Original Article

Frequency of Common Histopathological Findings Among Patients having Endometrial Thickness ≥5mm Presenting with Abnormal Uterine Bleeding

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Abstract

Objective: To determine the frequency of common histopathological findings among patients having endometrial thickness ≥ 5mm presenting with abnormal uterine bleeding.

Methodology: A descriptive cross-sectional study was performed at the Department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi from June to November 2019. 270 females with atypical uterine bleeding for more than 06 months and endometrial thickness of ≥ 5mm on transvaginal ultrasonography (TVS) were selected for the study. The written consent was taken from selected women after fulfilling the criteria. Endometrial sampling was performed either by D&C or pipelle and was subjected to histo-pathological examination was also performed and the data was recorded.

Results: The patient's mean age was 47.59± 5.35 years. The most common findings were secretary and proliferative phase, observed in 41.1% and 25.9% patients respectively. Atrophic 8.1% Polyp 6.3%, simple hyperplasia 5.2%, son-atypia complex hyperplasia 3.7%, atypia involving complex hyperplasia 3.7%, and adenocarcinoma was observed in 5.6%.

Conclusion: Transvaginal ultrasonography is a reliable initial screening approach in the assessment of irregular uterine bleeding as well as appears to be a useful approach for excluding endometrial anomalies.

Keywords: Abnormal uterine bleeding, Transvaginal ultrasonography, endometrial

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Introduction

Unusual uterine bleeding is a common gynaecological condition. These menstrual complications arise most often at the peak of reproductive age, which is also an issue for cancer or endometrial hyperplasia. About 75 thousand hysterectomies are conducted worldwide, 30% of these hysterectomies are undertaken only for menstrual complications.[1] While uterine cancer is predominantly a disorder of postmenopausal females, up to 14 percent of those affected are premenopausal and 4 percent are under 40 years of age. Furthermore, owing to a physically inactive lifestyle, rising rates of obesity and a drop in fertility rates, the prevalence of uterine cancer has gradually raised.[2] Transvaginal Scan (TVS) is one of the non-invasive procedures for the identification of endometrial variations and has been utilized as a diagnostic tool in postmenopausal asymptomatic females. Screening approaches like vaginal or cervical cytology are not reasonably precise for the identification of endometrial cancer as well as hysteroscopy and direct uterine sampling are not reliable screening procedures due to their invasiveness.[3] Another question is whether TVS

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screening for endometrial carcinoma is clinically effective in perimenopausal and asymptomatic premenopausal females without any symptoms like AUB.[4] TVS is beneficial for the identification and assessment of the degree of endometrial variations among patients undergoing biopsy and also for the identification of other pelvic anomalies. Literature is in short of studies that integrate histology and endometrial thickness.[5] Thus, present study aims to assess the validation of endometrial thickness on TVS in comparison to histopathology among subjects with irregular uterine bleeding.

Methodology

A descriptive cross-sectional study was carried out for a period of six months at department of Obstetrics and Gynaecology, Jinnah Postgraduate Medical Centre, Karachi from June to November 2019. The sample size of the study was 270 by using WHO sample size calculator by taking prevalence of endometrial carcinoma 1.8%, Confidence Interval 95%, and margin of error 1.6%. The sampling technique was Non- probability of consecutive sampling.

Inclusion Criteria: Age 40-60 years, Women with abnormal uterine bleeding for more than 06 months, Endometrial thickness ≥ 5mm on transvaginal ultrasound.

Exclusion Criteria: Women taking HRT, anticoagulants, any history of genital tract trauma, Chronic liver disease, and abnormal Pap smear were excluded from the study.

The study was granted permission from the Ethical review board of Jinnah Postgraduate Medical Centre, Karachi. Written informed consent was sought. Patients full filling the inclusion criteria were enquired about brief clinical history. Clinical examination and TVS was carried out to evaluate the endometrial thickness. Endometrial thickness was categorized according to the thickening degree: 5-8mm, 9-15mm, and ≥ 15mm. The endometrial biopsy sample was collected either by Dilatation and Curettage (D&C) or Pipelle and was subjected to histopathology at JPMC. The data was recorded on a structured Performa.

SPSS 21.0 version was used for data entry and analysis. The quantitative data like age and duration of bleeding was presented in the form of Mean ± SD. Frequency and percentage were computed for the parity, categories of endometrial thickness, and histopathology findings. Stratification concerning age, parity, duration of bleeding and endometrial thickness was done. Post stratification chi-square test was applied by taking p-value ≤ 0.05 as significant.

Results

The descriptive statistics of age and duration of the disease are mention in Table I. The mean age of patients was 47.59±5.35 years. The frequency of common histopathological findings is presented in Table II. The most common histopathological findings observed in the study were Secretary and Proliferative phase endometrium is shown in Table III.

