The Value of Sonographic Endometrial Thickness and Diagnostic Hysteroscopy in the Evaluation of Endometrial Pathologies

ENDOMETRIAL PATOLOJİLERİN DEĞERLENDİRİLMESİNDE DİAGNOSTİK HİSTEROSKOPİ VE SONOGRAFİK ENDOMETRIAL KALINLIĞIN DEĞERİ

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Summary

Objective: *To determine diagnostic role of endometrial thickness and hysterescopv in the evaluation of endometrial disorders.*

Material and Method: *The patients who were thought to be endometrial pathologies were entered in this study. Endometrial thickness was measured with vaginal sonography. Hysteroscopy and D&C were performed with local anestesia. Mann Whitney U test was used for statistical analysis and p<().<)5 was accepted to be statistically significant.*

Results: *Thirty patients were enrolled in this study. Mean endometrial thickness was higher in patients with pathologic findings than normal. However it u-as not well correlated with histeroscopicfindings. Hysterescopv was more useful diagnostic method for endometrial pathologies.*

Conclusion: *Transvaginal endometrial thickness is not a good diagnostic method as hysterescopv for endometrial pathologies.*

Key Words: Hysteroscopy, Endometrial thickness, Sonography, Dilatation and Currettage

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Özet

Amaç: *Endometrial hastalıkların değerlendirmesinde endometrial kalınlık ve diagnostik histeroskopinin rollinii belirlemek.*

Materyel ve Metod: *Endometrial patolojisi olduğu düşünülen hastalar bu çalışmaya dahil edildi. Endometrial kalınlık vajinal sonografı ile değerlendirildi. Histeroskopi ve dilatasyon küretaj lokal anestezi ile yapıldı, istatistiksel analizler için Mann-Whitney U testi kullanıldı ve istatistiksel anlamlılık için P<0.05 kabul edildi.*

Bulgular: *Otuz hasla bu çalışmaya alındı. Ortalama endometrial kalınlık patolojik bulguları olanlarda normallerden daha yüksekti. Ancak bu histeroskopi bulguları ile iyi korele değildi. Histeroskopi endometrial patolojilerin değerlendirilmesinde daha yararlı idi.*

Sonuç: *Transvajinal endometrial kalınlık endometrial patolojiler için histeroskopi gibi iyi bir diagnostik metod değildir.*

Anahtar Kelimeler: Histeroskopi, Endometrial kalınlık, Sonografi, Dilatasyon ve küretaj

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Endometrial pathologies are one of the most frequent gynecologic problems. They are usually evaluated with sonography, dilatation-currettage (D&C) and hysteroscopy. D&C is a gold standart and invasive method.

Endometrial thickness has been popular recently. But the value of it is not known well in the benign endometrial pathologies. Hysteroscopy is usually used such as a second stage procedure for endometrial pathologies. So we searched diagnostic role of endomerial thickness and hysteroscopy in the evaluation of endometrium.

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Materials and Methods

This study included 30 patients with gynecologic symptoms between february 1995 to September 1996 in the department of Obstetrics and Gynecology of Akdeniz University Medical Faculty. The procedure was explained to the patients. The patients who took hormonal medication

(conjugated estrogens and progestational pills) were excluded. TVS (Toshiba capps 5.75 mHz vaginal probe) was made at the lithotomy position and empty urinary bladder. Endometrium was evaluated in oblique and transverse axis. Endometrial thickness was measured at the thickest part in the longituidinal plane. The measurement included both endometrial layers and was measured by the same team. Later, paracervical blok was made at the 4 and 8 o'clock in the cervix with 2% prilocain (Citanest R Astra-Eczacibasi). After diagnostic hysteroscopy D&C was performed. 5% Dextrose was used for distantion uterine cavity. All materials which gained from D&C were sent to histopathologic examination.

Mann-Whitney U test was used for statistical analysis and $p < 0.05$ was accepted for statistical significance.

Results

Twenty two patients (73.3%) were premenopausal, 8 (26.6%) in postmenopausal period. The most common symptom was vaginal bleeding (83.3%). Mean age was 44.1 (range 39-59) and mean pregnancy rate was found 4.8 (range 0-15) (Table 1).

