Comparative study between the hysteroscopic and histological diagnosis of patients with abnormal uterine bleeding during menacme

Estudo comparativo entre o diagnóstico histeroscópico e o anatomopatológico de pacientes com sangramento uterino anormal, na menacme

Reginaldo Guedes Coelho Lopes¹, José Francisco Dória Ramos², Salete Yatabe³, Daniela Baptista Depes⁴, Rievani de Sousa Damião⁴, Melisandro Almeida de Lacerda⁴, Umberto Gazi Lippi⁷

ABSTRACT

Objective: The objective of this research was to evaluate the feasibility and the diagnostic properties of hysteroscopy in a population of women during menacme with the complaint of abnormal uterine bleeding, comparing endoscopic with histological findings. Methods: The study was retrospectively conducted in 314 outpatients submitted to hysteroscopy. Every woman was submitted to guided endometrial biopsy, using a 3 or 5mm-diameter Novak curette. The hysteroscopes used were of 3 or 5 mm caliber which image was reproduced in a screen by means of an endocamera. The results of hysteroscopic and histological exams were compared. Results: There were no abnormalities of the uterine cavity in 151 patients (48%). Submucous myoma was the most frequent alteration found in 45 women (14.3%). Malignancy was detected in nine patients, out of which seven had histological confirmation. Sensibility and specificity of hysteroscopy were respectively: a) 86.3% and 75.9% for abnormal uterine cavity; b) 100% and 99.4% for malignancy; and c) 57.7% and 88.5% for endometrial hyperplasia. Five patients (6.6%) were not submitted to hysteroscopy due to cervical stenosis. Two percent of the cases presented vagal reactions, such as sweating, nausea and dizziness, with short-time recovery. Conclusions: For higher sensitivity and specificity, diagnostic hysteroscopy should be complemented with histology of the endometrial biopsy. This procedure should be considered in the work-up of patients at menace with complaints of abnormal uterine bleeding.

Keywords: Hysteroscopy; Uterine hemorrhage/pathology; Comparative study
Hysterectomy alone does not offer high accuracy, although it has great advantage for yielding visually directed biopsy. However, conclusive results should always be associated to histological data.

OBJECTIVE
To evaluate the feasibility and the diagnostic properties of hysterectomy in a population of women during menacme with the complaint of abnormal uterine bleeding, comparing endoscopic with histological findings.

METHODS
In this retrospective study, 314 of 895 diagnostic hysteroscopies of patients during menacme were analyzed. Out of 895 patients, 314 complained of abnormal uterine bleeding. These women were analyzed according to the following parameters:

- results of diagnostic hysteroscopy;
- comparison with histological results;
- exam could not be performed;
- exam complications.

All examinations were performed in an outpatient’s clinic and only 16 patients (1.8%) required local anesthesia. Two types of hysteroscope were used: a 3mm diameter, 25º Wolff, and a 5mm diameter, 30º Storz. Uterine distension was performed with carbon gas and electronically controlled by a hysteroflator. A videocamera system was used to record several exams in VHS tapes.

Age range of the 895 patients is displayed in table 1. Different indications for hysteroscopy are shown in table 2. The uterine cavity was considered normal when the endometrium was proliferative, secreting, mixed, hypertrophic or atrophic. Endometrial characterization was done following Labastida criteria, except for endometrial hyperplasias. These were classified as simple when presenting the following characteristics: increased endometrial thickness; increased vascularization; increased glandular population and presence of polypoid endometrium. Endometrial hyperplasia was considered complex when there were necrotic areas, increased and tortuous vascularization; synechiae and scar reactions in necrotic areas; very irregular polypoid aspect; cystic formations in the pseudopolyps and hemorrhagic areas.

Endometrial biopsy was performed in all patients during guided diagnostic hysteroscopy using a 3 or 5mm Novak curette.

Statistical analyses included calculation of percentages, sensitivity and specificity and positive and negative predictive values.
Comparative study between the hysteroscopic and histological diagnosis of patients with abnormal uterine bleeding during menacme

endometrial polyp in 5 (3.3%), exuberant decidual reaction in 2 (1.3%), mixed endometrium in 2 (1.3%), complex endometrial hyperplasia with atypia in one (0.7%) and insufficient material in 3 (2.0%) patients.

