



The role of hysteroscopy in diagnosis and treatment of postmenopausal bleeding

Primena histeroskopije u dijagnostici i lečenju postmenopauznog krvarenja

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Abstract

Background/Aim. Abnormal uterine bleeding is the most common problem which brings woman to the gynecologist during the postmenopausal period. The aim of this study was to define the significance of hysteroscopy as a diagnostic procedure for the evaluation of patients with postmenopausal bleeding, as well as to define it as a surgical procedure by which the cause of bleeding can be treated in most cases in the same sitting. **Methods.** The study involved 148 female patients referred to the Clinic for Gynecology and Obstetrics in Niš for postmenopausal bleeding in the period of 12 months. Hysteroscopy with endometrial biopsy were performed in all the patients. Biopsy materials were directed to histological examination, and the hysteroscopic and histological findings were compared afterwards. Polyps and submucous miomas were hysteroscopically removed in the same sitting and also directed to histological examination. **Results.** The success rate of the method was 95.1%, while complications occurred in 1.37% of the cases. The hysteroscopic findings were normal in almost 30% of the cases, and the most common pathological

finding was endometrial polyp. The sensitivity of hysteroscopy in the detection of intrauterine pathology was 100%, the specificity 81%, the positive predictive value 92% and the negative predictive value 100%. In 69.7% of the patients the cause of bleeding was hysteroscopically removed. Hysteroscopy was performed in 58.1% of the patients in the same sitting, and in 11.6% of the patients after obtaining histological findings. **Conclusion.** Hysteroscopy is a safe, highly sensitive diagnostic procedure, thus being an ideal method for evaluation of patients with postmenopausal bleeding. The application of hysteroscopy with endometrial biopsy leads to accurate diagnosis. An adequate diagnosis is crucial for the selection of relevant treatment of postmenopausal bleeding and avoidance of unnecessary major surgical procedures. Except for being a diagnostic method hysteroscopy, is also an outpatient minimally invasive surgical procedure for treating the cause of bleeding in the majority of cases in the same sitting.

Key words:

hysteroscopy; uterine hemorrhage; postmenopause; women; diagnosis; gynecologic surgical procedures.

Apstrakt

Uvod/Cilj. Patološko krvarenje iz materice je najčešće problem koji dovodi ženu na pregled tokom postmenopauznog perioda. Cilj ove studije bio je da se definiše značaj histeroskopije kao dijagnostičke procedure za detekciju uzroka postmenopauznog krvarenja, kao i operativne procedure kojom se u velikom broju slučajeva može ukloniti uzrok krvarenja u istom aktu. **Metode.** U studiju je bilo uključeno 148 bolesnica koje su se javile Ginekološko-akušerskoj klinici u Nišu zbog postmenopauznog krvarenja tokom perioda od 12 meseci. Kod svih bolesnica urađena je histeroskopija sa biopsijom endometrija. Biopsiji su slati na patohistološki pregled, a zatim upoređivani histeroskopski i patohistološki. Polipi i submukozni miomi su histeroskopski uklanjani u istom aktu i, takođe, slati na patohistološki pregled. **Rezultati.** Procenat uspešnosti metode iznosio je 95,1%, a komplikacija 1,37%. Histeroskopski nalaz bio je kod oko 30% slučajeva normalan, a najčešći patološki nalaz bio je polip endometrija. Sensitivnost histeroskopije kod

detekcije intrauterine patologije iznosila je 100%, specifičnost 81%, pozitivna prediktivna vrednost 92% i negativna prediktivna vrednost 100%. Kod 69,7% bolesnica histeroskopski je uklonjen uzrok krvarenja. Kod 58,1% bolesnica operativna histeroskopija rađena je u istom aktu kada i dijagnostička, a kod 11,6% nakon pristizanja patohistološkog nalaza. **Zaključak.** Histeroskopija je sigurna, visokosenzitivna dijagnostička procedura koja predstavlja idealnu metodu za ispitivanje uzroka postmenopauznog krvarenja. Primena histeroskopije sa biopsijom endometrija obezbeđuje preciznu dijagnozu. Adekvatna dijagnoza je preduslov za izbor odgovarajućeg lečenja postmenopauznog krvarenja i izbegavanje nepotrebnih velikih hirurških zahvata. Pored dijagnostičke, histeroskopija je i jednodnevna, operativna, minimalno invazivna metoda kojom se u velikom broju slučajeva u istom aktu može ukloniti uzrok krvarenja.

Ključne reči:

histeroskopija; materica, krvarenje; postmenopauza; žene; dijagnoza; hirurgija, ginekološka, procedure.

Introduction

Abnormal uterine bleeding is the most common problem which brings the woman to a gynecologist during a postmenopausal period¹. The cause of bleeding could be often discovered using simple methods, such as gynecological examination (injuries of vulva and vagina, vaginitis) and speculum examination (pathology of cervix). As a non-invasive method, the transvaginal ultrasound represents the following diagnostic tool which has low specificity and sensitivity in diagnosis of the cause of bleeding².

