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Original Research Article

Endometrial study of abnormal uterine bleeding in perimenopausal women

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ABSTRACT

Background: AUB accounts for 70% of gynecological pathology. Prevalence of AUB is 3%-30% among reproductive aged women. Early diagnosis by endometrial biopsy is the most effective way to rule out malignancy in peri-menopausal women with AUB. TVS can be used as an aided diagnostic tool. Aims and objectives of this study is to evaluate endometrial causes of abnormal uterine bleeding in perimenopausal women and to correlate transvaginal sonography findings with histopathology by endometrial biopsy.
Methods: This prospective observational study was conducted on 80 perimenopausal women with abnormal uterine bleeding. Uterine pathology, endometrial thickness, was assessed by TVS. Endometrium was considered hyperplastic if thickness is ≥10 mm in perimenopausal women and was taken up for endometrial sampling. Endometrial biopsy by Pipelle's curette was done as an outpatient procedure and sent for HPE.
Results: Total of 80 women with perimenopausal bleeding were examined during the study. Majority of the patients with AUB presented in 40-44 years age group and belonged to second parity. As per the TVS findings, 42 (52.5%) subjects had normal findings, 25 (31.3%) showed endometrial hyperplasia and remaining had other benign uterine pathology. Majority of women had ET 10 mm. The most common finding on histopathological examination was Proliferative endometrium.
Conclusions: Trans vaginal scan when incorporated along with bimanual pelvic examination and Pipelle's aspiration can enhance our anatomic diagnosis. This study proves that transvaginal findings correlate well with the histopathology findings.

Keywords: Abnormal uterine bleeding, Endometrial intraepithelial neoplasia, Post-menopausal bleeding, Transvaginal sonography, Histopathological examination

INTRODUCTION

Abnormal uterine bleeding is a commonly encountered problem in gynecological practice. It accounts for 70% of gynecological pathology. Prevalence of AUB among reproductive aged women is 3%-30%. Atleast one third of women are affected at some time in their life.[1,2] In perimenopausal age, the menstrual pattern changes due to hormonal and pathological conditions. FIGO introduced the concept of nongestational acute AUB in the reproductive years, distinguishing it from chronic AUB, an approach endorsed by the American college of obstetricians and gynecologists.[3] Acute AUB is defined as an episode of heavy bleeding, which is of sufficient quantity to require immediate intervention to minimize or prevent further blood loss. Chronic AUB is defined as bleeding from uterine corpus that is abnormal in volume, frequency, duration, and/or regularity and has been present for the majority of the preceding 6 months. According to FIGO 2018 classification, the normal duration of menstrual cycle is <8 days and frequency is 24 to 38 days.[4] Conventional D&C was considered the gold standard for

diagnosis for perimenopausal bleeding previously. Currently the gold standard in diagnosing perimenopausal bleeding is Hysteroscopic D&C. Malignant precursor such as Atypical endometrial hyperplasia (EIN) are seen more commonly during the menopausal transition. Early diagnosis by endometrial biopsy is the most effective way for perimenopausal women with AUB to rule out malignancy.[5] With the aid of TVS Endometrial pathology can be visualized more accurately, hence it can be used as a diagnostic tool. In this study, we are correlating the findings of two diagnostic methods i.e. TVS and HPE by Pippele aspiration to evaluate PMB.

Aim and objectives

Aim and objectives of current study were to evaluate endometrial causes of abnormal uterine bleeding in perimenopausal women and to correlate transvaginal sonography findings with histopathology by endometrial biopsy.

METHODS

This was a prospective observational study conducted in the department of obstetrics and gynecology in a tertiary hospital, during December 2020 to November 2021. This study included a total of 80 perimenopausal women with abnormal uterine bleeding. Informed consent was taken. On Siemens Acuson X300 USG machine, various factors were assessed by TVS which included endometrial thickness (ET), uterine size, adnexal mass and polyp. Endometrial thickness was measured in mid-sagittal section at the thickest area of the endometrium near the fundus, with maximal double layer thickness including the outermost border of the endometrium on both sides. Endometrium was considered hyperplastic if thickness is ≥10 mm in perimenopausal women and was taken up for endometrial sampling. Endometrial biopsy by Pipelle's curette was done as an outpatient procedure. The Investigations such as Blood grouping and Rh typing, Complete blood count, routine urine analysis, RBS, BT, CT, thyroid function test was done to rule out other etiologies of abnormal uterine bleeding.

Statistical analysis

Data entered and analyzed using SPSS 22 version software in MS excel. Qualitative data is presented in the form of proportions and bar charts and pie diagrams will be used to represent graphically. Quantitative data is presented as mean, standard deviation. Chi-square test will be the test of significance for qualitative data and Student's t test will be the test of significance for quantitative data, p value <0.05 will be considered as statistically significant.

