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ORIGINAL ARTICLE

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Ambulatory hysteroscopy results post-menopause: comparative study between patients with and without metrorrhagia

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Abstract Our objective was to compare the results of ambulatory hysteroscopy in postmenopausal women with and without uterine bleeding. A retrospective descriptive study was carried out on 236 women who were at least 2 years into the menopause, who were not undergoing hormone treatment and who had had abnormal pelvic ultrasound results. Of these women, 150 were asymptomatic and 86 reported haemorrhage. Diagnostic and operative outpatient hysteroscopy was performed between January 2002 and December 2003. There was no difference between the two groups regarding age of patients, age of menopause and presence of at least one of the risk factors for endometrial carcinoma evaluated, although obesity was more frequent in the symptomatic group. Abnormal ultrasound results for these women corresponded in the majority of cases to intracavitary disease, and the absence of organic endometrial pathology was 9.3% vs 11.3% in each group. The more frequent pathology was benign endometrial polyps (64% in bleeding patients and 84.7% in asymptomatic ones). Endometrial carcinoma was diagnosed in 23.3% of women with metrorrhagia and in 1.3% of asymptomatic women. We diagnosed 2.6% of malignancy inside polyps. Hysteroscopy results were confirmed by histology in 90.3% of cases. See and treat in one session was achieved in 91% of benign endometrial polyps. Ambulatory hysteroscopy has high sensitivity and specificity for intracavitary pathology and high tolerability and safety. See and treat in one session can be achieved in the majority of lesions with indication for excision. These results make us advise our menopausal patients with abnormal uterine bleeding to undergo diagnostic hysteroscopy complemented with biopsy.

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Introduction

Hysteroscopy has become the gold standard for the evaluation of uterine cavity, providing correct diagnosis through guided biopsies. Developments in endoscopy technology have enabled us to offer methods of diagnosis and treatment that are more accurate, efficient and easy to use. The new generation of hysteroscopes combine miniaturization with excellent image resolution and surgical ability. The use of five French bipolar electrodes working in normal saline solution, like the Versapoint from Gynecare, allows most of the pathology to be safely diagnosed and the condition operated on at one outpatient session [1, 2].

It has been estimated that between 10% and 15% of women with postmenopausal uterine bleeding have endometrial carcinoma or a premalignant disease of the endometrium [3, 4]. The incidence of malignant endometrial polyps ranges from 0.5% to 4.8% in the literature [5].

Transvaginal ultrasonography has been used as a screening tool for detection of endometrial pathology in postmenopausal women. In patients with abnormal uterine bleeding it has demonstrated a sensitivity of 0.96 and a specificity of 0.89 [6].

Sonography results should always be obtained before further diagnostic evaluation of the uterine cavity is recommended [7]. In our setting the most frequent indication for ambulatory hysteroscopy in menopause are abnormal results of sonograms done routinely; that is, with endometrial thickness above 4 mm, or other intracavitary images, despite an absence of symptoms.

The purpose of this study was to compare the results of ambulatory hysteroscopy in two groups of postmenopausal women: those with complaints of uterine bleeding and those who were asymptomatic, all with

abnormal sonogram results. Our aim was to evaluate (1) the relation between metrorrhagia in menopause and endometrial disease and (2) the role of transvaginal ultrasonography as a screening method in the detection of uterine cavity pathology in postmenopausal women, even asymptomatic women.

Materials and methods

A retrospective analysis was carried out of ambulatory hysteroscopies done from January 2002 to December 2003 in selected women. The setting was an ambulatory unit of a university-affiliated central teaching hospital. There were three inclusion criteria:

1. Women who were at least 2 years into the menopause
2. The absence of hormone therapy (e.g. tamoxifen, oestrogen and progestin) during the past 2 years
3. Previous transvaginal ultrasonography

The study population consisted of 236 menopausal women who had undergone diagnostic or surgical hysteroscopy: 86 with history of uterine bleeding and 150 asymptomatic. Group 1 comprised symptomatic women, and the group 2 women were asymptomatic. All women had had abnormalities on ultrasound evaluation. In terms of cut-off level for endometrial thickness we advise hysteroscopy when this is more than 4 mm. Sonograms were done in several centres, all in 2D technology.