Dilatation and curettage (DC) have been the key diagnostic procedures in evaluation of patients with postmenopausal bleeding for decades. However, this method has a great number of false negative results, mainly for the fact of being a blind technique. Therefore, there is a great possibility that the pathologically altered place can be missed and hence the biopsy not being representative³.

The introduction of hysteroscopy has open a new dimension in evaluation of patients with postmenopausal bleeding. The entire uterine cavity is directly visualized and it is possible to identify pathological changes and perform biopsy of the suspected lesion under visual inspection. An additional advantage is the fact that a great number of benign pathological changes may be treated in the same sitting by using the office hysteroscope or resectoscope^{4,5}.

The aim of this study was to define the significance of hysteroscopy as a diagnostic procedure for evaluation of pa-

dilatation of the cervix (free-hand technique). A normal saline was used as a distending medium. Endometrial biopsy was performed with scissors or a bipolar tweeze electrode, and the samples were referred to histological examination. The endometrium was described as atrophic when seemed to be thin and pale, hyperplastic when it was thickened and with multipolyp appearance. Endometrial carcinoma was pronounced in case of irregular growth of the endometrium with atypical vascularisation.

As focal intrauterine lesions, polyps and submucous miomas were removed in the same sitting. Dependent on the size of finding, polypectomy or myomectomy was performed using an office hysteroscope or resectoscope (Karl Storz 8mm). Polyps and myomas were also directed to histological examination. All the patients, apart from the cases with complications, were discharged from the hospital two hours after the intervention.

Results

Out of 148 hysteroscopies 3 (0.49%) were unsuccessful due to cervical canal stenosis. Two patients (1.37%) had complications, in both cases it was uterine perforation. The treatment was conservative in both cases. The average age of the patients was 69 (ranging from 42 to 88).

Hysteroscopic and histological findings of 145 patients are shown in Table 1. The hysteroscopic findings were normal in 26.2% of the cases, and the most common intrauterine

Table 1
The hysteroscopic and histological findings in the studied patients

Findings	Diagnostic method	
	Hysteroscopy	Histology
	n (%)	n (%)
Normal endometrium	38 (26.2)	43 (29.6)
Endometrial polyp	43 (29.6)	47 (32.4)
Cervical polyp	24 (16.5)	24 (16.5)
Submucous myoma	8 (5.51)	4 (2.75)
Endometrial hyperplasia	11 (7.58)	8 (5.51)
Endometrial atrophy	18 (12.4)	16 (11)
Endometrial cancer	3 (2.06)	3 (2.06)

tients with postmenopausal bleeding, as well as to define hysteroscopy as a surgical procedure for treating the cause of bleeding in most cases in the same sitting.

Methods

The study involved 148 female patients with postmenopausal bleeding referred to the Clinic for Gynecology and Obstetrics in Niš from January to December 2010. All the patients had previously been processed anamnesticly, clinically and by ultrasound, with the aim of excluding other possible causes of bleeding (injuries of the vulva and vagina, pathology of the cervix and the ovaries).

Hysteroscopy was performed in all the patients in the operation room, in the intravenous sedation, by using a rigid hysteroscope of 4.8 mm (Karl Storz) without grasping and

pathology was endometrial polyp. The sensitivity of hysteroscopy in the detection of intrauterine pathology was 100%, specificity 81%, positive predictive value was 92% and the negative predictive value was 100%. The sensitivity, specificity, positive predictive value and negative predictive value of hysteroscopy in diagnosing various endometrial pathologies are shown in Table 2.

Table 3 presents different options of management. Out of 129 patients indicated for treatment, 27.9% required only drug treatment (progesterone therapy, or hormonal intrauterine device Mirena[®]), 2.32% of the patients required the major surgical procedure such as hysterectomy, and in 69.7% of the patients endometrial pathology was removed hysteroscopically. In 75 (58.1%) patients, hysteroscopy was performed in the same sitting and in 15 (11.6%) after histological verification.

Table 2
Sensitivity, specificity, positive and negative predictive value of hysteroscopy in diagnosis of different intrauterine pathologies

Findings	Sensitivity	Specificity	PPV	NPV
	(%)	(%)	(%)	(%)
Endometrial polyp	91.5	100	100	96
Submucous myoma	100	96	50	100
Endometrial hyperplasia	100	98.5	73	100
Endometrial atrophy	100	98	89	100

PPV – positive predictive value, NPV – negative predictive value

Table 3
Management of the 129 studied patients

Treatment	Patients	
	n	(%)
Medical treatment	36	27.9
Polypectomy	71	55
Myoma resection	4	3
Endometrial ablation	15	11.6

Discussion

Postmenopausal bleeding is an important problem and the most common reason for female patients to be referred to the gynecologist after menopause. To solve this problem, a precise diagnostic is required⁶. Hysteroscopy is a superior method with high sensitivity and specificity in diagnosing the cause of postmenopausal bleeding thanks to the fact that the uterine cavity and intrauterine pathology are directly visualized⁷.

