

The importance of size of cervical ectopy to predict postcoital bleeding: is there any cut-off value?

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Summary

Objective: To investigate the relationship between size of cervical ectopy and existence of postcoital bleeding (PCB) in non-symptomatic women. **Materials and Methods:** Study population were recruited from women ages 18-65 years, sexually active who applied to the present outpatient department. They were asked whether they had had postcoital bleeding in the last three months. After full visualization of the cervix, the existence of ectopy was noted and measured. The smears were taken from all patients with endobrushes. **Results:** The authors found a relationship between the size of ectopy and PCB. In the prediction of PCB, the lesion's size (of both antero-posterior and transverse diameters) of 3.5 mm as the cut off level, sensitivity, and specificity were found to be 70% and 76%, respectively. **Conclusion:** The full visualization of the cervix is important because of the relationship between the existence of ectopy and PCB.

Key words: Ectopy; Postcoital bleeding.

Introduction

Reddish patches on the cervix are a common clinical finding in daily gynecological examination, however, there is no unique term to define this lesion. In medical terminology, it can be named as ectropion, erythroplakia, macula rubra, and erosion [1-4]. Among them, erosion is an inspectional term during gynecologic examination which is commonly used in literature apart from underlying pathology to describe red areas within cervix around the external orifice [5].

There are many underlying pathologies resulting in reddish appearance of the cervix. One of the most commonly seen underlying reasons of the reddish patches of cervix can be ectopy (also called ectropion), erosion, cervical precancerous lesions, or even cervical cancer. Ectopy occurs when the columnar epithelium of the endocervical canal extends outwards into the ectocervix, which is normally covered by stratified squamous epithelium. It appears as a single layer of glandular cells that reside in close association with the underlying vascular cervical stroma [6]. Due to its thin and vascularized epithelium, ectopic tissue is fragile. The prevalence of ectopy ranges from 17% to 50% [7]. It is common in adolescents, pregnant women, and those taking hormonal contraceptives due to physiologic cervical changes [8, 9]. Exact underlying pathogenesis of ectopy is not well known but there is an association with the effects of estrogen [2, 10, 11]. Ectopy is a rare occurrence beyond menopause and frequent during the reproductive ages. It has higher preva-

lence during pregnancy [2] and also among users of estrogen-based contraceptives [11, 12].

Postcoital bleeding (PCB) is a common gynecologic symptom and it is defined as bleeding during or just after sexual intercourse, independent from menstruation [13]. It can be a source of stress for the patient if it is in excessive amount or frequently seen. The underlying etiology may be due to benign or malign pathology. In a systematic review, the prevalence of PCB among women in their reproductive ages was reported to be in the range of 0.7 - 9% [14].

The aim of the present study was to investigate the importance of diameter of cervical ectopy in women with PCB and to detect the possible cut-off value to predict possibility of PCB.

Materials and Methods

After approval of the medical ethics committee, this cross-sectional study was conducted at a high-volume center between January 2012 and June 2012. The study population was recruited from sexually-active women aged 18-65 years. All women in this study had no gynecologic complaint and they were admitted to the outpatient clinic due to routine annual gynecologic examination. Study population included women having cervical ectopy during gynecologic examination. Exclusion criteria of the study were pregnant women, previous diagnosis of preinvasive or invasive cervical lesions, patients with active vaginal bleeding, presence of visible cervical polyps, previous history of abnormal smear pathology, and intensive purulent vaginal discharge. Patients were asked whether they had PCB in the last three months

