Hysteroscopy with directed biopsy versus dilatation and curettage for the diagnosis of endometrial hyperplasia and cancer in perimenopausal women

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Summary

Background: The present study was undertaken to compare the effectiveness of dilatation and curretage (D&C) with hysteroscopy and guided biopsy (H+B) for the collection of endometrial samples adequate for histological examination in perimenopausal women at risk of endometrial hyperplasia or cancer.

Methods: We performed hysteroscopy and biopsy followed by dilatation and curettage in 734 patients with abnormal perimenopausal bleeding or sonographically revealed endometrial pathology. Two hundred and ninety-two patients in whom lesions were totally removed during hysteroscopy were excluded from further study. *Results:* Using both methods we disclosed 64 cases of endometrial polyps, 60 cases of endometrial hyperplasia, and 49 cases of endometrial cancer. Hysteroscopy left just four cases of endometrial pathology undiagnosed as opposed to 21 cases using dilatation and curettage. Histology could not be performed on material obtained with hysteroscopy in four cases and with curettage in 23 cases.

Conclusions: 1) Hysteroscopy with directed biopsy is more sensitive in disclosing all types of uterine lesions than dilatation and curettage. 2) Curettage done after hysteroscopy and directed biopsy does not improve the detection of endometrial cancer.

Key words: Hysteroscopy; Dilatation and curretage; Endometrial hyperplasia; Endometrial carcinoma; Diagnostics.

Introduction

With life expectancy constantly increasing, the perimenopausal period today extends over 30-40% of life. The parallel rise in the number of malignancy cases has placed cancer among the main causes of mortality of the world's population. Effective diagnosis of gynecological malignancies dominating during perimenopause is of prime concern, particularly with regard to endometrial cancer as the leading type [1-3]. Several methods are currently in use for the collection of endometrial samples. Hysteroscopy with directed biopsy (H+B) and dilatation and curettage (D&C) are considered to be the best performing techniques for the detection of hyperplasia and uterine cancer [1, 4-6].

The present study was undertaken to compare the effectiveness of D&C with H+B for the collection of endometrial samples adequate for histological examination in perimenopausal women at risk of endometrial hyperplasia or cancer.

Material and Methods

Seven hundred and thirty-four patients aged 42-86 years were referred because of perimenopausal bleeding or abnormal findings during sonography of the endometrium at the Department of Gynecological Surgery and Oncology of Adults and Adolescents, Pomeranian Medical University in Szczecin, between 1998 and 2005. Sonographic findings qualifying for referral included endometrial thickness exceeding 2.5 mm with accompanying abnormal echo, deformations of the endometrial-myometrial border, presence of fluid in the uterine cavity or of focal lesions in the endometrium. Hysteroscopy with 3-5 biopsies of the endometrium or of larger focal lesions was followed by D&C in all patients. Biopsies were taken from endometrial lesions when these were visible or randomly when no lesions were noticeable. Two hundred and ninety-two patients were excluded from further study when the lesion was totally removed (polyps, submucosal myomata) during hysteroscopy. In the remaining 442 patients we were able to compare the results of histology on material obtained by biopsying the endometrium during hysteroscopy or by curettage. Hysteroscopy was done with an Olympus 5.5 mm diagnostic endoscope and 9 mm surgical hysteroscope. Purisole (mixture of sorbitol and mannitol) was introduced at a pressure of 100-160 mmHg to enlarge the uterine cavity. The procedure was done under intravenous anesthesia without intubation. Histological examination was performed at the Department of Genetics and Pathomorphology, Pomeranian Medical University, Szczecin.

Results

Except for four patients, material collected hysteroscopically proved satisfactory for histology and served to disclose 64 endometrial polyps, 57 cases of hyperplasia (29 simple, 18 complex, 10 atypical), and 48 endometrial cancers. No significant pathology was revealed in 269 patients (atrophy, proliferative phase, secretory phase, normal glandular ducts). Atrophic endometrium in four patients over the age of 70 years did not provide enough material for examination.

When endometrial samples were obtained by D&C, we disclosed 56 endometrial polyps, 51 cases of hyperplasia (27 simple, 15 complex, 9 atypical), and 45 endometrial

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cancers. No significant pathology was seen in 267 patients and the material was insufficient for histology in 23 patients. Hysteroscopy combined with curettage revealed 64 endometrial polyps, 60 cases of hyperplasia (32 simple, 18 complex, 10 atypical), and 49 endometrial cancers.

H+B alone failed to disclose three simple and one atypical hyperplasia which were otherwise revealed by curettage. Scattered glandular ducts were seen in the four patients in whom H+B failed to provide enough material for histology (Figure 1). On the other hand, curettage failed to reveal eight cases of endometrial polyps, nine cases of hyperplasia (5 simple, 3 complex, 1 atypical), and four endometrial cancers which were disclosed by hysteroscopy. Hysteroscopy in the 23 patients in whom curettage failed to provide enough material for histology revealed 18 cases of normal endometrium, two endometrial polyps, two simple and one complex hyperplasia (Figure 2).

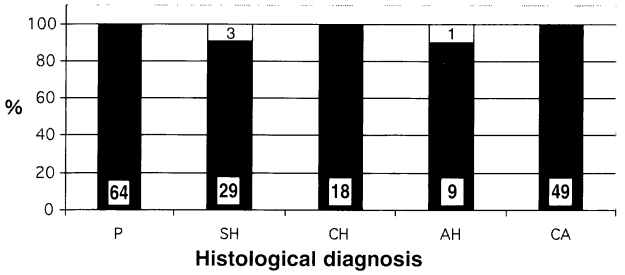

Figure 1. — Histological diagnosis on material obtained by hysteroscopy.

