Histopathologic correlation of dilatation & currettage and hysterectomy specimens in patients with postmenopausal bleeding

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Summary

Purpose of investigation: To evaluate the consistency of preoperative and postoperative histopathological findings in postmenopausal patients with abnormal bleeding.

Methods: Pathologic diagnoses of 42 postmenopausal women with abnormal bleeding or increased endometrial thickness who underwent both dilatation and curettage (D&C), and hysterectomy for proper indications were retrospectively examined.

Results: The most common diagnosis was irregular proliferative endometrium in both the pre- and postoperative groups with 16 patients each (38%). After subgroup analysis, 50% of the patients with a preoperative diagnosis of complex hyperplasia without atypia, had complex atypical hyperplasia, and two-thirds of the patients with a preoperative diagnosis of complex atypical hyperplasia had endometrial cancer as the final diagnoses.

Conclusion: Preoperative D&C endometrial pathology findings positively correlated with postoperative hysterectomy pathology results. However, as the real pathology gets worse , D&C seems to under-diagnose the real pathology. In cases with complex hyperplasia with or without atypia , a second D&C or hysteroscopic evaluation may be recommended.

Key words: Histopathogical correlation; Dilatation and curettage; Hysterectomy.

Introduction

Endometrial hyperplasia is a spectrum of morphologic and biologic alterations of the endometrial glands and stroma extending from a hyperestrogenic state, which is an exaggerated physiologic condition, to carcinoma *in situ* [1]. Clinically significant hyperplasias usually evolve within a backround of proliferative endometrium as a result of protracted estrogen stimulation in the absence of progestin influence. Endometrial hyperplasias are clinically significant because they cause abnormal bleeding. These pathologies can occur in the presence of obesity, hypertension, diabetes mellitus, and estrogen-producing ovarian tumors, and they can precede or occur simultaneously with endometrial cancer [2].

Endometrial hyperplasias are classified based on their cytologic (atypia present/absent) and architectural (simple/complex) characteristics. A correct diagnosis is important because the medical or surgical treatment is based on the findings. Progestin therapy is very effective in reversing endometrial hyperplasias without atypia but it has no role in the presence of atypia [3, 4]. In this study, we examined the consistency of pathologic findings of dilatation and curettage (D&C), and hysterectomy performed thereafter in women with irregular bleeding.

Materials and Methods

Forty-two postmenopausal patients who applied to the Istanbul Medical School Obstetrics and Gynecology Department between September 2000 and September 2002 with abnormal uterine bleeding or increased endometrial thickness were enrolled in the study. All patients underwent both D&C and hysterectomy procedures, and were examined retrospectively regarding their pathology results. The consistency of endometrial pathology results gathered from both D&C and hysterectomy were compared. All specimens were examined by the gyneco-pathologists of Istanbul Medical School. Endometrial pathologies were described based on definitions suggested by the International Society of Gynecological Pathologists and adopted by WHO.

Preoperative diagnoses of D&C specimens were classified as endometrial polyp, irregular proliferative endometrium, simple hyperplasia without atypia, simple hyperplasia with atypia, complex hyperplasia without atypia, complex hyperplasia with atypia and endometrial cancer. Each patient's postoperative hysterectomy pathology report was compared with her D&C result. Correlation analyses of these variables were studied by Spearman's correlation test.

Results

Pathologic examination of D&C and hysterectomy specimens of 42 patients were retrospectively studied and the consistency of preoperative and postoperative findings was examined. Indications of D&C were bleeding in menopause and abnormal endometrial thickness measured during transvaginal ultrasound (TVUS) (≥ 5 mm in HRT non users and in women using continuous uninterrupted hormonal therapy, and ≥ 8 mm in women using cyclic interrupted hormonal therapy).

The most common preoperative diagnosis was irregular proliferative endometrium in 16 patients (38%), followed closely by simple hyperplasia without atypia in 14 patients (33%). There were four patients (9.5%) with complex hyperplasia without atypia, three patients (7.14%) with complex hyperplasia with atypia, three patients (7.14%)

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with endometrial polyps. In one patient (2.38%), it was reported that there was no material in the specimen sent after D&C. There was also one case of endometrial cancer diagnosed preoperatively (2.38%) after D&C.

After hysterectomies, postoperative pathologic diagnoses revealed the same number of patients with irregular proliferative endometrium (16 patients), but only 12 patients (28.5%) with simple hyperplasia without atypia. The number of patients diagnosed with complex hyperplasia without atypia (5 patients, 11.9%), complex hyperplasia with atypia (4 patients, 9.5%), and endometrial cancer (2 patients, 4.76 %) were increased (Table 1).

