory colposcopic examination; neither matched with Massad and Collins at 2003, who studied ≥2 women undergoing colposcopies, and detected abnormal ECC that changed the management of ≥2 women (≥2).

References


El-Moghazy et al.,


الملخص العربي

تم تصميم هذه الدراسة لتقييم إمكانية وفائدته استخدام المنظار الرحمي في تنظير عنق الرحم الداخلي كوسيلة إضافية للتنبؤ بواسطة مناظر عنق الرحم المهبلية في تشخيص التغيرات الداخلي للنسج الطلائي للرحم.

وقد تم إجراء هذه الدراسة في وحدة الكشف المبكر عن الأمراض بقسم أمراض النساء والتوليد مستشفى المنا مطلع 2011 إلى أبريل 2013. وتمت هذه الدراسة على 45 سيدة كانت نتيجة الفحص الخلوي لمسحات عنق الرحم إيجابية وذلك بعد استبعاد السيدات الحامل أو الأتى تعاني من نزيف مهبري شديد أو تم إجراء جراحة لتقز الرحم حديثاً.

وقد تم إجراء الاتى لكل سيدة:

- اخذ تاريخ مرضي دقيق، وفحص إكلينيكي مفصل، وتطور مسابقة من عنق الرحم وإرسالها للتحلي خالوى، وفحص عنق الرحم بالعين المجربة وتحديد عنق الرحم المهبلية قبل وبعد إضافة ضع عض الخليك بترکي 5% ويتضح عن الامور التي تتضمن بالنوع الأبيض والتي يحيث أن تكون حاملة للمرض ثم تم الفحص باستخدام نظام الكشف البصري مع مناظر عنق الرحم المهبلية والبحث عن الأجزاء التي يتحدث أن تكون حاملة للمرض وتم أخذ عينة أو أكثر من الأجزاء المحتمل إصابتها. وتم إرسال هذه العينات إلى التحليل الباثولوجي لتخفيف كونها تحتوى على تغيرات داخلية للنسج الطلائي للرحم أو لا.

ثم تم الفحص باستخدام مناظر عنق الرحم المهبلية والتحلي الباثولوجي للعينات ثم استخدام المنظار الرحمي في تنظير عنق الرحم الداخلي ومقارنته بواسطة التخطيط المعياري وهو التحليل الباثولوجي للعينات. وتم تجميع كل البيانات في ملفات خاصة ثم تم تقييمها إحصائيًا.

وتم تقسيم المرضى وثبت أن استعمال المنظار الرحمي في تنظير عنق الرحم الداخلي مع مناظر عنق الرحم المهبلية يعني نتائج أعلى في القيمة التشخيصية الإيجابية والمرفقة وخاصة في تلك المجموعة التي لها نتائج محسزة عنق الرحم من درجة عالية الخطور.

ومن هذه الدراسة وجد أن القيمة التنبؤية الإيجابية باستخدام استعمال المنظار الرحمي في تنظير عنق الرحم الداخلي (100%) وقيمة التنبؤية السلبية كانت (53.2%).

ومن هذه الدراسة وجد أن استعمال المنظار الرحمي في تنظير عنق الرحم الداخلي يضاهى في كل من القيمة التنبؤية الإيجابية ونسبة النتائج الإيجابية الحقيقية بالمقارنة مع الكشف الداخلي لتقز الرحم.