Table I: Descriptive Statistics of Age and Duration of Disease

Descriptive Statistics		Age (Years)	Duration of Disease
Mean		47.59	12.02
Std. Deviation		5.35	3.63
95% Confidence Interval for Mean	Lower Bound	46.95	11.58
	Upper Bound	48.23	12.45
Median		46	12
Interquartile Range		8	3
Minimum		40	7
Maximum		65	20

Table II: Frequency of common histopathological findings among patients having endometrial thickness≥ 5 mm presenting with abnormal uterine bleeding

Finding	Frequency	Percentage
Secretory	111	41.1%
Proliferative	70	25.9%
Atrophic	22	8.1%
Polyp	17	6.3%
Simple hyperplasia	14	5.2%
Complex hyperplasia without atypia	10	3.7%
Complex hyperplasia with atypia	10	3.7%
Adenocarcinoma	15	5.6%

Discussion

Endometrial carcinoma is among the most prevalent gynaecological malignancies and is the most prevalent site of cancerous neoplasm among females.[6] Uterine cancer constitutes just 1.9% of all forms of cancers with a growing trend and mean life expectancy.[7] The prevalence of benign endometrial pathology

Table III: Frequency of common histopathological findings among patients having endometrial thickness≥ 5 mm presenting with abnormal vaginal bleeding by the duration of disease.

Finding	Duration of Disease		P-Value
	≤ 12 Months n=208	>12months n=62	
Secretory	92(44.2%)	19(30.6%)	0.056
Proliferative	42(20.2%)	28(45.2%)	0.0005
Atrophic	15(7.2%)	7(11.3%)	0.303
Polyp	10(4.8%)	7(11.3%)	0.065
Simple hyperplasia	14(6.7%)	0(0%)	0.036
Complex hyperplasia without atypia	9(4.3%)	1(1.6%)	0.321
Complex hyperplasia with atypia	10(4.8%)	0(0%)	0.079
Adenocarcinoma	15(7.2%)	0(0%)	0.030

(endometrial polyp) in association with bleeding was found in 2.5% of cases.[8,9] Diagnostic curettage seems to have been the standard tool for diagnosing endometrial disorders for several years. [10]

Hysteroscopy along with histological evaluation eventually has become the 'benchmark' for these evaluations.[11] At present, the emphasis has changed to TVS as a non-invasive, convenient option to curettage and hysteroscopy .[12] Uterine cancer is by far the most cancer of the female reproductive tract. According to the Surveillance Epidemiology and End Results (SEER) database[13], the prevalence of uterine cancers in females aged 30-34 years is 23/1 million, rising to 61/1 million females aged 35-40 years and rising significantly to 362/1 million females aged over 40-49 years.

In this study, the patients had 47.59 ± 5.35 years of mean age. In Ozela et al study[14], the study contributors had 58.8±15.1 years of mean age. In the present study, the most common findings were secretary and proliferative phase endometrium that was observed in 41.1% and 25.9% patients respectively. In Sur and Chakravorty study[15] proliferative endometrium, secretory endometrium, hyperplasia, atrophy, and cancer of the endometrium were found among 55, 43, 15, 19, 2 females respectively. In this study, atrophic endometrium was seen in 8.1%, polyp 6.3%, simple hyperplasia 5.3%, non-atypia complex hyperplasia 3.7%, atypia involving complex hyperplasia 3.7%, and adenocarcinoma was found among 5.6%. The risk for endometrial carcinoma was reported at 6.7% for endometrium ≥11mm, and risk of 0.002% for endometrium ≤ 11 mm.[16] These risks are based on an approximation of 15 % of the total events of endometrial carcinoma happening in females without bleeding. Moreover, in a retrospective study of 123 asymptomatic women with endometrial thickness of 10 mm or more, 13 percent had endometrial carcinoma and 17 percent had hyperplasia.[17] In a study of 2025 females, screened via TVS, 117 females had the irregular endometrial thickness as well as endometrial biopsy specimen 0f 66 of these females identified 3 (4.5%) cases of carcinoma[18] Whereas Schmidt et al[19] and Lev – Sagie et al[20] found no association between malignancy and endometrial polyp. An assessment of 560 asymptomatic females on TVS, those with endometrial thickness more than 5mm revealed a carcinoma development rate of 0.1% as per the incidence of polyp[21] as well as in symptomatic females, this ratio was elevated (2.7%). In a recent report, 438 females were examined, with a 10% prevalence of polypoidal melanoma in symptomatic females compared to 0.9% in symptomless females.[22] In the study of Antunes et al, [23] out of 475 cases 78.5% were found to be endometrial polyps, whereas 2.7% were cancerous polyps. The endometrial thickness below 5 mm among females who have postmenopausal bleeding may be prevented. No absolute cut-off value could be attributed to menstruating females.

Conclusion

Transvaginal ultrasonography is a non-invasive diagnostic tool that offers valuable information about the endometrium in women with abnormal uterine bleeding. Secretory, proliferative, atrophic, polyp and simple hyperplasia were the commonest histopathological findings and adenocarcinoma was 5.6%. Hence further research is warranted to clarify the usefulness of sonographic assessment of the endometrium in cases of abnormal uterine bleeding.