Mean endometrial thickness (MET) was found to be 6.7mm (range 3-20). It is higher in premenopausal than postmenopausal patients (Table 1). But, it was not statistically significant ($p>0.05$) (Table 1) and endometrial thickness was higher in the patients who had abnormal hysteroscopic and histologic findings than normal patients (p 0.0001). Therefore , there is no significant difference between two groups which had abnormal hysteroscopic and histological findings (Tablo 2).

The highest endometrial thickness was 20mm. Endometrial thickness was not correlated well with hysteroscopic findings in patients having less than 10 mm. Also we established endometritis and endometrial polyp with hysteroscopic and microscopic examinations in 3 patients who had 3mm endometrial thickness. Endometrial thickness was not related with any specific endometrial pathology. Endometrial polyp was the most frequent pathologic findings in diagnostic hysteroscopy (Tablo 3).

Fourteen (46.6%) patients had proliferative and secretuary endometrium in the pathologic examination while 4 (13.3%) patients had endometrial polyp. Endometrial material was not gained for pathologic examination in the 4 (13.3%) patients. In the histologic examination endometrial hyperplasia was found in 4 (13.3%) patients, endometritis in 3(10%) patients (Table 4).

Diagnostic hysteroscopy yielded endometrial hyperplasia in 3 (10%) patients, endometritis in 2 (6.6%) patients (Table 4). The patients with less than 5mm endometrial thickness had %76.2 pathologic findings in diagnostic hysteroscopy and 23.7% pathologic examination (Table 5).

Table **1.** The characteristics of the patients.

Characteristics	Premenopause	Postmenopause
No of patients	22(73.3%)	8(23.3%)
Age	42.04(range 39-51)	49.7(range 42-59)
MET*	7.3(range3-20)mm	4.9(range 4-7)mm

*:Mean endometrial thickness.

Table 2. The relation between endometrial thickness, hysteroscopic and histologic findings.

Method	Results	Endometrial thickness
Hysteroscopy	Normal	5.2mm(range 3-10)
	Abnormal	8.9mm(range 3-20)
Histopathology	Normal	5.5mm(range 3-10)
	Abnormal	8.3mm(range 3-20)

Table 3. Hysteroscopic findings.

Findings	No of Patients	Per cent (%)
Secretuary and proliferative endometrium	8	26.6
Endometrial polyp	8	26.6
Submucosal myoma	5	16.6
Atrophic endometrium	6	20.0
Endometrial hyperplasia	3	10.0
Estrogen inadequent endometrium	2	6.6
Endometritis	2	6.6
Uterine subseptum	1	3.3

Note:5 Patients had multipli pathology.

Discussion

Sonographic evaluation of the endometrium is a noninvasive and reliable method. Endometrium can be evaluated by transabdominal and transvaginal sonography. Transvaginal sonography (TVS) is superior in te evaluation of endometrial disorders. The cor-

Table 4. Histopathological findings.

Results	No of Patients	Per cent(%)
Secretuary endometrium	10	33.3
Proliferative endometrium	4	13.3
Endometrilis	3	10.0
Atrophic endometrium	1	3.3
Endometrial polyp	4	13.3
Simple hyperplasia	4	13.3
Inadequenl material	4	13.3*

*:3 Patients in which endometrial material was not gained were included in this group.

relation between endometrial thickness in TVS and endometrial disorders have been reported (1,2,). Also, it has been noted that TVS can be used as a screening method to evaluate endometrium (3). Osmars et al. (4) studied in the 283 postmenopausal patients without gynecologic symptoms. They performed D & C in patients with endometrial thickness exceeding 4 mm and they reported 3.5% (11 cases) endometrial adenocarcinoma. This rate was high for normal population. But, endometrial carcinoma is found in 12.5% of postmenopausal patients with vaginal bleeding.

There is no conclusion which endometrial thickness is pathologic. Cut-off limit value for postmenopausal patients has been proposed as 5mm in the literature (5-7). There are a few studies for premenopausal patients. We found that endometrial polyp and endometritis in three patients with less than 5mm endometrial thickness. But, endometrial thickness was higher in the patients who had abnormal findings with histeroscopy and histologic examination. MET was found to be 4.3mm in premenopausal patients with normal hysteroscopic and histological findings. But, MET was found 9.3mm in the patients who had hysteroscopic abnormal findings and 9.1mm in the patients with histologic examination respectively. This difference was not statistically significant ($p>0.05$).