□: False negative; ■: True positive.

P: endometrial polyp; SH: simple hyperplasia; CH: complex hyperplasia; AH: atypical hyperplasia; CA: endometrial cancer.

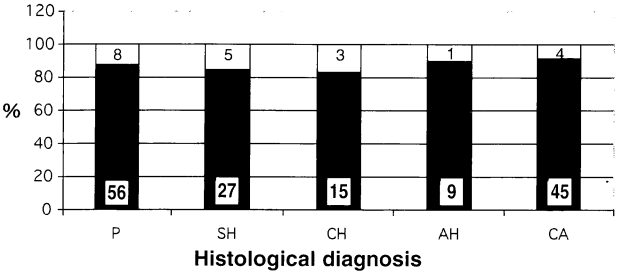

Figure 2. — Histological diagnosis on material obtained by curettage.

□: False negative; ■: True positive.

P: endometrial polyp; SH: simple hyperplasia; CH: complex hyperplasia; AH: atypical hyperplasia; CA: endometrial cancer.

Discussion

In spite of much research there is still no agreement on a method which could serve as the gold standard for the detection of premalignancies and malignancies of the endometrium. The contemporary diagnostic "palette" includes different techniques from cytological smears through suction curette to the most advanced ones, like hysteroscopy with directed biopsy [7-11]. Unfortunately,

Table 1. — *Histological assessment of endometrial samples obtained by curettage versus hysteroscopy and biopsy.*

Hysteroscopy		Curettage							
		NE	P	SH	CH	AH	CA	MI	Total
NE	n	247		3		1		18	269
	%	55.9		0.7		0.2		4.1	
P	n	6	56					2	64
	%	1.3	12.7					0.4	
SH	n	3		24				2	29
	%	0.7						0.4	
CH	n	2			15			1	18
	%	0.4			3.4			0.2	
AH	n	1				8			9
	%	0.2				1.8			
CA	n	4					45		49
	%	0.9					10.2		
MI	n	4							4
	%	0.9							
Total	n	267	56	27	15	9	45	23	442
	%								100.00

NE: normal endometrium, P: endometrial polyp, SH: simple hyperplasia, CH: complex hyperplasia, AH: atypical hyperplasia, CA: endometrial cancer, MI: material insufficient.

histological results on specimens obtained by dilatation and curettage have seldom been compared with the postoperative diagnosis [12-14]. Stock *et al.* [14] examined 50 patients who underwent hysterectomy preceded by D&C and found that in 16% of cases curettage covered less than one-fourth of the uterine cavity. The usually inaccessible sites include openings of the oviducts, fundus, and lateral surfaces of the uterine cavity. Word *et al.* [15] studying a group of 6,907 patients observed that approximately 10% of pathologies are undetected with D&C. Five hundred and twelve patients with a negative result underwent hysterectomy which revealed 38 polyps and 14 submucosal myomata. Lerner [16] performed curettage directly before hysterectomy in 181 patients with benign lesions and found that postoperative histological assessment confirmed five cases of endometrial cancer while only one was disclosed by curettage. Guido *et al.* [8] collected endometrial specimens at random in 65 patients with endometrial cancer and observed a false negative result in five cases when the lesion was limited to a polyp or when it covered less than 5% of the endometrial surface. It can thus be concluded that D&C may fail as a diagnostic method when the pathology is focal.

Hysteroscopy is effective in collecting specimens under visual control from anywhere in the uterine cavity. Many researchers have advocated the usefulness of H+B in revealing minor lesions which normally go undetected with other techniques [17-20]. In our present study we had eight polyps, nine cases of hyperplasia, and four endometrial cancers which were undisclosed by D&C. In each case, focal character of the lesion was confirmed by hysteroscopy. Gimpelson and Rappold [7] compared histological findings on material obtained by H+B with D&C in 276 patients. Hysteroscopy preceded curettage in 265 patients while the reverse was true in 11 patients. Hysteroscopy disclosed 13 submucosal myomatas, 15

polyps and four cases of hyperplasia undetected by curettage. The latter technique revealed just one hyperplasia and one polyp undiscovered by hysteroscopy. We observed that hysteroscopy failed to disclose four lesions as opposed to 21 lesions undetected by curettage. Out of 49 endometrial cancers discovered by hysteroscopy, four were undisclosed by curettage.

Śpiewankiewicz *et al.* [21] studied 202 patients with recurrent uterine bleeding and negative results of D&C from three to five months. Hysteroscopy revealed 38 polyps, 21 myomatas, 19 hyperplasias, and seven endometrial cancers out of which 69.2% were focal. In our hands, hysteroscopy failed to provide specimens adequate for histology in just four patients. No pathology was discovered when curettage was done in these patients. Conversely, curettage produced inadequate specimens in 23 patients. In this group, hysteroscopy disclosed two polyps, two simple and one complex hyperplasia.

Conclusions

1) Hysteroscopy with directed biopsy is more sensitive in disclosing all types of uterine lesions than dilatation and curettage.

2) Curettage done after hysteroscopy and directed biopsy does not improve the detection of endometrial cancer.

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