RESEARCH COMMUNICATION

Preoperative and Postoperative Agreement of Histopathological Findings in Cases of Endometrial Hyperplasia

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Abstract

Objective: To determine agreement of preoperative and postoperative histopathology of endometrial hyperplasia (EH). Materials and Methods: Histopathology of specimens obtained by curettage and hysterectomy within 1 year was retrospectively compared by a skilled gynecological pathologist. Patients who received hormone therapy were excluded. Results: Of 79 women with a preoperative diagnosis of EH, only 32 were diagnosed as EH from hysterectomy specimens. There was no endometrial cancer. The agreement between preoperative and postoperative histology did not achieve statistical significance (Kappa 0.011). Postoperative histopathology was more severe than preoperative diagnosis in 5 (6.3%) patients, including 3 preoperative diagnoses of simple hyperplasia without atypia, 1 simple hyperplasia with atypia, and 1 complex hyperplasia without atypia. Conclusions: For EH diagnosed by curettage, we can be sure of the diagnosis. However, 6.3% had more severe histology from hysterectomy specimens. Thus, repeated curettage or other investigations should be reconsidered in women with recurrent bleeding.

Key Words: Endometrial hyperplasia - curettage - hysterectomy

Asian Pacific J Cancer Prev, **9**, 89-91

Introduction

Adenocarcinoma of the endometrium is one of the most common gynecologic malignancies in the Thailand. The most common histological type, endometrioid adenocarcinoma, accounts for 75-80% of diagnoses and commonly is associated with long-term, unopposed estrogenic stimulation(Cavanagh et al., 1999).This condition also leads to endometrial hyperplasia.

According to the World Health Organization endometrial hyperplasia can be classified based on architectural complexity into simple or complex (adenomatous) hyperplasia and on cytological (nuclear) features as hyperplasia or atypical hyperplasia(Silverberg et al., 2003). The majority of endometrioid neoplastic lesions of the endometrium follow a continuum of histologically distinguishable hyperplastic lesions. This covers a spectrum ranging from endometrial hyperplasia without atypia, to endometrial hyperplasia with atypia, to well differentiated endometrioid adenocarcinoma (Silverberg, 1992; Mutter, 2000). Patients with these conditions have abnormal uterine bleeding as a presenting symptom in common (Montgomery et al., 2004). Thus, to differentiate these conditions, endometrial sampling for histological diagnosis is crucial. Several methods have been proposed to obtain endometrial tissue (O'Connell et al., 1998;Spicer et al., 2006). One of these is uterine curettage which remains a preferred sampling method in Thailand.

Surgical management is an acceptable treatment for both endometrial hyperplasia and carcinoma; however, the extent of the surgery depends on the diagnosis. For this reason, agreement or correlation between pre and postoperative diagnosis of endometrial pathology is of importance. Based on literature review, the magnitude of agreement has considerably varied (Epstein et al., 2001;Gundem et al., 2003;Saygili, 2006). This may be explained by differences in clinical setting and research methodology among the studies.

To ensure patient safety, we decided to ascertain the agreement of pre-and postoperative histopathology of endometrial hyperplasia at Srinagarind Hospital.

Materials and Methods

A total of 79 patients with endometrial hyperplasia detected by endometrial curettage were treated by hysterectomy within a year of diagnosis, without hormonal treatment. We planned a retrospective comparison of the histopathological diagnosis found on curettage and the hysterectomy specimens. The review of the histopathological evaluation was performed by one

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Table 1. Demographic Data (N=79 subjects)

	Min	Max	Mean	Median	SD
Age (years)	35	76	48.2	48.0	6.53
BMI (kg/m2)	18	29	25.9	25.3	4.05
Duration of symptoms (days)	2	720	81.9	60	152.57
Duration from curettage to hysterectomy (days)	7	285	74.1	81	73.00

skilled gynecologic pathologist. All of the patients had been admitted to Srinagarind Hospital, Khon Kaen University, between January 1995 and December 2005.The classification of endometrial hyperplasia was according to the 2003 WHO classification.

A normal statistical normal distribution was determined in a pilot study done at Srinagarind Hospital, Khon Kaen University, between January and December, 2004, using the Stata software. A p-value >0.05 was indicated a normal distribution in the Kappa analysis. The correlation of variation was assessed using Kappa analysis while the Chi-square test was used to compare data (p-value <0.05 indicated statistical significance).

Results

The study had a total of 79 subjects, comprising 71 (89.9%) pre- and peri-menopausal and 8(10.1%) postmenopausal women between 35 and 76 years of age with an average BMI of 25.9 kg/ m2 (18-29 kg/m2) (Table1). They had no underlying disease 62(78.5%), 3 with DM (3.8%), 7 with HT (8.9%), and 7 others (8.9 %) had endometrial hyperplasia on histopathological findings from endometrial curettage specimens taken for evaluation of abnormal uterine bleeding. Their menstrual history was normal in 66 (83.5%) and menorrhagia in 13 (16.5%).

In this study showed the behavior of 79 untreated endometrial hyperplasia from curettage within 1 year without hormonal treatment. The histopathological findings in hysterectomy specimens showed 32 (40.5%) patients with endometrial hyperplasia and 47 (59.49%) with various histopathological findings. Thus, comparing the curettage and hysterectomy specimens 5(6.3%) were worse and no evidence of endometrial carcinoma found on hysterectomy specimens. The agreement between histopathological from preoperative (curettage) and postoperative (hysterectomy) specimens did not achieve statistical significance (Kappa 0.011) (Table 2).