Table 1. — *Comparison of pre- and postoperative diagnoses.*

	Preoperative number of diagnoses (%)	Postoperative number of diagnoses (%)
Irregular proliferative endometrium	16 (38%)	16 (38%)
Simple hyperplasia without atypia	14 (33%)	12 (28.5%)
Complex hyperplasia without atypia	4 (9.5%)	5 (11.9%)
Complex hyperplasia with atypia	3 (7.1%)	4 (9.5%)
Endometrial polyp	3 (7.1%)	2 (4.8%)
Endometrial cancer	1 (2.4%)	3 (7.1%)
No material	1 (2.4%)	–

Since the important point of analysis would be the consistency of preoperative and postoperative diagnoses of each patient, Spearman's correlation analysis was performed on the variables. A correlation coefficient was found to be 0.98 and it was seen that there was a positive correlation between variables (Table 2).

Each preoperative diagnosis was also subgrouped and correlations with the postoperative diagnoses were studied (Tables 3 and 4). It was seen that simple hyperplasia tended to be overdiagnosed in endometrial curettings.

Of the 14 patients with preoperative diagnoses of simple hyperplasia, seven (50%) had a postoperative diagnosis of irregular proliferative endometrium (Table 4). However it was seen that while the preoperative diagnosis got worse, the possibility of skipping the real and much worse pathology with D&C was increased. Although the number of patients was small, out of four patients with a preoperative diagnosis of complex hyperplasia without atypia, two (50%) had a postoperative diagnosis of complex atypical hyperplasia. Similarly, of three patients whose preoperative diagnoses were complex atypical hyperplasia, two had a postoperative diagnosis of endometrial cancer.

Discussion

Endometrial hyperplasia encompasses a spectrum of progressively worsening changes in endometrial glands and stroma under the effect of unprotracted estrogen influence [1]. This spectrum starts as irregular proliferative endometrium occurring under a hyperestrogenic effect and it progresses to complex atypical hyperplasia with areas of adenocarcinoma [3, 4]. The factors under-

Table 2. — *Forty-two patients with preoperative and postoperative diagnoses.*

Pts. no.	Preoperative diagnosis	Postoperative diagnosis
1	Simple hyperplasia without atypia	Irregular proliferative endometrium
2	Simple hyperplasia without atypia	Complex hyperplasia without atypia
3	Complex hyperplasia with atypia	Complex hyperplasia with atypia
4	Irregular proliferative endometrium	Simple hyperplasia without atypia
5	Complex hyperplasia with atypia	Endometrial cancer
6	Simple hyperplasia without atypia	Simple hyperplasia without atypia
7	Complex hyperplasia without atypia	Complex hyperplasia without atypia
8	Complex hyperplasia without atypia	Complex hyperplasia with atypia
9	Simple hyperplasia without atypia	Irregular proliferative endometrium
10	Irregular proliferative endometrium	Irregular proliferative endometrium
11	Simple hyperplasia without atypia	Irregular proliferative endometrium
12	Simple hyperplasia without atypia	Simple hyperplasia without atypia
13	Irregular proliferative endometrium	Irregular proliferative endometrium
14	Endometrial polyp	Endometrial polyp
15	Irregular proliferative endometrium	Irregular proliferative endometrium
16	Simple hyperplasia without atypia	Simple hyperplasia without atypia
17	Irregular proliferative endometrium	Simple hyperplasia without atypia
18	Irregular proliferative endometrium	Irregular proliferative endometrium
19	Irregular proliferative endometrium	Complex hyperplasia without atypia
20	Blood and coagulum	Simple hyperplasia without atypia
21	Simple hyperplasia without atypia	Irregular proliferative endometrium
22	Endometrium cancer	Endometrial cancer
23	Irregular proliferative endometrium	Irregular proliferative endometrium
24	Irregular proliferative endometrium	Irregular proliferative endometrium
25	Simple hyperplasia without atypia	Simple hyperplasia without atypia
26	Irregular proliferative endometrium	Simple hyperplasia without atypia
27	Endometrial polyp	Simple hyperplasia without atypia
28	Irregular proliferative endometrium	Irregular proliferative endometrium
29	Simple hyperplasia without atypia	Irregular proliferative endometrium
30	Irregular proliferative endometrium	Irregular proliferative endometrium
31	Simple hyperplasia without atypia	Irregular proliferative endometrium
32	Complex hyperplasia without atypia	Simple hyperplasia without atypia
33	Simple hyperplasia without atypia	Complex hyperplasia with atypia
34	Irregular proliferative endometrium	Irregular proliferative endometrium
35	Complex hyperplasia with atypia	Endometrial cancer
36	Complex hyperplasia without atypia	Complex hyperplasia with atypia
37	Simple hyperplasia without atypia	Irregular proliferative endometrium
38	Irregular proliferative endometrium	Complex hyperplasia without atypia
39	Irregular proliferative endometrium	Simple hyperplasia without atypia
40	Endometrial polyp	Simple hyperplasia without atypia
41	Simple hyperplasia without atypia	Complex hyperplasia without atypia
42	Irregular proliferative endometrium	Simple hyperplasia without atypia