Revised manuscript accepted for publication November 13, 2013

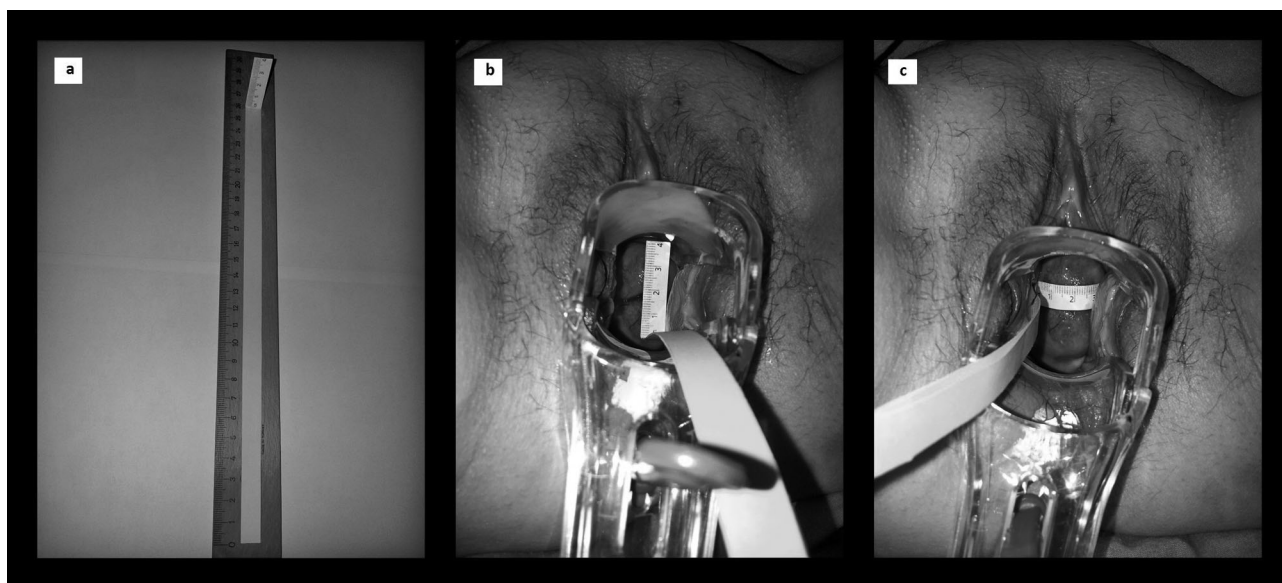


Figure 1. — Measurement of cervical ectopy during gynecologic examination.

Table 1. — Comparison of demographic characteristics and diameter of the cervical ectopy of the groups.

| | | PCB (+) (n = 44) | | PCB (–) (n = 143) | | p value |
|------------------------|------------------|------------------|---------|-------------------|---------|---------|
| Age | | 38.8 ± 10.1 | | 37.9 ± 12.3 | | 0.751 |
| Gravidity | | 3.11 ± 1.1 | | 3.22 ± 1.6 | | 0.922 |
| Smoking | | 9/44 | (20.4%) | 29/143 | (20.2%) | 0.918 |
| Types of birth control | OC pill | 4/44 | (9.1%) | 15/143 | (10.5%) | 0.124 |
| | IUD | 8/44 | (18.2%) | 27/143 | (18.8%) | 0.861 |
| | Other | 32/44 | (72.7%) | 101/143 | (70.7%) | 0.677 |
| Parity | Nulliparity | 13/44 | (29.5%) | 39/143 | (27.2%) | 0.162 |
| | Multiparity | 31/44 | (70.5%) | 104/143 | (72.8%) | 0.279 |
| Types of delivery | Vaginal delivery | 30/44 | (68.2%) | 100/143 | (69.9%) | 0.438 |
| | Cesarian section | 14/44 | (31.8%) | 43/143 | (30.1%) | 0.214 |
| FSFI | | 26.37 ± 6.21 | | 31.26 ± 7.13 | | <0.001 |

PCB: postcoital bleeding; OC pills: oral contraceptive pills; IUD: intrauterine device; FSFI: Female Sexual Function Index.

or not and the patients were grouped into two on the basis of existence of PCB.

After complete abdomino-pelvic ultrasonography and routine biochemical tests, all patients were examined in the lithotomy position by using disposable speculum which was applied gently. Ectopy was noted and measured during the complete visualization of the cervix if it existed. Then, widest transverse and antero-posterior diameters of the ectopy were measured and recorded (Figure 1). After, cervical smears were collected from all patients with endobrushes and the Bethesda System was used for the evaluation of cytological diagnosis (revised in 2001). Existence of cervical ectopy, and dimensions of the ectopy were compared between PCB (+) and PCB (–) groups. Also, the authors detected any cut-off value between diameter of cervical ectopy and possibility of PCB.

The Female Sexual Function Index (FSFI) was used to evaluate the female sexual dysfunction for all patients.