RESULTS

Total of 80 women with perimenopausal bleeding were examined during the study. Maximum number of patients with AUB presented in the age group (53.8%) 40-44 years. There were 37 (46.3%) patients in the age group of 45-50 years (Table 1). AUB was found in 5 (6.3%) patients with para 1, 47 (58.8%) parity 2, 22 (27.5%) in parity 3 and 6 (7.5%) in parity 4 (Table 2). Perimenopausal women had different menstrual complaints including menorrhagia (33.8%), polymenorrhea (25%), metrorrhagia (17.5%), menometrorrhagia (16.3%) and oligomenorrhea (6.3%) (Table 3).

Table 1: Distribution based on age of the patients.

Age (years)	N	%
40-44	43	53.8
45-50	37	46.3
Total	80	100.0

Table 2: Distribution of cases based on parity.

Parity	N	%
Nulliparous	0	0
P1	5	6.3
P2	47	58.8
P3	22	27.5
≥P4	6	7.5
Total	80	100.0

Table 3: Presentation of symptoms in perimenopausal age.

Menstrual disorders	N	%
Oligomenorrhia	5	6.3
Polymenorrhea	20	25.0
Metrorrhagia	14	17.5
Menorrhagia	27	33.8
Menometrorrhagia	13	16.3

The complaints presented with varying duration: <30 days (47.5%), 30 days-6 months (36.3%), 6 months-1 year (8.8) and more than 1 year (7.5%).

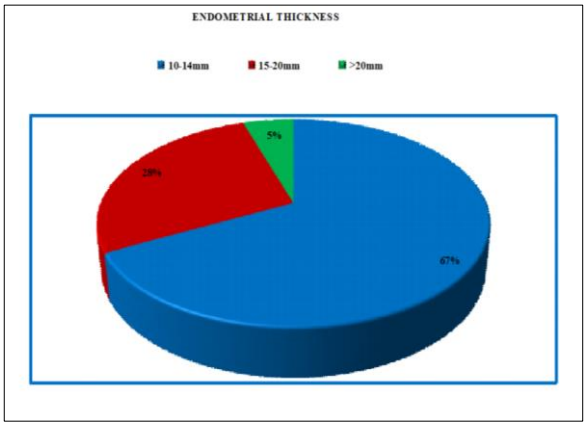

Figure 1: Distribution based on endometrial thickness.

Most patients didn't have any medical disorders. Others had hypertension (5%), diabetes mellitus (7.5%) and bronchial asthma (2.5%). Of the cases who underwent

endometrial sampling, 54 patients (67%) had ET 10 mm, 22 patients (28%) had ET 15 mm and 4 patients (5%) had ET >20 mm.

Table 4: Distribution of histopathology report by Pippelle's biopsy.

Pipelle Biopsy	N	%
SHWOA	7	8.8
SE	14	17.5
PE	34	42.5
CHWOA	4	5
DPE	6	7.5
SHWA	7	8.8
IRE	3	3.8
IA	4	5
CA	1	1.3

Table 5: Distribution based on TVS findings.

Endometrial findings in TVS	N	%
Normal	42	52.5
Endometrial hyperplasia	25	31.3
Endometrial polyp	1	1.3
Submucosal fibroid	7	8.8
Adenomyosis	5	6.3

Table 6: Correlation of histopathology and endometrial thickness.

HPE	Endometrial thickness		
	10-14 mm	15-20 mm	>20 mm
SHWOA	4	1	2
SE	7	7	0
PE	24	10	0
CHWOA	2	1	1
DPE	5	1	0
SHWA	6	1	0
IRE	3	0	0
IA	3	1	0
CA	0	0	1

P value=0.001

Of the cases who underwent endometrial sampling, 34 (42.5%) cases showed proliferative endometrium (PE), 14 (17.5%) showed secretory endometrium (SE), 7 (8.8%) showed simple hyperplasia without atypia (SHWOA), 6 (7.5%) showed disordered proliferative endometrium (DPE), 4 (5%) showed complex hyperplasia without atypia (CHWOA), 3 (3.8%) showed irregular endometrium (IRE). One case was diagnosed with endometrial carcinoma (CA) and 4 (5%) samples were inadequate (IA) (Table 4). As per the TVS findings, 42 (52.5%) subjects had normal findings. 25 (31.3%) showed endometrial hyperplasia, 7 (8.8%) had submucosal fibroid, 5 (6.3% had adenomyosis and 1 (1.3%) had endometrial polyp (Table 5). After the final diagnosis for the causes of abnormal uterine bleeding following transvaginal scan and histopathological reports. Out of all the 80 study subjects, 15 (19%) cases were surgically managed, medical management was given for 27 (34%) cases, and the remaining 38 (47%) cases underwent surgical management following failed medical management. This study showed that comparison of endometrial thickness found in transvaginal scan and histopathology reports was statistically significant (Table 6).

