Study of Patients Diagnosed with Malignancy or Premalignancy After Hysteroscopic Endometrial Polyp Resection

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Abstract

Objective: This study aimed to investigate the frequency and characteristic of patients who was pathologically diagnosed with malignancy or premalignancy in women undergoing hysteroscopic endometrial polypectomy for endometrial polyps.

Method: We retrospectively investigated 115 patients who were diagnosed as endometrial polyp by transvaginal ultrasonography or sonohysterography and underwent hysteroscopic surgery at our hospital in two years. All surgical specimens were examined histopathologically. Characteristics of the patients including age, size of the largest polyp, desire to bear children, presence of abnormal uterine bleeding and the result of preoperative endometrial cytology were analyzed.

Results: Regarding the age, 49 (42.6%) of the EMP patients were in their 30s, which was most common and 65 patients (56.5%) desired to bear children. The polyp size was evaluated before surgery in 105 patients and 65 patients (56.5%) were medium size (1 cm or larger but below 2 cm). Abnormal uterine bleeding was observed in 46, accounting for 40.0% of all EMP patients. Seven of 115 patients were diagnosed premalignant (3 patients) or malignant (4 patients) on postoperative histopathological examination and 4 of them (premalignant: 3, malignant: 1) desired to bear children. One of the four patients who was diagnosed with malignancy, was a 35 year old nulligravida wishing to bear children with the chief complaint of abnormal uterine bleeding. Endometrial cytology was negative for malignancy, but the very small specimen was subsequently diagnosed as endometrioid adenocarcinoma on pathological examination.

Conclusion: We suggest that when masses are found inside the uterine cavity by transvaginal sonography, it is important to carefully examine under sonohysterography and perform pathological examination and treatment using hysteroscopy. Masses should also be examined even if the endometrial cytology is negative for malignancy or the tumor is small, regardless of whether the woman exhibits abnormal uterine bleeding.

Keywords: Endometrial polyp; Malignancy; Premalignancy; Sonohysterography; Hysteroscopic surgery

Introduction

Endometrial polyp (EMP) is one of the most common underlying disease of abnormal uterine bleeding (AUB) in both premenopausal and postmenopausal women [1,2]. It is hyperplastic overgrowths of endometrial glands and stroma that form a projection from the surface of the endometrium. It may also be asymptomatic. The great majority of EMP are benign, but malignancy occurs in some women [1,3-5].

Ultrasonography enabling imaging of lesions is necessary for diagnosing EMP. Transvaginal ultrasonography devices are essential for gynecological outpatient clinical practice and the spread of this apparatus has enabled the diagnosis of uterine and intrauterine lesions. In addition, infusion of saline into the uterus to enhance the contrast between intrauterine lesions and liquid facilitates clear visualization on transvaginal ultrasonography (sonohysterography: SHG), increasing the accuracy of EMP diagnosis. EMP develops in patients of a wide range of ages, but is generally detected in women aged 40-49 years, accounting for 20% of asymptomatic premenopausal women and 40% of postmenopausal women [6-9]. The frequencies of premalignant and malignant cases are not as high in premenopausal women compared with in postmenopausal women, but considering later treatment, rapid and accurate diagnosis, especially in women of reproductive age, is needed [1].

In this study, patients who were diagnosed as EMP preoperatively and underwent hysteroscopic surgery at our hospital in two years were examined. We also report a young woman who was negative for malignancy on prior endometrial cytology, but the pathology after hysteroscopic surgery was endometrioid carcinoma.

Materials and Methods

Hysteroscopic surgeries performed between July 2015 and June 2017 at our hospital were examined, involving 115 patients who were diagnosed with EMP by outpatient transvaginal ultrasonography or SHG. SHG was performed at the outpatient clinic, in which a 6-Fr catheter without a balloon (ATOM multipurpose tube) was inserted into the uterus without anesthesia and approximately 20 ml of saline was infused through it. Hysteroscopic surgery was selected by request of the patient. Regarding the surgical procedure, a 3 mm Lamicel (material: Polyvinyl alcohol, Matsuyoshi & Co., Ltd.) was inserted into the cervical canal overnight from the day before surgery to dilate the cervical canal. Hysteroscopic surgery was performed under general
anesthesia and the cervical canal was dilated using Hegar cervical dilators up to No. 13. Polyectomy was performed using a hysteroscopy device by Olympus and a monopolar electrode. For the perfusate to dilate the uterine lumen, hypotonic 3% D-sorbitol solution (Uromatic S®, Baxter) was used. The frequencies of EMP by age, the presence or absence of hemorrhage and desire to bear children were evaluated. The EMP sizes with a maximum length smaller than 1 cm, 1 cm or larger but below 2 cm and 2 cm or larger were designated as S, M, and L, respectively.

