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Original article

A novel hysteroscopic pattern of microvascular architecture in uterine endometrioid adenocarcinoma: Initial clinical experience

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ABSTRACT

Objective: To establish a specific hysteroscopic pattern—the “glomerular pattern”—to diagnose high-grade endometrial cancer and evaluate the accuracy rate of the pattern, based on final histology.**Materials and methods:** From 2008 to 2011, 30 patients for whom pathology indicated endometrial cancer, based on the office hysteroscopy study, were included in the study. We reviewed the hysteroscopic pictures to determine the specific hysteroscopic pattern in high-grade endometrial cancer.**Results:** Thirty patients who had endometrial cancer under hysteroscopy were included to the study. The study population had a mean age of 49.9 years. All patients had abnormal uterine bleeding. Office hysteroscopy was completed in all patients without anesthesia. The findings of the office hysteroscopy suggested endometrial cancer in 30 patients. Fifteen patients had the specific hysteroscopic pattern, called the “glomerular pattern.” All 15 patients had grade 2 or grade 3 disease. Among patients who had a glomerular pattern, 53.3% (8/15) of patients had grade 2 endometrioid adenocarcinoma and 46.7% (7/15) patients had grade 3 endometrioid adenocarcinoma. Among the nonglomerular pattern group patients, 66.7% (10/15) patients had grade 1 endometrioid adenocarcinoma, 26.7% (4/15) patients had grade 2 endometrioid adenocarcinoma and 6.7% (1/15) patients had grade 3 endometrioid adenocarcinoma.**Conclusion:** Our conclusion is that patients with the glomerular pattern have a high percentage of moderate or high-grade endometrioid adenocarcinoma. The glomerular sign may provide information on preoperative pathohistology and decrease the possibility of histology upgrade after hysterectomy. However, large series, prospective, and comparison studies are still needed.

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Introduction

Hysteroscopic examination is a gold standard tool with high sensitivity and high specificity (94.2% and 88.8%, respectively) for evaluating endometrial hyperplasia and endometrial cancer, especially type I endometrioid adenocarcinoma.¹ In the past, several hysteroscopic features of endometrial hyperplasia or cancer have been established such as an uneven surface, irregularity of the

endometrial glands, a polypoid pattern, a papillomatous pattern, and abnormal endometrial vessels.^{1–3} However, very few studies have focused on using a specific pattern or picture in making a diagnosis or have discussed the accuracy of this method. By contrast, gastrointestinal tract studies have already determined a specific microvascular pattern with magnified endoscopy as a recognized feature in early stage gastric cancer.⁴ Nakayoshi et al⁴ described a “corkscrew pattern” under magnified endoscopy combined with narrow band imaging (NBI) to identify undifferentiated adenocarcinoma. Nakayoshi et al⁴ discovered that this pattern exists in 85.7% of patients with undifferentiated adenocarcinoma. To date, no specific patterns or similar references exist in the gynecologic hysteroscopy field. The purpose of our study was to investigate a precise morphological pattern in hysteroscopy to

Conflicts of interest: All authors declare no conflicts of interest.

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diagnose high-grade endometrial cancer, based on final hysterectomy histology.

Materials and methods

Patients

We reviewed 3043 cases of office hysteroscopy from 2008 to 2011, which were all performed by author H. Su. Patients who were diagnosed with endometrioid adenocarcinoma by endometrial biopsy or by hysterectomy pathology were included in the study. Patients excluded were those who had undergone endometrial biopsy or curettage for uterine bleeding within 1 month of office hysteroscopy or who had endometritis, pelvic inflammatory disease, or type II endometrial cancer (nonendometrioid) on final hysterectomy pathology.

Hysteroscopy procedure

Office hysteroscopy study

All patients were placed in the Trendelenburg position without anesthesia. All patients underwent office hysteroscopy with a 3.1 mm flexible hysteroscope (Olympus, Tokyo, Japan) with liquid medium distension under white light without NBI magnification. We reviewed office hysteroscopic pictures and videos, and recorded the endometrial characteristics and patterns for all patients.

Hysteroscopy classifications

Endometrial cancer

Patients who met the following hysteroscopic findings in this study were suspected of having endometrial cancer: a polypoid endometrium with a white or gray color shift; absence of endometrial glands; a cerebroid pattern (Figure 1); and the specific pattern, the “glomerular pattern.”

