

Original article

Evaluating and Comparing Adequacy of Pathological Specimens Obtained from Endocervical Curettage and Cervical Biopsy among Outpatients with Similar Specimens from Operating Room in Shahid Sadoughi Hospital in Yazd in 2009-2010

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Abstract

Objective: Cervical cancer is one of the most common malignancies in women. In many countries incidence of this cancer is reducing because of screening tests such as pap smear. After the pap smear if the pathologist reports abnormal cervical cytology, colposcopic examination of the uterine cervix remains the gold standard in the evaluation of patients. Because in some patients, dysplasia is in the endocervical canal and can not be visualized the time of colposcopic examination, endocervical curettage (ECC) must be performed.

The usefulness of endocervical curettage has been debated for years because of pain and discomfort of patients in the time of ECC and inadequate specimen. In this study we want to look for specimen adequacy of outpatient endocervical curettage and compare it with similar cases had done in operation room with anesthesia.

Methods: This retrospective study is Cross- sectional and was done on pathologic results of outpatient & inpatient specimens that had underwent endocervical curettage and cervical biopsy. Data was collected from pathology reports and were analyzed by software Spss₁₅. This study was done in Shahid Sadoughi hospital.

Results: In total 340 cases of outpatient Endocervical curettage only in 70 patients (20/6%) pathologists reported adequate specimen and in 340 cases of outpatient cervical biopsy, pathologists reported adequate specimen in 334 patients (98/2%).

Among 524 cases of ECC in operation room in 476 patients (90/8%) Pathologists reported adequate specimens and all of cervical biopsies in operation room had adequate specimen.

Conclusion: These findings suggest that many specimens of outpatient Endocervical curettages are insufficient but similar samples of inpatient are sufficient. Therefore to obtain adequate specimens, that is better to do endocervical curettage in operation room or use other sampling methods that we mentioned it.

Keywords: Endocervical Curettage, Cervical Biopsy, colposcopy.

Introduction

Cervical cancer is one of the most common cancers in women. Accordingly, 500 million women die because of cervical cancer worldwide. This is a serious global disorder (1).

In many countries, the prevalence of this type of cancer has greatly reduced due to screening for

precancerous lesions (2). It is noteworthy that cervical cancer can be prevented. Obstetricians and health experts should be familiar with screening techniques, diagnostic methods and risk factors for cervical cancer and management of a pre-invasive disease in any society. (3) The Pap smear test is the

best screening method for diagnosis of dysplastic and neoplastic cervical lesions (2).

Colposcopy is a medical diagnostic procedure in which cervix and vagina are examined with an instrument called colposcope, which provides adequate light and magnification (from 10x to 40x) for a physician. Cervical and vaginal tissues can be examined before and after adding dilute acetic acid solution. Thereby, an overview of abnormal tissue is given and a biopsy is taken from suspected precancerous lesions in high-risk areas. Colposcopy mainly aims to diagnose or rule out presence of precancerous lesions in cervical areas (4).

Endocervican examination reveal the extent of cervical precancerous and cancerous lesions. In some cases, the lesions are restricted to endocervical areas and are inaccessible by colposcopy (5). We attempted to study adequacy of specimens from endocervical curettage and cervical biopsy among outpatients. The results were compared with adequacy of similar specimens from an operating room.

Method

This was a descriptive, cross-sectional and retrospective study. The statistical population consisted of all outpatients and hospitalized patients with endocervical curettage and cervical biopsy who visited Shahid Sadoughi Hospital in 2009-2010. The samples were selected from outpatients and hospitalized patients with records of endocervical curettage and cervical biopsy in Department of Pathology by a census.

First, the outpatients with endocervical curettage and cervical biopsy and similar cases in operating rooms were extracted using records of the patients in Department of Pathology. Then, data related to patient's age and adequacy of specimens were extracted and collected in a questionnaire. The collected data was coded in a Statistics Table and analyzed using SPSS version 15. The results were analyzed with Chi-square.

Results

A total of 103 patients were included in this study. In this study, pathological results of 340 outpatients who underwent endocervical curettage and cervical biopsies as well as pathological results of 524 cases with endocervical curettage and 70 cases with cervical biopsy [performed] in operating rooms were investigated.

In this study, only 70 cases (20.6%) samples were adequate for pathological examination and the rest of the cases (270 patients, 79.4%) were not sufficient for pathological examination among 340 outpatients with endocervical curettage (Table 1).