DISCUSSION

Heavy menstrual bleeding is responsible for majority of the gynecological consultations in the perimenopausal age group. Two thirds of all hysterectomies are due to AUB. In this age group, thorough evaluation is a must to rule out endometrial cancer or its precursor lesion-endometrial hyperplasia. Endometrial sampling should be done to evaluate abnormal bleeding in women who are at risk for endometrial pathology, including polyps, hyperplasia, or carcinoma. Endometrial sampling is mandatory in the evaluation of anovulatory bleeding in women older than 45 years or in younger women who are obese, those with a history of prolonged anovulation, or in those who do not respond to medical therapy.[6] EIN emphasizes on malignant potential of precancerous endometrial pathology. It is a more accurate and reproducible way to predict progression to cancer recognized by ACOG.[7] EIN describes all endometrium delineated as premalignant by a combination of 3 features i.e., glandular volume, architectural complexity and cytologic abnormality.[8] This study includes 80 perimenopausal women with abnormal uterine bleeding. Sonographic and histological assessment of the endometrium is the main mode of diagnosis in the current practice.

In this study, out of 80 study subjects about 54% belonged to the age group of range 40-44 years. According to age distribution in a study by Jain et al maximum number of cases between age group of 40 to 44 was 48%, and 38% of cases between age group of 45-49 years, suggesting abnormal uterine bleeding in perimenopausal women is common.[9] Varadarajan et al in their study reported that majority of cases (56.0%) belonged to the age group 40-43 yrs.[10] Verma et al also reported that 41% of cases belongs to age group 44 to 47 years.[11] In our study majority of patients presented with abnormal uterine bleeding were multipara, which is similar to study done by Pillai et al.[12] In this study, the most common presenting symptom was menorrhagia (33.8%). Studies done by Patil et al and Bhosale et al found the most common pattern of abnormal uterine bleeding to be menorrhagia.[13-16] In Pillai et al study, 46.5% of cases had menorrhagia followed by menometrorrhagia at 21.5% which is similar to the study conducted by Jetley et al.[12,14] The complaints presented were with varying duration: <30 days (47.5%), 30 days- 6 months (36.3%), 6 months-1 year (8.8) and more than 1 year (7.5%). In this study, based on findings of transvaginal scan, endometrial thickness was measured as follows: 67.5% cases showed 10-14 mm, 27.5% cases showed 15-20 mm and >20 mm were 5%. The study by Chatapavit et al concluded that malignant pathology in

perimenopausal women with abnormal uterine bleeding was less likely with endometrial thickness of 8 mm or less. In study by Jain et al no endometrial pathology was found with endometrial thickness 5 to 8 mm.[9] Study done by Veena BT revealed normal endometrium in 45% with endometrial thickness less than 9 mm.[15] The TVS findings of our study was also correlatable with the Pillai et al study.[12] The most common finding on histopathological examination was Proliferative endometrium in a study conducted by Pillai et al which was similar to our study.

Jetley et al study showed that the most common finding was secretory endometrium (32.4%) followed by proliferative endometrium.[14] In our study proliferative endometrium was the most common endometrial histopathology pattern of AUB, which was found in 57% of our cases. In Patil et al study, endometrial hyperplasia (40%) was most commonly associated with AUB.[15] Study done by Bhosle et al showed 17.8% of cases with simple hyperplasia.[16] In study by El-khayat et al among those who had endometrial thickness of 20 mm or greater, hyperplasia was found only in 20%.[17-19] Whereas endometrial polyp was the cause in 40% and in the remaining 40% the etiology was both endometrial polyp and hyperplasia. This is in concurrence with Deckardt et al who studied histological diagnosis in women complaining of perimenopausal bleeding and related endometrial thickness obtained by endo-vaginal scanning in a study comparing hysteroscopy, TVS and D&C for the diagnosis of intrauterine pathology.[20]

Limitations

Limitations of current study were; the Pipelle's endometrial aspiration is not accurate as the sample is not taken from focal lesion and the study included small number of samples.