The parameters evaluated were age, age at menopause, other risk factors for endometrial carcinoma, indications for hysteroscopy, ultrasonographic findings, hysteroscopic results, histological diagnosis and follow up. Risk factors for endometrial carcinoma considered were: late menopause (occurring after 52 years old), obesity (body mass index above 30) and diabetes mellitus diagnosed previously by a general practitioner and under therapy with insulin or oral agents.

Patients received premedication with 200 μg of misoprostol vaginally the evening before and 250 mg of naproxen orally in the morning of procedure. Almost all patients received a paracervical block with lidocaine 1%. The procedure was carried out without anaesthesia in few patients.

Diagnostic and operative outpatient hysteroscopy was performed with a 5.5 mm rigid continuous flow hysteroscopic system with 12° or 30° optics (Olympus, Melville, N.Y., USA), with a five French working channel. Hydrodilatation was with normal saline solution, and operating instruments included scissors, graspers and the bipolar Versapoint device. We used mostly twizzle electrode for coagulating and cutting. We kept the input pressure below 100 mmHg. Operating time was always less than 45 min.

A visual pain scale, graded from 0 to 10, was used after each procedure. Except for six cases in group 2, all other surgery involved collection of samples for histological examination (a total of 229 samples).

Data were recorded and analysed with SPSS12 statistical software: the X^2 test for discontinuous variables and Student's *t*-test for continuous variables were used.

Results

Indications for the 236 hysteroscopies were:

- Ultrasound abnormalities in 150 women (63.6%)
- Uterine bleeding and ultrasound abnormalities in 86 patients (36.4%)

In total, 182 procedures were therapeutic and 54 were diagnostic: 55 symptomatic patients (64.0%) and 127 asymptomatic patients (84.7%) underwent operative hysteroscopy, while the remaining patients had diagnostic hysteroscopy.

Global mean pain score was 3.2 (0–10), patient tolerance was very good and the procedure was not considered inconclusive in any case.

Population characteristics are presented in Table 1. Mean age of patients was 65.5 ± 8.1 SD years, between 51 and 87 years. In the overall population 63.2% had at least one risk factor for endometrial carcinoma.

There was no difference between two groups regarding age of patients, age at menopause and presence of at least one of the risk factors for endometrial carcinoma that we evaluated. Obesity was more frequent in the symptomatic group (49.2% vs 29.9%) and this difference has statistical significance ($P = 0.03$).

Ultrasonographic features in both groups are displayed in Table 2. The commonest abnormality reported was endometrial thickness, 87.2% and 64%, respectively, in groups 1 and 2. Ultrasound reference of polyp was more frequent on asymptomatic women (32.6% in this group vs 11.6% in group 1, $P < 0.01$). The presence

Table 1 Differences in population characteristics between symptomatic (group 1) and asymptomatic (group 2) women (*NS* statistically not significant, *S* statistically significant)

Characteristic	Group 1 ($n = 86$)	Group 2 ($n = 150$)	Statistical significance
Patients' mean age (years)	66.4 ± 8.3 SD	64.9 ± 7.97 SD	$P = 0.17$ (NS)
Mean age at menopause (years)	49.6 ± 4.1 SD	50.1 ± 3.8 SD	$P = 0.48$ (NS)
Presence of at least one risk factor for endometrial cancer	65.7%	61.7%	$P = 0.73$ (NS)
Patients with history of late menopause	31.7%	42.2%	$P = 0.23$ (NS)
Patients with obesity	49.2%	29.9%	$P = 0.03$ (S)

Table 2 Ultrasonographic findings reported in the symptomatic (group 1) and asymptomatic (group 2) women (*NS* statistically not significant, *S* statistically significant)

Finding	Group 1 ($n=86$)	Group 2 ($n=150$)	Statistical significance	Total ($n=236$)
Endometrial thickness (>4 mm)	75 (87.2%)	96 (64%)	$P<0.01$ (S)	171 (72.5%)
Polyp	10 (11.6%)	49 (32.6%)	$P<0.01$ (S)	59 (25%)
Fibroid	0	1 (0.7%)	(NS)	1 (0.4%)
Fluid in uterine cavity	1 (1.2%)	4 (2.7%)	(NS)	5 (2.1%)

of fibroid or fluid in the uterine cavity was rarely reported: six cases in total.

Quantification of mean endometrial thickness found on ultrasound showed no statistical difference in both groups (11.6 mm ±6.3 SD in group 1 and 11.0 mm ±4.8 SD in group 2, $P=0.56$).