Endometrial carcinoma have been reported in endometrial thickness less than 5mm in the literature (8,9). But, these cases are a few. Emanuel et al (10) proposed cut-off endometrial thickness 12 mm in premenopausal and 9mm in postmenopausal period for endometrial carcinoma. We did not find endometrial adenocarcinoma.

We determined endometrial pathology in 17 (56.6%) patients with less than 10mm endometrial thickness (Table 5) in the diagnostic hysteroscopy. But, 6 of them had atrofic endometrium.

Simple endometrial sampling techniques (Pipelle) have been important recently. These techniques are not safe theoretically. Van Den Bosch et al. (11) found that sensitivity of Pipelle was 44.6% and specificity 98.5% for endometrial pathologies. The authors reported sensitivity of TVS 82% and spesivity 80% for 4mm cut-off limit. Karlsson et al. explained sensitivity of TVS for endometrial pathology 97%, specificity 81% 5mm cut-of limite. They noted that endometrial cytology did not increase safety of TVS. In addition, the value of endometrial cytology is limited in endometrial pathologies (12).

D & C is used as a gold standart method for endometrial pathologies. However it has been reported to be false negative 10-21% (11). Especially submucoal myoma and endometrial polyp are missed in D & C. These pathologies can be detected in diagnostic hysteroscopy easily and treated the same time by operative hysteroscopy (13). We established diagnosis of endometrial polyp in 16.6% in histologic examination, 26.6% in diagnostic hysteroscopy. Gimpelson et al. (14) reported that hysteroscopy and direct biopsy were more successful than D & C for endometrial disorders. Brooks et al. made diagnostic hysteroscopy in 29 patients after D & C. They found submucousal myoma in 19 patients, endometrial polyp in 5 patients. Endometrial polyp was found in one patient in histologic exam-

Table 5. Endometrial thickness, hysteroscopic and histopathologic findings.

		Endometrial thickness		
		2- 5mm	6-10mm	10mm<
Hysteroscopy	Normal	3*(25%)	2(22.2%)	1(11.1%)
	Abnormal	9(75%)	7(77.7%)	8(88.8%)
Histologic examination	Normal	7(58.3%)	3(33.3%)	1(11.1%)
	Abnormal	5(41.6%)	6(66.6%)	8(88.8%)

*:No of patients.

ination. Towsend ct al. studied about 110 postmenopausal patients with histeroscopy and direct biopsy. They noted 2 endometrial cancer, 95 benign endometrial pathologies (42 polyp, 53 submucousal myoma) and 13 normal findings. We found benign endometrial pathologies in 14 (46.6%) patients. Sixteen patients were normal hysteroscopically. 11 (36.6%) patients had abnormal findings in histologic examination. But, these differances werenot statistically significant ($p < 0.05$).

Hysteroscopy is official diagnostic method with or without local anestesia. We used paracervical blockin this study. There was no any problem related to pain in diagnostic hysteroscopy. Pain increased in D&C. But this pain was not irresistable Additional anesthetic medication did not use for any patients. But it may be more useful to perform official hysteroscopy for diagnostic purposes. Because cervical dilatation and anesthetic medication is not necessary (15).

Being a popular method recently, sonohysterography is a noninvasive method for presenting endometrial pathologies. Also, it has been reported the use of saline infusion to enhance visualisation of the endometrium increases the diagnostic accuracy of transvaginal sonography to approach that of diagnostic hysteroscopy and also provides some additional information (16).

To present endometrial cavity , distantion media is used. Liquid media leak less than gas media. Mucus, fibrin and cloth can be cleaned with liqued media. We used 5%dexrose. Endometrial cavity can be visualised easily. 5% Dextrose are cheap and can be found anywhere.

Conclusion

Transvaginal sonographic endometrial thickness is useful noninvasive method. But it is not corclcted well with benign endometrial pathologies less than 10mm endometrial thickness in perimenopausal perioud. Hysteroscopy is superior diagnostic method for diagnosis in endometriel polyp and submucousal myoma.

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