CONCLUSION

There is high incidence of intracavitary uterine pathology in patients presenting with abnormal uterine bleeding. Dilatation and curettage are a blind procedure requiring hospitalization and general anesthesia, which can be replaced by an alternate safe, non-invasive and valid technique for evaluating the endometrial pathology in women with perimenopausal bleeding. Pipelle's aspiration is an office-based procedure, well tolerated by patients which can be done without the need for anaesthesia in out patients and is the accepted first step in evaluating a woman with suspected endometrial pathology with abnormal uterine bleeding. It can overcome the limitations of dilatation and curettage. EIN emphasizes on the malignant potential of endometrial precancer and is more accurate and reproducible way to predict progression to cancer. Transvaginal sonogram is a simple, convenient and non-invasive way to indirectly visualize the endometrial cavity. If Trans vaginal scan is incorporated into gynecology office setting, along with bimanual pelvic examination, it can enhance our diagnosis of uterine pathology. This study proves that findings of transvaginal scan correlates well with the endometrial histopathology findings.

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REFERENCES

1. Oehler MK, Rees MC. Menorrhagia: An update. Acta Obstet Gynecol Scand. 2003;82:405-22.
2. Liu Z, Doan QV, Blumenthal P, Dubois RW. A systematic review evaluating health-related quality of life, work impairment, and healthcare costs and utilization in abnormal uterine bleeding. Value Health. 2007;10:183-94.
3. ACOG committee. Management of acute abnormal uterine bleeding in nonpregnant reproductive-aged women. Obstet Gynecol. 2013;121:891-6.
4. Munro E. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. Int J Gynecol Obstet. 2018;3:1-16.
5. Berek JS. Adult Gynecology: Reproductive years. 16th ed. USA: Berek & Novaks; 2015.
6. Committee on Practice Bulletins Gynecology. Early pregnancy loss. Obstet Gynecol. 2015;125(5):1258-67.
7. The American College of Obstetricians and Gynecologists Committee Opinion no. 631. Endometrial intraepithelial neoplasia. Obstet Gynecol. 2015;125(5):1272-8.
8. Schorge A, John O, Williams J. Endometrial Cancer. In: Williams Gynecology. 4th ed. USA: The Mc-Graw Hill; 2010:700-2.
9. Jain M, Chakraborty S. Evaluation of abnormal uterine bleeding with transvaginal sonography. Int J Reprod Contracept Obstet Gynecol. 2017;6:23-9.
10. Varadarajan R, Sreekantha SM. Role of hysteroscopy in abnormal uterine bleeding in perimenopausal age group. J Evol Med Dent Sci. 2013;2(10):1504-9.
11. Verma U, Garg R, Singh S, Yadav P, Rani R. Diagnostic approach in perimenopausal women with abnormal uterine bleeding. J South Asian Feder Menopause Soc. 2014;2(1):12-4.
12. Pillai SS. Sonographic and histopathological correlation and evaluation of endometrium in perimenopausal women with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol. 2014;3:113-7.
13. Patil R, Patil RK, Andola SK, Laheru V, Bhandar M. Histopathological spectrum of endometrium in dysfuctional uterine bleeding. Int J Biol Med Res. 2013;4(1):2798-801.
14. Jetley S, Rana S, Jairajpuri ZS. Morphological spectrum of endometrial pathology in middle aged women with atypical uterine bleeding a study of 219

cases. J Midlife Health. 2013;4:216-20.
15. Veena BT, Shivalingaiah N. Role of transvaginal sonography and diagnostic hysteroscopy in abnormal uterine bleeding. JCDR. 2014;8(12):6.
16. Bhosle A, Fonseca M. Evaluation and Histopathological Correlation of Abnormal Uterine Bleeding in Perimenopausal Women. Bombay Hospital J. 2010;52(1):69-72.
17. Berek JS. Uterine Cancer. 16th ed. USA: Berek & Novaks; 2015.
18. Epstein E, Ramirez A, Skoog L, Valentin L. Transvaginal sonography, saline contrast sonohysterography and hysteroscopy for the investigation of women with postmenopausal bleeding and endometrium >5 mm. Ultrasound Obstet Gynecol. 2001;18:157-62.
19. El-khayat W, Sleet ME, Mahdi EY. Comparative study of transvaginal sonography and hysteroscopy for the detection of pathological endometrial lesions in women with perimenopausal bleeding. Middle East Fertil Soc J. 2011;16(1):77-82.
20. Deckardt R, Lueken RP, Gallinat A, Möller CP, Busche D, Nugent W, et al. Comparison of transvaginal ultrasound, hysteroscopy, and dilatation and curettage in the diagnosis of abnormal vaginal bleeding and intrauterine pathology in perimenopausal and postmenopausal women. J Am Assoc Gynecol Laparoscop. 2002;9(3):277.

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