For patients with hysteroscopic diagnosis of proliferative endometrium, the pathological examination showed: proliferative endometrium in 26 (55.3%), secreting endometrium in 16 (34%), endometrial polyp in 2 (4.2%), simple hyperplasia without atypia in one (2.1%), endometrial sample without atypia in one (2.1%) and insufficient material in one (2.1%).

In patients whose hysteroscopic diagnosis revealed an atrophic endometrium, the histological exam showed atrophic endometrium in 6 patients (40%), endometrial glands with no atypia in 5 (33.3%), proliferative endometrium in 2 (13.3%), secreting endometrium in one (6.7%) and insufficient material in one (6.7%).

In cases of hypotrophic endometrium, histology revealed proliferative endometrium in 5 patients (35.7%), secreting endometrium in 3 (21.4%), atrophic endometrium in 3 (21.4%), simple endometrial hyperplasia with no atypia in one (7.1%), endometrial polyp in one (7.1%), and endometrial sample with no atypia in one (7.1%).

In cases of mixed endometrium, the anatomopathological showed mixed endometrium in 2 patients (50%), complex endometrial hyperplasia with not atypia in one (25%) and insufficient material in one (25%).

Out of 45 patients with diagnosis of submucous myoma, 34 were removed by hysteroscopy. In 32 (94.1%), diagnosis of myoma was surgically and histologically confirmed. Other two patients (5.9%) had polyps. Of 45 patients, 12 were submitted to biopsy in areas outside the myoma, showing the following results: proliferative endometrium in 4, secreting endometrium in 3, atrophic in 2, polyp in one, mixed endometrium in one and endometrial glands with no atypia in one patient.

Out of five patients with the diagnosis of submucous myoma associated with simple endometrial hyperplasia, three were submitted to hysteroscopic myomectomy with histological confirmation. Regarding endometrial hyperplasia, three women had histological confirmation and the pathological result was proliferative endometrium in two patients.

In cases of hysteroscopically diagnosed simple endometrial hyperplasia, the histological results were as follows: proliferative endometrium in 10 patients (27.8%), simple glandular hyperplasia with no atypia in 7 (19.4%), polyp fragment in 7 (19.4%), insufficient material in 6 (16.7%), secreting endometrium in 5 (13.9%), and endometrium with pseudodecidual reaction in one (2.8%).

RESULTS

Out of 314 patients with abnormal uterine bleeding, hysteroscopic diagnoses included 151 (48.1%) normal uterine cavities; 45 (14.3%) submucous myomata; 29 (12.4%) endometrial hyperplasias; 35 (11.1%) endometrial or cervical polyps; 9 (2.9%) endometrial adenocarcinomas; 5 (1.6%) submucous myoma and endometrial hyperplasia; 4 (1.3%) cases of endometrial polyps and endometrial hyperplasias; 21 (6.7%) cases with other diagnoses, such as synchia, endometritis, intramural myoma and uterine septum. In five patients (1.6%) the exam could not be done for technical reasons. In case of concomitant diseases, such as submucous myoma and intramural myoma, hysteroscopic diagnosis was submucous myoma.

When diagnosis was abnormal uterine cavity, the histological exam revealed secreting endometrium in 66 (43.7%) patients, proliferative endometrium in 47 (31.1%), endometrial sample with no atypia in 10 (6.6%), atrophic endometrium in 9 (6.0%), simple endometrial hyperplasia with no atypia in 6 (4.0%),

Table 1. Age group of patients

<table>
<thead>
<tr>
<th>Age</th>
<th>N</th>
<th>RF%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Up to 20 years</td>
<td>22</td>
<td>2.5</td>
</tr>
<tr>
<td>21 - 25 years</td>
<td>14</td>
<td>1.6</td>
</tr>
<tr>
<td>26 - 30 years</td>
<td>132</td>
<td>14.7</td>
</tr>
<tr>
<td>31 - 35 years</td>
<td>191</td>
<td>21.3</td>
</tr>
<tr>
<td>36 - 40 years</td>
<td>154</td>
<td>17.2</td>
</tr>
<tr>
<td>41 - 45 years</td>
<td>186</td>
<td>20.8</td>
</tr>
<tr>
<td>46 - 50 years</td>
<td>140</td>
<td>15.6</td>
</tr>
<tr>
<td>Over 50 years</td>
<td>56</td>
<td>6.3</td>
</tr>
<tr>
<td>Total</td>
<td>895</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Key:
N = absolute number
RF% = percent relative frequency