Table 2. Agreement of Pre-and Postoperative Histopathology (N=79 subjects)

Curettage / Hysterectomy	Simple	Simple + atypia	Complex	Complex + atypia	Agreement N	%
Proliferative	13	0	7	2		
Secretory	7	0	2	0		
Basal	6	1	6	0		
Atrophic	2	0	1	0	57	72.2
Simple	16	1	5	3		
Simple + atypia	1	0	0	0		
Complex	1	1	0	1		
Complex + atypia	1	0	1	1	17	21.5
CA endometrium	0	0	0	0	5	6.3
Total	47	3	22	7	79	100

The histopathological findings from endometrial curettage showed 47 patients with simple hyperplasia without atypia, 3 with simple hyperplasia with atypia, 22 with complex hyperplasia without atypia, and 7 with complex hyperplasia with atypia.

Among the 47 patients found to have simple hyperplasia without atypia on curettage specimens, 16 had simple hyperplasia without atypia, 1 simple hyperplasia with atypia, 1 complex hyperplasia without atypia, 1 complex hyperplasia with atypia and 28 other benign histopathological findings (i.e., proliferative endometrium 13, secretory endometrium 7, basal endometrium 6, atrophic endometrium 2) found on hysterectomy specimens. Thus, comparing the curettage and hysterectomy specimens 16/47(34.0%) were the same, 28/47 (59.6%) were improved, 3/47(6.4%) were worse.

Among 3 patients with simple hyperplasia with atypia on the curettage specimens, based on the hysterectomy specimens indicated one had simple hyperplasia without atypia, one had complex hyperplasia without atypia, while one had other benign histopathological findings (basal endometrium). Thus, comparing the curettage and hysterectomy specimens, 2/3(66.7%) were improved, while 1/3(33.3%) was worse.

Among 17 patients with complex hyperplasia without atypia on curettage specimens, the hysterectomy specimens indicated 5 had simple hyperplasia without atypia, 1 complex hyperplasia with atypia, while 16 had other benign histopathological findings (i.e., proliferative endometrium 7, secretory endometrium 2, basal endometrium 6, atrophic endometrium 1). Thus, comparing the curettage and hysterectomy specimens, 21/22 (95.5%) were improved, and 1/22(4.6%) was worse.

Among 7 patients with complex hyperplasia with atypia on curettage specimens, the hysterectomy specimens indicated: 3 had simple hyperplasia without atypia, 1 complex hyperplasia without atypia, 1 complex hyperplasia with atypia and 2 had other benign histopathological findings (proliferative endometrium). Thus, comparing the curettage and hysterectomy specimens, 1/7 (14.3%) was the same, and 6/7 (85.7%) were improved.

Discussion

The results of the study show that the agreement of preoperative and postoperative histopathology of endometrial hyperplasia determined by Kappa was 0.011. This represents a slight agreement(Viera and Garrett, 2005). In cases of endometrial hyperplasia diagnosed by uterine curettage, the worse postoperative histopathology was 6.3% while the better histopathology was 72.2%. In consistent with the slight agreement found in this study, Gundem et al also reported that the correlation between preoperative and postoperative endometrial histopathological findings was found to be statistically

insignificant (r = 0.105, p = 0.29)(Gundem et al., 2003). However, a significant correlation or almost perfect agreement was reported by the others (Epstein et al., 2001; Saygili, 2006). Of note, the inclusion criterion for the Gundem's study was similar to ours. That was the patients with endometrial hyperplasia diagnosed by uterine curettage. On the contrary, the studies that reported the significant correlation or almost perfect agreement included postmenopausal women with uterine bleeding plus thickening endometrium (Epstein et al., 2001;Saygili, 2006).

In most cases, endometrial hyperplasia without atypia can be resolved by progestin therapy or uterine curettage (Sivridis and Giatromanolaki, 2001; Horn et al., 2007). In addition, Tavassoli and Kraus reported that patients with atypical hyperplasia had the highest risk of developing adenocarcinoma in the range of 25%(Tavassoli and Kraus, 1978). In this study, endometrial hyperplasia without atypia was diagnosed preoperatively in 87.3% of the included cases. This may explain the better postoperative histopathology up to 72.2% of cases while the worse postoperative diagnosis was only 6.3%.

As the histological diagnosis in this study was performed by a single skilled gynecologic pathologist, the interpersonal variation in diagnosis can be avoided. This was strength of this study. However, as several studies showed, atypical hyperplasia was associated with a high percentage of concurrent cancer (Kendall et al., 1998; Bergeron et al., 1999). Moreover, it had a higher possibility to progress to be a cancer when compared to endometrial hyperplasia without atypia (Tavassoli and Kraus, 1978). In our study the number of the cases with atypical hyperplasia was found only 12.65 % while without atypia was found up to 87.35%. Thus the small number of the atypical hyperplasia in our study may attribute to the underestimation of the percent of worse postoperative pathology. Given that endometrial hyperplasia can be regressed by itself, if hysterectomy was not immediately performed after curettage, the slight agreement found in this study may be underestimated. Nevertheless, this provides clinical sound because this is the way that we manage our patients. Because of the low percent of the worse postoperative diagnosis in the study, this ensures us that management decision can base on the histopathological diagnosis of uterine curettage specimen, in particular endometrial hyperplasia without atypia. However, further research is warranted to determine agreement for pre- and postoperative diagnosis of atypical hyperplasia and endometrial cancer.

The results show that endometrial hyperplasia can improve and disappear in a short time and the continued endometrial hyperplasia 6.9% had more severe histology from hysterectomy specimens so we will have to close follow up and further medical therapy and repeated curettage or other investigation should be considered in women with recurrent bleeding.

Acknowledgements

The authors thank the faculty of Medicine for the support and Mr. Bryan Roderick Hamman and Dr. Woraluk Somboonporn for the English language correction and Mrs. Piangjit Tharnprisan and Mrs. Kaewjai Thepsuthammarat for statistic analysis and other consultation.

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