Table 1 – frequency distribution of adequacy of the specimens from endocervical curettage among outpatients by age

Specimens from endocervical curettage among outpatients Age group	Adequate	Inadequate	Total
Below 30 years old	5 (12.5%)	35 (87.5%)	40 (100%)
Between 30 and 39 years old	22 (20%)	88 (80%)	110 (100%)
Between 40 and 49 years old	29 (25.7%)	84 (74.3%)	113 (100%)
Above and older than 50 years old	14 (18.2%)	63 (81.8%)	77 (100%)
Total	70 (20.6%)	270 (79.4%)	340 (100%)

p-value = 0.229

In addition, 334 cases (98.2%) had sufficient samples for pathological examination and only 6 cases (1.8%) had inadequate samples for pathological examination among 340 outpatients with cervical biopsy. In this study, P-value was equal to 0.548 (Table 2).

Table 2 – frequency distribution of adequacy of samples from cervical biopsies among outpatients by age

Specimens from cervical biopsies among outpatients by age Age group	Adequate	Inadequate	Total
Below 30 years old	40 (100%)	0 (0%)	40 (100%)
Between 30 and 39 years old	107 (97.3%)	3 (2.7%)	110 (100%)
Between 40 and 49 years old	112 (99.1%)	1 (0.9%)	113 (100%)
Above and older than 50 years old	75 (97.4%)	2 (2.6%)	77 (100%)
Total	334 (98.2%)	6 (1.8%)	340 (100%)

p-value = 0.548

In total, 100% of the specimens were sufficient for pathological examination among 70 patients who underwent cervical biopsy.

Moreover, 476 (90.8%) of the specimens were adequate for pathological study among 524 patients who underwent endocervical curettage in operating rooms. In this analysis, P-value was equal to 0.519 (Table 3).

Table 3 – frequency distribution of adequacy of specimens from endocervical curettage in operating room by age

Specimens from endocervical curettage in operating room Age group	Adequate	Inadequate	Total
Below 30 years old	21 (84%)	4 (16%)	25 (100%)
Between 30 and 39 years old	108 (91.5%)	10 (8.5%)	118 (100%)
Between 40 and 49 years old	240 (90.2%)	26 (9.8%)	266 (100%)
Above and older than 50 years old	107 (93%)	8 (17%)	115 (100%)
Total	476 (90.8%)	48 (9.2%)	524 (100%)

p-value = 0.519

Therefore, many cases with endocervical curettage in the operating room had sufficient samples for pathological examination while outpatients without anesthesia had insufficient specimens for pathological examination.

Following pathological findings were found in outpatients with endocervical curettage:

Among 70 cases with adequate specimens, 19 cases had cervicitis with squamous metaplasia, 34 cases had cervicitis, one case had LSIL, 3 cases had invasive carcinoma, 12 cases had atypism and 1 case had no pathological implication (Table 4).

In this study, pathological results among outpatients with cervical biopsies were as follows:

Among 334 cases with sufficient samples, 31 cases had cervicitis with squamous metaplasia, 80 cases had cervicitis, 34 cases had LSIL, one case had HSIL, 5 cases had invasive carcinoma, 61 cases had atypism and 22 had other pathological implications such as polyp. In this analysis, P – value was equal to 0.073 (Table 5).

It is worth mentioning that carcinoma was simultaneously diagnosed in three cases with endocervical curettage and cervical biopsy. The one case with LSIL in endocervical curettage was diagnosed with cervicitis in cervical biopsy.

Among the twelve cases with atypism, six cases had simultaneously cervicitis in cervical biopsies and the remaining six cases only had atypism.

Discussion

Cervical cancer is one of the most common cancers in women (1). Prevalence of this type of cancer has decreased due to Pap smear screening (2).

Colposcopy is currently a gold standard in evaluation and follow-up of the cases with abnormal Pap smear (6). In some cases, endocervical curettage is also performed during colposcopy. The usefulness of these simultaneous procedures in evaluating women with abnormal cytology is highly debated. Insufficient specimens resulting from outpatient endocervical curettage are seriously problematic (7 and 8).

In this study, 70 cases (20.6%) had adequate specimens in pathological examination among 340 cases undergoing outpatient endocervical curettage and the rest of the cases (79.4%) had inadequate specimens. However, 476 cases (90.8%) had adequate specimens for pathological examination among 540 patients undergoing endocervical curettage under anesthesia in the operating room. Comparison between the two cases showed that endocervical curettage under anesthesia in the operating room is preferred to outpatient endocervical curettage. Insufficient number of specimens in outpatient endocervical curettage may be due to severe pain during the procedure, which would not allow the obstetricians to masterfully take enough specimens.

Shah AA *et al.* reported that Vabra mc clearly and quantitatively gives more tissue samples than conventional curettage. Pain severity with Vabra mc was significantly lower than conventional methods (9).