Table 3. — *Postoperative histopathologic findings in 16 patients diagnosed with irregular proliferative endometrium on curettage specimens.*

Postop diagnosis	Patients (number)	%
Irregular proliferative endometrium	9	56.25
Simple hyperplasia without atypia	5	31.25
Complex hyperplasia without atypia	2	12.25

Table 4. — *Postoperative histopathologic findings in 14 patients diagnosed with simple hyperplasia without atypia on curettage specimens.*

Postop diagnosis	Patients (number)	%
Irregular proliferative endometrium	7	50
Simple hyperplasia without atypia	3	21.42
Complex hyperplasia without atypia	2	14.28
Complex hyperplasia with atypia	1	7.14
Endometrial polyp	1	7.14

lying endometrial hyperplasia are obesity, diabetes mellitus, hypertension, estrogen-producing ovarian tumors, anovulation, nulliparity, and hormonal treatments [2]. Correct diagnoses of endometrial hyperplasias are important clinically because these pathologies may be precursor lesions of endometrial cancer. Thus, all effort should be focused on the early recognition and treatment of this benign condition before it progresses into endometrial carcinoma [5].

The risk of endometrial hyperplasia progressing to carcinoma is related to the presence and severity of cytologic atypia [3]. It has been shown that progression to carcinoma occurs in 1% of patients with simple hyperplasia, 3% of patients with complex hyperplasia, 8% of patients with atypical simple hyperplasia, and 29% of patients with atypical complex hyperplasia [6]. Sampling of endocervical and endometrial tissue for diagnoses of abnormal uterine bleeding is accomplished classically by the D&C technique. Besides this classic technique, Pipelle endometrial sampling and hysterescopy can be used as well. In usual practice, office endometrial aspiration biopsy is accepted as the first step in evaluation of a patient with abnormal uterine bleeding or suspected endometrial pathology. Although the diagnostic accuracy of office-based endometrial biopsies has been shown to be 90-98% when compared with subsequent findings at D&C or hysterectomy, adequate tissue sampling may be difficult in older menopausal women with cervical stenosis. Hysterescopy is more accurate in identifying polyps and submucous myomas than endometrial biopsy or D&C alone. Although there are many studies comparing the adequate tissue sampling power of these techniques, it seems that D&C is still the gold standard [7-9]. However, in the literature there are not many studies focusing on how much this gold standard method of endometrial sampling reflects the real endometrial pathology.

A single curettage will not remove all the surface endometrium completely from the uterine cavity. Repeated studies have demonstrated the inability of a thorough curettage to remove more than 50 to 60% of the endometrium when the procedure has been done by experienced gynecologists immediately before a planned hysterectomy. Stock and Kanbour designed a study and performed prehysterectomy D&C and examined the area of endometrium curettaged postoperatively. They observed that in 60% of hysterectomy specimens studied, less than 50% of the endometrial surface had been removed by a prehysterectomy curettage. They also found that 26 cases of endometrial carcinoma that had been classified as clinically normal appearing tissue on prehysterectomy curettage [10].

In our study we aimed to evaluate D&C accuracy by comparing preoperative curettage pathology results with postoperative hysterectomy specimen examinations. It was shown that preoperative diagnoses were positively correlated with postoperative diagnoses (correlation coefficient: 098). This means that when the entire patient population is taken into consideration, preoperative D&C accurately reflects postoperative diagnoses. However, when the preoperative diagnoses are subgrouped and data are re-analyzed, it reveals that while the preoperative diagnosis gets worse, D&C may skip the real and much worse pathology. Although the number of patients was small, out of four patients with a preoperative diagnosis of complex hyperplasia without atypia, two (50%) had a postoperative diagnosis of complex atypical hyperplasia. Similarly, of three patients whose preoperative diagnosis was complex atypical hyperplasia, two had a postoperative diagnosis of endometrial cancer. One remarkable point is that in one case although no material was reported at D&C, the hysterectomy specimen revealed simple hyperplasia. Gundem *et al.* also studied the preoperative and postoperative correlation of histopathological findings in cases of endometrial hyperplasia and they found a statistically insignificant correlation between variables but in this study each diagnostic group was not analyzed separately [11].

In conclusion, endometrial hyperplasias are clinically significant lesions because of their potential to accompany or progress into endometrial cancer. An accurate diagnosis and histopathologic classification of these lesions is important because of the medical treatment potential unless atypia is present. Dilatation and curettage is the most frequently used and seemingly the gold standard technique of endometrial tissue sampling for diagnosis. Generally D&C reflects the real endometrial pathology accurately, however, the accuracy of D&C decreases while the real pathology gets worse. In cases with complex hyperplasias with or without atypia, a second D&C or hysterescopic evaluation to obtain biopsies from suspicious areas may be recommended.

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