Hysteroscopic findings are shown in Table 3. The most frequent pathology found was apparently benign endometrial polyp in both groups. In asymptomatic women this diagnose reach 84% of cases, whereas, in women with metrorrhagia, polyps were present in 65.1% ($P<0.01$).

Other benign lesions were diagnosed in 10.1% of the total. The presence of uterine septum occurred only in asymptomatic women, with a frequency of 4.7%.

Carcinoma was suspected in 19.8% and 1.3% of patients in groups 1 and 2, respectively ($P<0.01$). All cases of suspected carcinoma were confirmed by histological examination. In 11 cases no lesion was found (4.7%): six in group 1 and five in group 2.

Table 4 shows the histological diagnosis obtained from hysteroscopically collected samples.

In six patients in group 2 no biopsy was performed: three intrauterine adhesions and three uterine septum.

Histology confirmed the presence of benign polyps in 77.1% of cases: 64.0% and 84.7% in groups 1 and 2, respectively, this difference being statistically significant ($P<0.01$).

Endometrial carcinoma was significantly more frequent in symptomatic than asymptomatic women (23.3% vs 1.3%, $P<0.01$).

Overall, endometrial carcinoma was diagnosed in 22 women (9.3%). Of these 22 women, 91.3% had had uterine bleeding. At least one of the risk factors described was identified in 73%. Obesity was found in 61.9% of women with carcinoma in contrast to 34.8% with benign disease ($P=0.03$) and was the only risk factor that was significantly different. Ultrasonographic findings of patients with carcinoma were: diffuse endometrial thickness in 17 cases, focal endometrial thickness in three, polyp and fluid in the uterine cavity in one case each. The mean endometrial thickness was 14.1 mm ±8.5 SD compared with 10.9 mm ±4.8 SD in women with benign lesions ($P=0.04$).

In asymptomatic women the diagnosis of endometrial hyperplasia and carcinoma was made in 4.0%.

In 5.8% of symptomatic women an atrophic endometrium was the only finding, whereas, in group 2, this accounted for 2%.

Table 3 Comparison of endoscopic pictures between symptomatic (group 1) and asymptomatic (group 2) women (*NS* statistically not significant, *S* statistically significant)

Endoscopic result	Group 1 ($n=86$)	Group 2 ($n=150$)	Statistical significance	Total ($n=236$)
Without pathology	6 (7%)	5 (3.3%)	(NS)	11 (4.7%)
Benign polyp	56 (65.1%)	126 (84%)	$P<0.01$ (S)	182 (77.1%)
Other benign lesions				
Intrauterine adhesion	3 (3.5%)	3 (2.0%)	(NS)	6 (2.5%)
Uterine septum	0	7 (4.7%)		7 (3.0%)
Fibroid	2 (2.3%)	4 (2.7%)		6 (2.5%)
Endometritis	0	1 (0.7%)		1 (0.4%)
Hyperplasia	2 (2.3%)	2 (1.3%)	(NS)	4 (1.7%)
Carcinoma	17 (19.8%)	2 (1.3%)	$P<0.01$ (S)	19 (8.1%)

Table 4 Histological diagnosis between symptomatic (group 1) and asymptomatic (group 2) women (*NS* statistically not significant, *S* statistically significant)

Histology finding	Group 1 ($n=86$)	Group 2 ($n=150$)	Statistical significance	Total ($n=236$)
Atrophic endometrium	5 (5.8%)	3 (2.0%)	(NS)	8 (3.4%)
Benign polyp	55 (64%)	127 (84.7%)	$P<0.01$ (S)	182 (77.1%)
Other benign lesions	3 (3.5%)	8 (5.3%)	(NS)	11 (4.7%)
Hyperplasia	2 (2.3%)	4 (2.7%)	(NS)	6 (2.5%)
Endometrial carcinoma	20 (23.3%)	2 (1.3%)	$P<0.01$ (S)	22 (9.3%)
Cervical carcinoma	1 (1.1%)	0	(NS)	1 (0.4%)
No samples	0	6 (4%)	(NS)	6 (2.5%)