On preoperative examination, the rates of performing SHG and endometrial cytology were analyzed and pathological examination of the sample was performed after surgery as a rule. All excised samples were histologically examined.

### Results

One hundred fifteen patients underwent hysteroscopic surgery at our hospital for the period of two years. The polyp size was evaluated before surgery in 105 patients and the sizes were S, M and L in 15 (13.0%), 65 (56.5%) and 25 (21.7%), respectively. Regarding the age, 49 (42.6%) of the EMP patients were in their 30s, being the most frequent and 65 patients (56.5%) desired to bear children, exceeding more than half of the EMP patients. AUB was observed in 46, accounting for 40.0% of all EMP patients. On postoperative pathological examination, Atypical endometrial hyperplasia (premalignancy) and endometrial adenocarcinoma (malignancy) was found in 3 (2.6%) and 4 (3.5%) patients respectively and 4 of them (premalignancy: 2, malignancy: 2) wished to bear children, accounting for 6.2% of the 65 patients with a desire to bear children. Endometrial cytology prior to surgery was negative for malignancy or not performed and hysteroscopic surgery was performed without predicting premalignancy or malignancy in patients wishing to bear children (Tables 1–3).

Out of the four patients who was diagnosed with malignancy, one was a woman wishing to bear children. She was a 35 year old nulligravida and visited our hospital for the chief complaint of AUB. As endometrial cytology was negative for malignancy, SHG was performed. A relatively small EMP-like mass (12.0 × 5.9 mm) was observed. Hysteroscopic surgery was selected by request of the patient. No polypoid mass was present at the time of initial intrauterine observation, suggesting that the EMP was easily detached. No abnormalities were noted in the intrauterine endometrium at first, but a very small unnatural protrusion was present upon close observation and surgery was completed after collecting this tissue. The specimen was subsequently diagnosed as endometrioid adenocarcinoma on pathological examination and medroxyprogesterone (Hyson H®) was administered as conservative treatment per the patient’s request (Table 3).

### Discussion

EMP has many unknown points regarding their development and disappearance. Several molecular mechanisms have been proposed to play a role in the development of EMP including endometrial aromatase overexpression and gene mutations [10,11]. On the other hand, there are some studies reporting the occurrence of spontaneous regression of small polyps and suggesting to observing small EMP for a few months before subjecting the patient to an operative procedure [12-14].

Most of EMP are benign, but malignancy occurs in some women. In the 35-year-old patient who was diagnosed with endometrioid adenocarcinoma, the target polyp was detached by cervical canal dilation using Hegar cervical dilators applied at the initiation of hysteroscopic surgery. EMP size was M (maximum diameter: 10-20 mm) but relatively small in the present patient (12.0 × 5.9 mm) and it was also M in 65 (56.5%) of the 105 EMP patients, demonstrating that it was the most frequently observed size. The lesion was premalignant or malignant on postoperative pathological examination in 7 (6.1%) of the 115 EMP patients, which was not negligible. Lieng et al. stated that 0.2–23.8% and 0–12.9% of EMP were premalignant and malignant, respectively [2]. A high risk of malignancy of large polyps has been reported, but the size was not a characteristic of malignant EMP in other studies [3,4,15,16]. In our study, not all polyps were large and EMP in the present patient was relatively small. The pathology may be malignant even though EMP is easily detached or not so large.

### Table 1: Size of the largest polyp (n=115).

<table>
<thead>
<tr>
<th>Size</th>
<th>No. of patients</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>S: 1 cm&gt;</td>
<td>15</td>
<td>13.0</td>
</tr>
<tr>
<td>M: 1 cm–2cm</td>
<td>65</td>
<td>56.5</td>
</tr>
<tr>
<td>L: 2 cm</td>
<td>25</td>
<td>21.7</td>
</tr>
<tr>
<td>Unknown</td>
<td>10</td>
<td>8.7</td>
</tr>
</tbody>
</table>