In this study, the number of inadequate samples obtained from outpatient endocervical curettage was reported as the main barrier to pathological diagnosis. Failure to obtain adequate samples was the most important factor, which reduced diagnostic value of endocervical curettage.

Shepherd JP *et al.* evaluated diagnostic value of endocervical curettage using conventional method and endocervical brush. In the conventional method, 45% false negative results were obtained. False negative results were obtained as 8.4% in endocervical brush. The difference was due to increased number of specimens in endocervical brush. They stated that usefulness of endocervical curettage in diagnosis of lesions in endocervical canal mainly depends on adequacy of specimens (10).

In this study, insufficient number of specimens mainly contributed to incorrect pathological diagnosis in endocervical curettage. Other methods such as endocervical brush are recommended to obtain enough samples for pathological examinations.

Table 4 – pathological diagnosis of endocervical curettage among outpatients by age

Age group Pathological diagnosis	Below 30 years old	Between 30 and 39 years old	Between 40 and 49 years old	Above 50 and older than 50 years old	Total
Cervicitis with squamous metaplasia	1 (20%)	7 (33.3%)	8 (27.6%)	3 (21.4%)	19 (27.5%)
Cervicitis	4 (80%)	13 (61.9%)	12 (37.9%)	5 (35.7%)	34 (47.8%)
Low-grade squamous intraepithelial lesions	0 (0%)	0 (0%)	1 (3.4%)	0 (0%)	1 (1.4%)
Invasive carcinoma	0 (0%)	0 (0%)	0 (0%)	3 (21.4%)	3 (4.3%)
Atypism	0 (0%)	1 (4.8%)	8 (27.6%)	3 (21.4%)	12 (17.4%)
Without pathological lesion	0 (0%)	0 (0%)	1 (3.4%)	0 (0%)	1 (1.4%)
Total	5 (100%)	21 (100%)	30 (100%)	14 (100%)	70 (100%)

Table 5 – pathological diagnosis of cervical biopsy among outpatients by age

Age group Pathological diagnosis	Below 30 years old	Between 30 and 39 years old	Between 40 and 49 years old	Above 50 and older than 50 years old	Total
Cervicitis with squamous metaplasia	19 (47.5%)	45 (42.1%)	40 (35.7%)	27 (36%)	131 (39.2%)
Cervicitis	8 (20%)	34 (31.8%)	25 (22.3%)	13 (17.3%)	80 (24%)
Low-grade squamous intraepithelial lesions	5 (12.5%)	6 (5.6%)	15 (13.4%)	8 (10.7%)	34 (10.2%)
High-grade squamous intraepithelial lesions	0 (0%)	1 (0.9%)	0 (0%)	0 (0%)	1 (0.3%)
Invasive carcinoma	0 (0%)	1 (0.9%)	0 (0%)	4 (5.3%)	5 (1.5%)
Atypism	6 (15%)	12 (11.2%)	25 (22.3%)	18 (24%)	61 (18.3%)
Other cases	2 (5%)	8 (7.5%)	7 (6.3%)	5 (6.7%)	22 (6.6%)
Total	40 (100%)	107 (100%)	112 (100%)	75 (100%)	334 (100%)

van der Marel J *et al.* used endocervical sampling methods. In the study, 118 individuals participated among which 58 participants underwent normal curettage and 60 patients underwent endocervical brush for endocervical sampling. In the conventional method, 6 patients among 58 cases (10%) had inadequate specimens. In endocervical brush, all cases had sufficient specimens. The study confirmed that endocervical brush is useful for increasing the number of specimens from endocervical curettage (11).

In the latter study, inadequate specimens were 10%. However, inadequate specimens were 79% in this study. The difference may be due to sample size, skillfulness of obstetrician in sampling

procedure, collection, transferring as well as conditions of the patients.

Zhang L *et al.* examined feasibility of endocervical curettage for evaluating the patients with abnormal Pap smear in comparison with cone biopsy (conization). In endocervical curettage, 85% sensitivity, 35% specificity, 62% positive predictive value and 65% negative predictive value were obtained. Castro *et al.* addressed that these findings were obtained due to inadequacy of specimens from endocervical curettage (12).

In this study, adequacy of specimens from endocervical curettage and pathological examination of the samples were given. Therefore, sensitivity and specificity of this method cannot be

measured. However, inadequacy of specimens was a major problem in outpatient endocervical curettage in this study and the above-mentioned study.

Irvin W *et al.* also found out that only 13 patients with abnormal Pap smear (4.3%) gave additional information for follow-up to the physicians among 304 participants undergoing outpatient endocervical curettage. They noted that a case of cancer or high-grade intraepithelial neoplasia in endocervical canal would not be ignored if endocervical curettage was eliminated during colposcopy in these thirteen patients (13).

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