Statistical analyses of data including demographic properties of women, measurement records, and pathology results, were performed using 17.0 SPSS program. Chi square and t test were used

to compare the results of the groups. The receiver operating characteristics (ROC) curve was used to establish cut-off values for the sizes of the cervical lesions. A $p < 0.05$ was considered to be statistically significant.

Results

During this cross-sectional study, 656 women without clinical complaint were evaluated for the study. After exclusion criteria, a total of 187 women had cervical ectopy in their routine gynecologic examination. Forty-four of them reported PCB in last three months. The demographic characteristics of the patients in PCB (+) and PCB (–) are shown on Table 1. The mean age, number of gestation, and smoking did not differ significantly between groups (Table 1). Similarly, types of birth control methods did not show statistical significance between PCB (+) and PCB (–) women

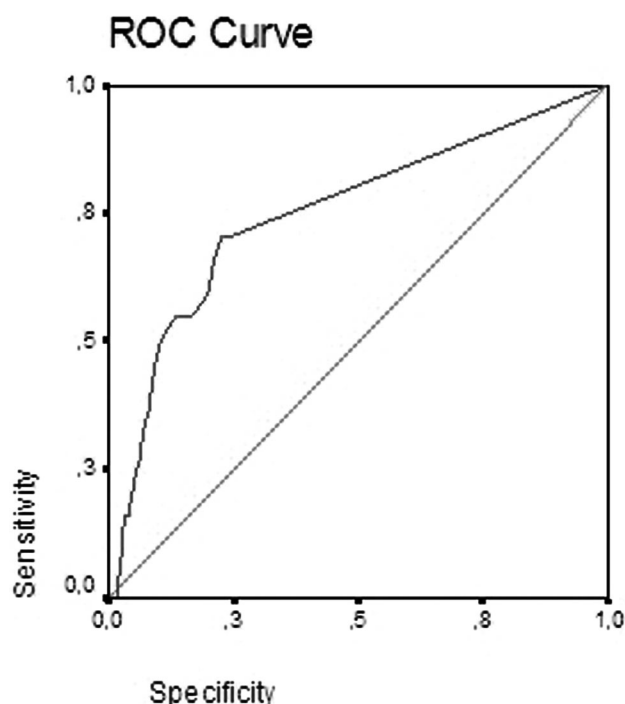


Figure 2. — The ROC curve for transverse length of the cervical ectopies.

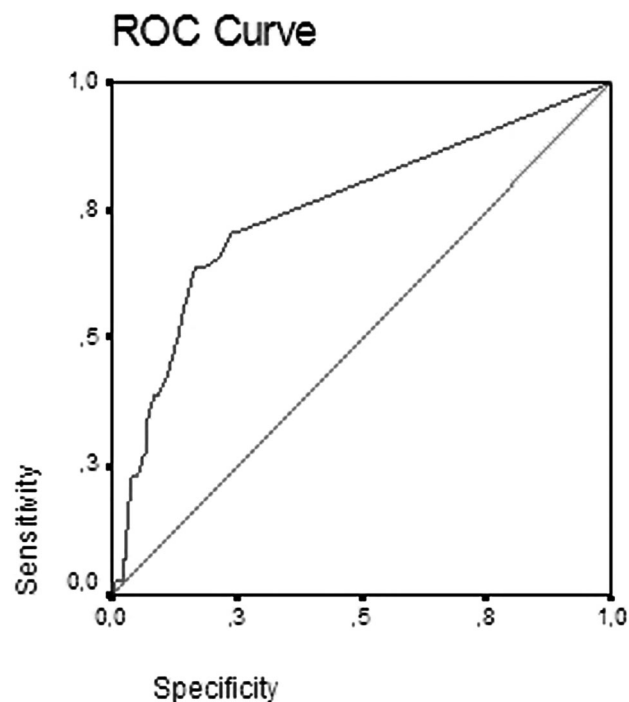


Figure 3. — The ROC curve for antero-posterior length of the cervical ectopies.

(Table 1). Percentage of nulliparity and multiparity, and the percentage of types of delivery among PCB (+) and PCB (–) women were also compared with their counterparts. No statistical significance was noted between groups (Table 1).