Table 2. Indications for diagnostic hysteroscopy

<table>
<thead>
<tr>
<th>Indications</th>
<th>N</th>
<th>RF%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abnormal uterine bleeding</td>
<td>314</td>
<td>35.1</td>
</tr>
<tr>
<td>Infertility</td>
<td>189</td>
<td>21.1</td>
</tr>
<tr>
<td>Alterations on ultrasound</td>
<td>159</td>
<td>17.8</td>
</tr>
<tr>
<td>Habitual abortion</td>
<td>51</td>
<td>5.7</td>
</tr>
<tr>
<td>Endometrial hyperplasia control</td>
<td>34</td>
<td>3.8</td>
</tr>
<tr>
<td>Missed IUD</td>
<td>33</td>
<td>3.7</td>
</tr>
<tr>
<td>Alterations on hysterosonography</td>
<td>29</td>
<td>3.2</td>
</tr>
<tr>
<td>Postoperative control</td>
<td>27</td>
<td>3.0</td>
</tr>
<tr>
<td>Hyperplasia or polyp on gynecological CT</td>
<td>22</td>
<td>2.5</td>
</tr>
<tr>
<td>Secondary amenorrhhea</td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>Cervical polyp</td>
<td>10</td>
<td>1.1</td>
</tr>
<tr>
<td>Postcoital bleeding</td>
<td>9</td>
<td>1.0</td>
</tr>
<tr>
<td>Other indications</td>
<td>8</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>895</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Key:
N = Absolute number
RF% = percent relative frequency
In case of hysteroscopically diagnosed complex endometrial hyperplasia, the histological exam revealed complex hyperplasia with atypia in one patient (33.3%), complex hyperplasia without atypia in one (33.3%) and decidual endometrial fragment in one (33.3%).

As to endometrial polyps, the histological exam of endometrial biopsies revealed polyp in 21 patients (60.0%), normal endometrial glands in 4 (11.4%), simple glandular hyperplasia without atypia in 3 (8.6%), proliferative endometrium in 2 (5.7%), secreting endometrium in 2 (5.7%), complex glandular hyperplasia without atypia in one (2.9%) and insufficient material in 2 (5.7%). Two cervical polyps were pathologically confirmed. Out of 35 patients, 22 were submitted to polypectomy with pathological confirmation of polyp.

Out of four cases of endometrial polyp with simple endometrial hyperplasia, three had histological confirmation. The remaining case showed proliferative endometrium.

When hysteroscopic diagnosis was endometrial adenocarcinoma, the histological exam confirmed this finding in 6 patients (66.7%), complex glandular hyperplasia with atypia in one (11.1%), simple glandular hyperplasia without atypia in one (11.1%), and endometrial fragment with atypia in one (11.1%).

Among 48 patients with hysteroscopic diagnosis of endometrial hyperplasia, 36 had simple hyperplasia, 3 had complex hyperplasia, 5 had submucous myoma and hyperplasia, and four had endometrial polyp and hyperplasia. Histological confirmation of hyperplasia occurred in 15 patients, not in 33.

Out of 266 patients with no diagnosis of hyperplasia, 255 had pathological confirmation, while 11 cases presented a histological diagnosis of this affection. Thus, sensitivity for endometrial hyperplasia was 57.7%, specificity was 88.5%, positive predictive value, 32.0% and negative predictive value, 96.0%.

Out of the remaining 21 patients, two were hysteroscopically diagnosed as endometritis, with no anatomopathological confirmation (proliferative endometrium). Endometrial biopsy was not performed in other 19 patients (9 with intramural myoma, 7 with uterine synecchia and 3 with uterine septum).

The difference from 314 to 280 patients is due to 21 cases of synecchia, endometritis, intramural myoma and uterine septum, 5 with technical difficulties and 13 with submucous myoma who were not submitted to surgery. They all sum up to 319 cases; however those with submucous myoma and endometrial hyperplasia were listed twice to distinguish one diagnosis from the other. It is important to emphasize that out of five patients with submucous myoma and hyperplasia, only three were submitted to hysteroscopic surgery.

Malignancy was diagnosed in 9 patients, out of which 7 had histological confirmation. Three-hundred and five patients revealed no malignancy in hysterotomy or in pathological exam. Thus, regarding histopathological benignity or malignancy of this affection, the sensitivity of hysteroscopy was 100% and specificity was 99.3%. Positive predictive value was of 77.8% and negative predictive value, 100%.