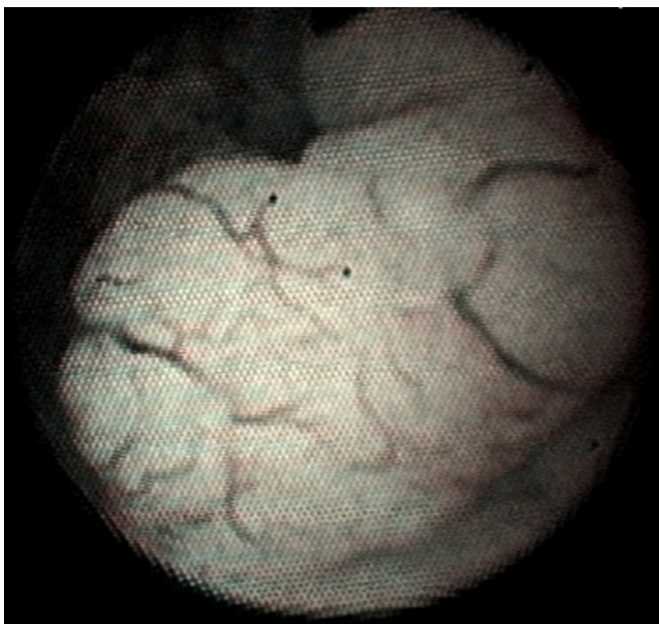


Figure 1. The cerebroid pattern. Polypoid endometrium with white or gray color shift and the absence of endometrial glands.

Definition of glomerular pattern

The glomerular pattern consists of a polypoid endometrium with a papillary-like feature, and most importantly, the endometrium has an abnormal neovascularization feature with intertwined neovascular vessels coated by a thin layer of endometrial tissue (Figure 2). To us, this vascular finding appeared similar to the glomerular capillary system of the kidney; thus, we named it the “glomerular pattern.” We hypothesized that the hysteroscopic finding of the glomerular pattern is highly suggestive of high-grade endometrial cancer.

Data analysis

The patients' demographics, hysteroscopic patterns, glomerular pattern, and pathologic reports were recorded. All photography, videos, and pathology results were reviewed. Patients who were suspected of having endometrial cancer were categorized into two groups: Group 1 comprised patients with the glomerular pattern and Group 2 comprised patients without the glomerular pattern.

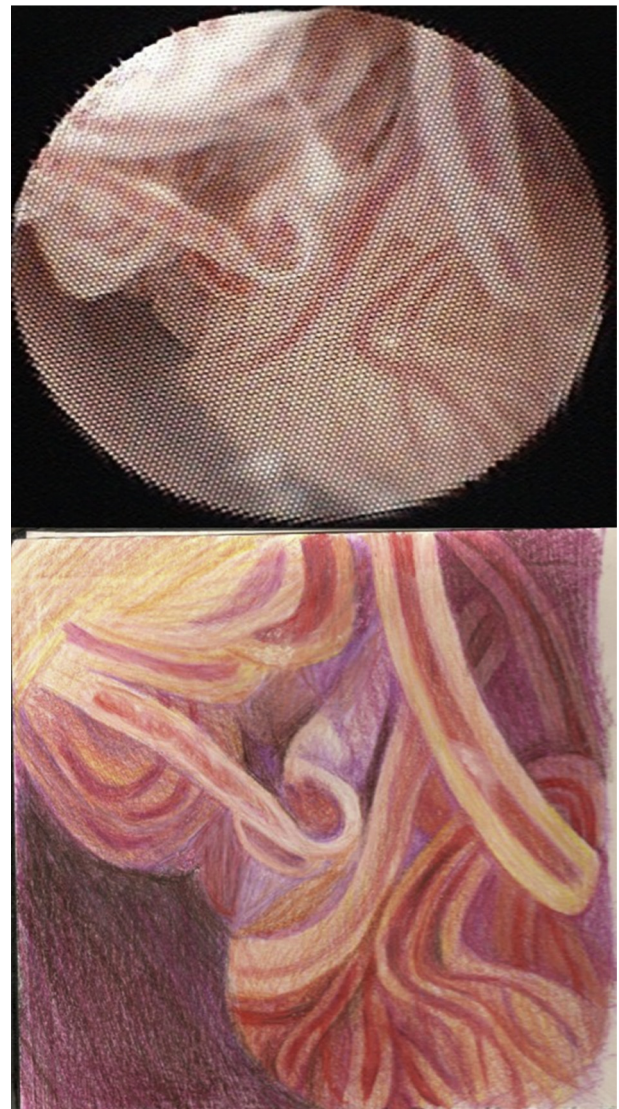


Figure 2. The glomerular pattern. Intertwined neovascular vessels are coated by a thin layer of endometrial tissue.

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