References

1. Prathibha SD, Sathish BR. A comparative study of clinical examination, ultrasound findings, diagnostic hysteroscopy with histopathological examination report of endometrium in patients with abnormal uterine bleeding. J. Evid. Based Med. Healthc .2016;3(66);3588-3592.

2. Bray F, Dos Santos Silva I, Moller H, Weiderpass E. Endometrial cancer incidence trends in Europe: underlying determinants and prospects for prevention. Cancer Epidemiol Biomarkers Prev. 2005;14:1132–1142.
3. Remondi C, Sesti F, Bonanno E, Pietropolli A, Piccione E. Diagnostic accuracy of liquid-based endometrial cytology in the evaluation of endometrial pathology in postmenopausal women. Cytopathology. 2013;1;24(6):365-371.
4. Kim MJ, Kim JJ, Kim SM. Endometrial evaluation with transvaginal ultrasonography for the screening of endometrial hyperplasia or cancer in premenopausal and perimenopausal women. Obstet Gynecol Sci. 2016;1;59(3):192-200.
5. Sur D, Chakravorty R. Correlation of Endometrial Thickness and Histopathology in Women with Abnormal Uterine Bleeding.Reprod Syst Sex Disord 2016;5:192.
6. National Cancer Institute. Cancer stat fact sheet : Sorpus and uterus. NOS. Bethesda. Md: National Cancer Institute 2010.
7. Kong TW, Lee KM, Cheong JY, Kim WY, Chang SJ, et al. Comparison of laparoscopic versus conventional open surgical staging procedure for endometrial cancer. J Gynecol Oncol. 2010;21:106-111.
8. Clark TJ, Khan KS, Gupta JK. Review: The diagnosis of intrauterine pathology in post-menopausal women: an evidence based approach. Reviews in Gynaecological Practice. 2002;2:109-116.
9. Bakour SH, Khan KS, Gupta JK. The risk of pre-malignant and malignant pathology in endometrial polyps. Acta Obstet Gynecol Scand. 2000;79:317-220.
10. Grimes DA. Diagnostic dilatation and curettage: A re-appraisal. Am J Obstet Gynecol. 1982;142:1-6.
11. Clark TJ, Mann CH, Shah N, Song F, Khan KS. Accuracy of out-patient endometrial biopsy in the diagnosis of endometrial cancer: a systematic quantitative review. Br J Obstet Gynecol. 2002;109:313-321.
12. Granberg S, Wikland M, Karlsson B, Norstrom A, Friberg LG. Endometrial thickness as measured by endovaginal sonography for identifying endometrial abnormality. Am J Obstet Gyneco. 1991;164:47-52.
13. Vuopala S. Diagnostic accuracy and clinical applicability of cytological and histological methods for investigating endometrial carcinoma. Acta Obstet Gyneocl Scand Suppl.1977; 70:1-72.
14. Ozelci R, Dilbaz B, Akpınar F, Kınay T, Baser E, Aldemir O, et al. The significance of sonographically thickened endometrium in asymptomatic postmenopausal women. Obstet Gynecol Sci 2019;62(4):273-279.
15. Sur D and Chakravorty R. Correlation of endometrial thickness and histopathology in women with abnormal uterine bleeding. Reprod Syst Sex Disord.2016,5:1-3
16. Smith-Bindman R, Kerlikowske K, Feldstein V, Subak L, Scheidle J, et al. Endovaginal ultrasound to exclude endometrial cancer and other endometrial abnormalities. JAMA. 1998;280:1510-1517.
17. Gerber B, Krause A, Mueller H, Reimer T, Kuelz T. Ultrasonographic detection of asymptomatic endometrial cancer in postmenopausal patients offers no prognostic advantage over symptomatic disease discovered by uterine bleeding. Eur J Cancer. 2001;37:64-71.
18. Ciatto S, Cecchini S, Bonardi R, Grazzini G, Mazotta A. A feasibility study of screening for endometrial carcinoma in postmenopausal women by ultrasonography. Tumori. 1995;81:334-337.
19. Schmidt T, Breidenbach M, Nawroth F, Mallmann P, Beyer IM, Fleisch MC, et al. Hysteroscopy for asymptomatic postmenopausal women with sonographically thickened endometrium. Maturitas 2009;62:176-8.
20. Lev-Sagie A, Hamani Y, Imbar T, Hurwitz A, Lavy Y. The significance of intrauterine lesions detected by ultrasound in asymptomatic postmenopausal patients. BJOG. 2005;112:379-381.
21. Weigel M, Friese K, Strittmatter HJ, Melchert F. Ultrasound assessment of the postmenopausal endometrium. Is measuring thickness adequate?. Ultraschall Med 1994;15:117-121.
22. Wethington SL, Herzog TJ, Burke WM, Sun X, Lerner JP, Lewin SN, et al. Risk and predictors of malignancy in women with endometrial polyps. Ann Surg Oncol. 2011;18:3819-3823.
23. Antunes A Jr, Costa-Paiva L, Arthuso M, Costa JV, Pinto- Neto AM. Endometrial polyps in pre- and postmenopausal women: factors associated with malignancy. Maturitas. 2007;57:415-421.