Lower FSFI score was noted in PCB (+) group ($p = 0.02$). The ROC analysis was performed to show the sensitivity and the specificity of the diameter of cervical ectopy to predict the postcoital bleeding (Figures 2, 3). According to ROC curve analysis, 3.5 mm was found to be the cut-off size for both transverse and antero-posterior diameter of ectopy that had a sensitivity of 70% and a specificity of 76% for prediction of PCB.

Discussion

Although most of the cervix abnormalities such as leukoplakia or polyp are well-defined, there is still ongoing debate in terminology of red lesions of the cervix. Morphophysiological changes which take place in the transformation zone of the cervix, is that the term cervical erosion is an anachronism. This term should therefore be abandoned. In literature, authors stated that more appropriate terms for the clinical appearance of the cervix are ectopy or ectropion before proven pathological diagnosis [5]. In present study, only histological proven cervical ectopy was included and the relation between its diameter and PCB was investigated.

Cervical ectopy is a commonly seen pathological findings in routine gynecologic examination. Its exact prevalence is not well known, however it is logic to expect that the prevalence of cervical ectopy can vary among clinically symptomatic or asymptomatic women. In the present series, approximately 28.5% of 656 women with no clinical symptoms had cervical ectopy in their vaginal examination. This result was comparable with the literature. Some authors reported the prevalence of cervical ectopy approximately 25% in a family planning polyclinic [7].

Up to now, most of the studies in literature were concentrated on different treatment modalities and the success of the treatment fashion of the cervical ectopy. To the present authors' knowledge, this is the first study of association between size of cervical ectopy and PCB. They found positive relation between the size of ectopy and PCB. As the size of ectopy increases, possible existence of PCB also increases. In the prediction of PCB, 3.5 mm of largest diameter of cervical ectopy was a cut-off value (both for antero-posterior and transverse diameters) in this study and sensitivity and specificity were found to be 70% and 76%, respectively.

It is known that cervical ectopy can be seen in clinically symptomatic or asymptomatic women. Its existence is independent from clinical symptoms and its own clinical symptom are various. However in clinical practice, it is

generally underestimated by both women as well as gynecologists unless it is associated with malign lesion or clinical findings such as PCB or dyspareunia, etc. In the present study, initially all of women stated that they had no gynecologic complaint. However, the present authors found that 23.5% of them reported PCB in last three months in their detailed history. Ignoring of PCB by women in this study might be due to infrequent and small amount of PCB. The results of this study showed that cervical ectopy may be more symptomatic than expected. Therefore, careful and detailed history taking is important to reveal existence of associated symptoms.

PCB can occur due to various underlying reasons. Although it is commonly seen symptom in daily gynecologic practice, most of the women may underestimate it if it is not too much or too frequent. There is no data in literature to detect the relationship between PCB and female sexual function. However, it can potentially be a stress factor on woman's quality of life. In present study, it was shown that existence of PCB, even if it was in small amount, can potentially affect female sexual function. Because, the women in PCB (+) group had lower FSFI score than their PCB (–) counterparts. This result also shows the possible importance and impact of cervical ectopy on female sexual function. In this regards, the cut-off value of diameter of cervical ectopy may be helpful to estimate possible post coital bleeding and consequently female sexual function.

The present study has some limitations. Small number of the groups is main limitation of the study. Secondly, it was also difficult to measure the largest diameter of cervical ectopy. Attempting to measure the largest diameter of cervical ectopy may prolong gynecologic examination time and it may lead to compliance problem of the women. Lastly, some of the women in this study had low socio-economic status. Therefore it was difficult for those women to answer FSFI questionnaire exactly. A relative of the women helped to answer FSFI questionnaire. This also may cause some divergence in exact FSFI score. However in the absence of such data in literature, the present results give an idea regarding the cut-off value of cervical ectopy to predict the possibility of PCB.

As a conclusion, complete visualization of the cervix is an important part of the pelvic examination to exclude malign, premalign, as well as benign lesions. Although cervical ectopy is a benign pathology, it may potentially affect women sexual life even if the women have no ob-

vious complaint. According to the present results, whether the largest diameter of cervical ectopy is larger than 3.5 mm, there is a high possibility of PCB. Therefore, detailed history taking may helpful to identify occult PCB history in those women.

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