### Table 2: Characteristic of the patients (n=115).

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>AUB</th>
<th>SHG</th>
<th>Desire to bear child</th>
<th>Size of largest polyp</th>
<th>Number of Polyps</th>
<th>EM Cytology</th>
<th>Pathology</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>54</td>
<td>(+)</td>
<td>(–)</td>
<td>(–)</td>
<td>L</td>
<td>1</td>
<td>Illia</td>
<td>Endometrioid adenocarcinoma (G1)</td>
</tr>
<tr>
<td>2</td>
<td>35</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
<td>M</td>
<td>1</td>
<td>–</td>
<td>Atypical endometrial hyperplasia</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>(+)</td>
<td>(–)</td>
<td>(–)</td>
<td>Unknown</td>
<td>1</td>
<td>Illia</td>
<td>Endometrioid adenocarcinoma (G1)</td>
</tr>
<tr>
<td>4</td>
<td>32</td>
<td>(–)</td>
<td>(–)</td>
<td>(+)</td>
<td>M</td>
<td>1</td>
<td>–</td>
<td>Atypical endometrial hyperplasia</td>
</tr>
<tr>
<td>5</td>
<td>33</td>
<td>(–)</td>
<td>(+)</td>
<td>(+)</td>
<td>M</td>
<td>3</td>
<td>–</td>
<td>Endometrioid adenocarcinoma (G1)</td>
</tr>
<tr>
<td>6</td>
<td>73</td>
<td>(+)</td>
<td>(–)</td>
<td>(–)</td>
<td>Unknown</td>
<td>1</td>
<td>Illia</td>
<td>Endometrioid adenocarcinoma (G1–G2)</td>
</tr>
<tr>
<td>7</td>
<td>35</td>
<td>(+)</td>
<td>(+)</td>
<td>(+)</td>
<td>M</td>
<td>2</td>
<td>Negative</td>
<td>Endometrioid adenocarcinoma (G2)</td>
</tr>
</tbody>
</table>

*AUB: Abnormal Uterine Bleeding; SHG: Sonohysterography; EM: Endometrial
*The present case is patient 7

Table 3: Clinical and pathological characteristics of premalignant and malignant patients.
as observed in this patient. Although AUB was noted in the present patient, its association with malignancy was not clear in some studies. It has been suggested that all EMP should be removed because premalignant and malignant lesions are present at a specific rate. We agree with this suggestion. The indication for hysteroscopic excision should be based on the presence of EMP regardless of the size, rather than the presence of hemorrhagic symptoms.

Endometrial cytology was performed in 4 of 7 patients (57.2%) who were diagnosed with premalignancy or malignancy. Three of them were class III (a premalignancy: 1, malignancy: 2). Furthermore, as the present patient’s case was negative for malignancy, all EMP should be included in the surgical indication. It also suggested the importance of tissue sampling by hysteroscopic surgery and its pathological examination. Endometrial cytology is superior in evaluation of endometrial malignancy and the present study clarified the necessity of prior endometrial cytology.

The present patient was relatively young (35 years old) and at reproductive age. Fertility should always be taken into consideration for this generation. The absence of an influence of small EMP on intracytoplasmic sperm injection (ICSI) has been reported, but an increase in the pregnancy rate by polyp removal has also been reported. Many clinicians agree for polyp removal before initiation of reproductive treatment.

Considering malignancy and fertility in young women at reproductive age, EMP should be excised. Hysteroscopic surgery was selected in the present patient, which led to relatively early discovery of malignancy and conservative treatment.

SHG used in the outpatient examination created the opportunity to decide on early hysteroscopic surgery. It has been reported that SHG was highly sensitive and specific for detecting submucous uterine myoma compared with hysteroscopy, but not for detecting EMP and endometrial hyperplasia. The rate of failure using SHG was high in postmenopausal females, but it is less painful than hysteroscopy. In another study, no patient complained of pain on SHG but 25% complained on hysteroscopy. SHG is a sufficiently applicable, safe and low-cost method for detecting EMP in young women and when EMP is suspected, SHG may substitute for diagnostic hysteroscopy. The catheter size used in SHG was ‘8-Fr’ in reports, but we usually use a 6-Fr catheter without a balloon, for which anesthesia is unnecessary and no patient complained of pain. In addition, it is cheaper, safer, less invasive and more easily operable compared with diagnostic hysteroscopy. Furthermore, many studies have reported the usefulness of SHG for diagnosing EMP.

Conclusion

Malignancy and fertility are important subjects for young women with EMP at reproductive age. Regardless of symptoms, such as uterine bleeding, size of EMP and cytology findings, resection of endometrial polyps through either approach is necessary and SHG may be useful to decide on its indication.

References