The difference from 314 (total number of patients with complaint of abnormal uterine bleeding) to 275 patients is due to the following: 21 with synecchia, endometritis, intramural myoma and uterine septum, 13 with submucous myoma not submitted to surgery, and five due to technical difficulties. Out of 151 patients with normal diagnosis, 13 (8.6%) presented inconclusive endometrial biopsy, 126 (83.4%) had a histological exam with no abnormality, and 12 (7.9%) revealed some abnormality. Out of these 12 patients, 6 presented simple endometrial hyperplasia with no atypia, 5 had polyp and one had complex hyperplasia without atypia. From 124 abnormal hysteroscopic findings, 8 (6.4%) presented inconclusive endometrial biopsy; 40 (32.2%) presented histological exam with no abnormalities and 76 patients (61.2%) presented some irregular conditions. Sensitivity of hysteroscopy for normal or altered uterine cavity was 86.4%, specificity, 75.9%, positive predictive value was 65.5% and negative predictive value, 91.3%.

In 5 patients (1.6%), the diagnostic hysteroscopy could not be performed due to difficulty to introduce the device into the cervical canal.

Regarding complications, mild vagal reactions were observed such as sudoresis, paleness and nausea in 2% of patients, with prompt recovery after some minutes of rest.

DISCUSSION
Fraser’s(10) 300 patients with abnormal uterine bleeding had the following hysteroscopic diagnoses: normal uterine cavity in a 111 patients (37%) and submucous myoma in 72 (24%), and these results differ from those presented in the present study. This difference may be due to populations of distinct studies.

Agreement between hysteroscopic and histological results was of 56.1%. According to Pearson’s parametrical analysis and Spearman non-parametrical analysis, this agreement presented similar distribution among the several diagnoses. However, it is important to emphasize that 14 patients presented a hysteroscopic diagnosis of hypotrophic endometrium, which differs from their histological diagnosis. In fact, this is a matter of nomenclature, since the term hypotrophic characterizes a uterine cavity with areas of endometrial...
proliferation and atrophy. The anatomopathological diagnosis will depend on the biopsied region. Nevertheless, the hysteroscopic diagnosis of hypotrophic endometrium should be revised and a criterion for characterization of this type of endometrium must be clearly established along with a pathologist.

Caserta et al. (11) evaluated 222 patients with abnormal uterine bleeding through diagnostic hysteroscopy and endometrial biopsy. Diagnoses agreement was of 85%. Pasrija et al. (12) evaluated 58 patients with abnormal uterine bleeding who were all submitted to diagnostic hysteroscopy with endometrial biopsy and hysterosonography. According to the authors, both methods, when compared with the histological result of the endometrial biopsies, present similar accuracy.

Diagnostic consistency between hysteroscopy and the anatomopathological exam is higher in postmenopausal than in menacme women (13).

The exam was not performed in five patients (1.6%) for the hysteroscope could not go through the cervical canal due to patient’s complaint of pain or to stenosis.

In the present series, there were no severe complications and only 2.0% of patients had mild vagal reactions such as sudoresis, paleness and nausea with prompt recovery after a few minutes. In a study by Agostini et al. (14), in 2070 patients submitted to outpatient diagnostic hysteroscopy without analgesia, 15 (0.7%) had vagal reaction. For the authors, the reaction is greater when a rigid hysteroscope is used as compared to a flexible device. Complications occur more frequently in surgical than in the diagnostic hysteroscopy (15). However, they may also occur in the diagnostic approach, if contraindications are ignored, the equipment is not appropriate and patients are not adequately selected (15). Hysteroscopy performed with liquid for distension, and preceded by vaginoscopy without the use of speculum, strongly reduces the occurrence of vagal reaction (16). Morphone-based medications should not be adopted because they do not reduce exam discomfort and may cause adverse effects such as nausea and vomiting (17).

CONCLUSIONS
Diagnostic hysteroscopy with complementary histological exam of endometrial biopsies of patients during menacme presenting abnormal uterine bleeding proved to be a high sensitivity and specificity approach. It is a feasible exam that can be performed in most women at outpatient’s clinics, and provides low complication rates. It is recommended that gynecologists include this procedure to their diagnostic armamentarium.

REFERENCES