Table 5 Histological results related to endoscopic pictures of all women studied

Histological results	Endoscopic pictures				
	Without pathology	Benign polyp	Other benign lesions	Hyperplasia	Carcinoma
Atrophic endometrium[a] ($n=8$)	7	1	–	–	–
Benign polyp ($n=182$)	4	175	3	–	–
Other benign lesions ($n=11$)	–	1	10	–	–
Hyperplasia ($n=6$)	–	3	1	2	–
Carcinoma ($n=22$)	–	2	–	1	19
Cervical carcinoma ($n=1$)	–	–	–	1	–
No samples ($n=6$)	–	–	6	–	–
Total	11	182	20	4	19

[a]Atrophic endometrium

Table 5 compares histological results with the endoscopic pictures reported. Overall, the hysteroscopic report was correct in 213 (90.3%) cases. Of the total 182 cases of benign polyps in histology, 96.2% were referred at hysteroscopy (specificity of 87.0% and sensitivity of 96.2%).

In women with confirmed endometrial hyperplasia the hysteroscopy pointed to this diagnosis in only two of the six cases.

All suspected cases of endometrial carcinoma at hysteroscopy were confirmed, which showed a specificity of 100%. In three cases of endometrial carcinoma different findings were recorded on hysteroscopy (sensitivity of 86.4%): two were referred as benign polyps and one as hyperplasia.

In five cases the carcinoma was found inside the polyp. This accounted for 2.6% of malignancy inside polyps.

The only case of cervical carcinoma was misdiagnosed at hysteroscopy, being reported as endometrial hyperplasia.

There were no serious complications. We had only one case of uterine perforation without further consequences in a patient with intrauterine adhesions (0.04%).

See and treat in one session was achieved in 91% of cases of benign endometrial polyps.

Overall, 40 women had subsequent surgery under general anaesthesia (16.9%): four resectoscopies for endometrial ablation and 36 hysterectomies. Indications for hysterectomy were: 22 cases for endometrial carcinoma, seven cases for other gynaecological pathology, four cases for multiple or recurrent polyps and three cases for endometrial hyperplasia.1

Discussion

Globally, the population studied revealed the presence of at least one risk factor for endometrial carcinoma in 63.2%. The only risk factor significantly different between the two groups was overweight, present in a high proportion of women with metrorrhagia (49.2%).

Although endometrial thickness was the abnormality more diagnosed at ultrasound in both groups, reports differed in that polyps were more frequently referred in asymptomatic women (32.6% vs 11.6%, $P<0.01$). Ultrasound endometrial thickness was significantly higher in cases of carcinoma.

Abnormal ultrasound in these women corresponded mostly to intracavitary disease; absence of organic endometrial pathology was found in a minority of cases in both groups (9.3% vs 11.3%).

The pathology most commonly found in both groups was benign endometrial polyps, but its distribution was significantly different: 64% in symptomatic women and 84.7% in asymptomatic women. On the other hand, endometrial carcinoma was present in 23.3% and 1.3%, respectively, in the first and second group. Of the 22 women with endometrial carcinoma, 20 had metrorrhagia.

The number of cases with other benign pathology was similar in both groups, namely endometrial hyperplasia.

Hysteroscopy diagnosis revealed an agreement with histology in 90.3% of cases. Its specificity and sensitivity for diagnosis of benign polyps was 87.0% and 96.2%. For endometrial carcinoma, hysteroscopic specificity was 100% and sensitivity 86.4%.

See and treat in one session was achieved for the great majority of benign endometrial polyps. This high rate of excisional biopsies was possible due to the use of the bipolar Versapoint device, which enables easier and safer operating manoeuvres, allowing a shorter operating time.

Conclusions

Our results confirmed the good sensitivity and specificity for intracavitary pathology, high tolerability and safety of ambulatory hysteroscopy.

In this study postmenopausal women with metrorrhagia revealed a higher risk for endometrial carcinoma than did other references in the literature. These values make us strongly advise our menopausal patients with abnormal uterine bleeding to undergo diagnostic hysteroscopy complemented with biopsy.

Asymptomatic women with abnormal transvaginal ultrasound results revealed a low risk for endometrial

hyperplasia or carcinoma, although organic endometrial pathology was frequent. Ultrasound seems to be a good screening method in these women and could be complemented with Doppler studies or sono-hysterography to achieve a better case selection for hysteroscopy. Performing ambulatory hysteroscopy on these women offers the possibility of accurate diagnosis as well as treatment in the same session. In our setting, excision of benign polyps was achieved in the vast majority of cases, freeing women from serial ultrasound follow up and psychological burden.

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