The extremely low percentage of failures (0.49%) indicates the simplicity of the method. In all cases it was impossible to place a hysteroscope due to cervical canal stenosis, which is also the reason for complicated dilation of the cervical canal, thus making it impossible to perform even DC in these cases. The method success rate of 95.1% corresponds to the results of other studies (96.9% in the study of Van Dongen et al.⁸ and 96% in the study of Nikolaou et al.⁹).

The complication rate of 1.37% was slightly higher than in the large study of Singhi et al.¹⁰ (0.9%) which can be explained by the number of hysteroscopies and the experience of the surgeon. However, the rate was much lower than the percentage of uterine perforation during DC found in the literature, which was expected because of placing the hysteroscope into the cavity under direct view¹¹.

The pathology of the uterine cavity was present in 73.7% (107/145) of the patients. Such a high percentage justifies the use of hysteroscopy in cases of postmenopausal bleeding. The results of other studies also indicate a high percentage of abnormal hysteroscopic findings (Lasmar et al.¹² 80%, Sunitha et al.¹³ 69%).

The most common finding was endometrial polyp (29.6%). The majority of other studies also state the highest incidence of endometrial polyp as the abnormal hysteroscopic finding but with a slightly higher percentage (32.5% Dibi et al.¹⁴, 37.6% Cordeiro et al.¹⁵). Five patients were referred to hysteroscopy after DC. The histological findings were normal but the bleeding from the uterus continued. In

all cases the diagnosis of small endometrial polyps in the fundus of the uterus, which were probably not affected by the curette during DC, was made hysteroscopically. In our study, 3 patients (2.06%) were diagnosed with endometrial cancer by hysteroscopy, which was histological verified. The incidence of endometrial cancer that is seen in the literature is generally higher^{16, 17}. Such a low incidence in our study may be explained by the fact that patients with postmenopausal bleeding are usually referred from ambulance for DC, which is still opted by a great number of physicians in our clinic.

The results of our study indicate a high sensitivity and specificity of hysteroscopy in detection of intrauterine pathology (100% and 81%). The study of Allameh et al.¹⁸ presents the results 100% sensitivity of hysteroscopy and specificity of 80.5%, the study of Tandulwadkar et al.¹⁹, 97% and 98%, and Barati et al.²⁰, 98.7% and 99%, respectively. Reviewing the majority of studies from the literature shows that sensitivity of hysteroscopy in the detection of intrauterine pathology exceeds 80%, so we can say that hysteroscopy is a valid diagnostic tool for detecting the cause of postmenopausal bleeding. Most studies also indicate the highest sensitivity and specificity in the detection of focal intrauterine pathology such as polyp and myoma²¹. In our study 4 cases of endometrial polyp were diagnosed as submucous myoma using hysteroscopy which can be explained by the difficulty to distinguish small submucous myoma type 2 from a large sessile polyp. There were also 5 cases of endometrial hyperplasia and atrophy diagnosed by hysteroscopy that proved to be normal findings after the histological examination, but there were no cases of intrauterine pathology that were missed by hysteroscopy and later appeared at histological finding. The majority of studies, as well as our study, show that endometrial cancer has specific hysteroscopic appearance, so it is difficult to hysteroscopically declare it normal and in combination with biopsy the possibility of error is 0%.

The treatment of postmenopausal bleeding depends on the cause of bleeding, thus, the proper diagnosis is crucial. No treatment was applied in 16 (11%) of patients considering the fact that the histological finding was either normal or the case of endometrial atrophy and that bleeding stopped within six months. Drug treatment was applied to 27.9% of the patients. In 58.1% of the women diagnosed with endometrial polyps, cervical polyps and submucous myomas, the polyp or myoma was removed in the same sitting. A total of 19 women were referred to hysteroscopy after DC. The rea-

son was bleeding continuation and the histological finding that showed an endometrial polyp or myoma. This, once again, confirms the fact that only in rare cases endometrial polyp and submucous myoma can be removed by a blind technique such as DC. A total of 11.6% of patients underwent hysteroscopic endometrial ablation after the histological verification, in cases of simple endometrial hyperplasia and normal findings that did not respond to drug treatment. Similar percentages of the share of hysteroscopy in the treatment of postmenopausal bleeding can be seen in the literature²². Classical hysterectomy with adnexectomy was performed in only 2.32% of patients.

Conclusion

Hysteroscopy is a safe, highly sensitive diagnostic procedure, thus being an ideal method in evaluation of patients with postmenopausal bleeding. The application of hysteroscopy with endometrial biopsy leads to an accurate diagnosis. An adequate diagnosis is crucial for the selection of relevant treatment of postmenopausal bleeding and avoidance of unnecessary major surgical procedures. Except for being a diagnostic method, hysteroscopy is also an outpatient minimally invasive surgical procedure by which the cause of bleeding may be treated the majority of cases in the same sitting in.

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Received on April 5, 2011.
Accepted on May 30, 2011.
OnLine-First January, 2013.