



A CLINICAL STUDY OF PERIMENOPAUSAL UTERINE BLEEDING

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ABSTRACT

Aims: To determine the role of transvaginal ultrasonography in perimenopausal women with abnormal uterine bleeding and its correlation with histopathology. **Materials and Methods:** All cases of abnormal uterine bleeding in perimenopausal age group attending the Gynaecology Out Patient Department (GOPD) for check up during the period of the study fulfilling the inclusion criteria were enrolled in the study. All cases underwent TVS and endometrial thickness was noted for all patients followed by dilatation and curettage. Endometrial tissue obtained was sent for histopathology examination. **Results:** 81.8% cases of AUB belonged to the age 40 to 49 years. The most common endometrial pattern was secretory phase (43.6%) and most common endometrial pathology was simple hyperplasia without atypia (10.9%). Endometrial hyperplasia seen in 14.5% cases and endometrial carcinoma seen in only one case (0.9%). The values of endometrial thickness at which endometrial hyperplasia was commonly seen was 8 to 10mm. But the p value for patients with 8mm endometrial thickness as cut off for hyperplasia was 0.075 that was not statistically significant. **Conclusion:** In our study, the endometrial thickness at which endometrial hyperplasia was seen was >8mm and most common endometrial pathology was simple hyperplasia without atypia. Thus, all perimenopausal women with an endometrial thickness of more than 8mm should be considered for dilatation and curettage and further evaluation. **Clinical Significance:** AUB is a common diagnosis in perimenopausal women attending gynaecologic OPD. This study attempts to find the cause of AUB in a non-invasive way and to correlate clinical symptoms with diagnosis; so that invasive diagnostic and unnecessary surgeries can be avoided.

KEYWORDS: AUB, Endometrial Hyperplasia, Perimenopausal women.

AIMS AND OBJECTIVES

To determine the role of transvaginal ultrasonography (TVS) in perimenopausal women presenting with abnormal uterine bleeding and its correlation with histopathology.

INTRODUCTION

Abnormal uterine bleeding (AUB) is commonly seen in perimenopausal women and is not a well defined entity. Abnormal uterine bleeding not only affects the quality of life but can have serious adverse consequences like anaemia or malignancy.

The definition of AUB as stated by Goldstein et al^[1] is; "Patients presenting with either metorrhagia that is uterine bleeding at irregular intervals, particularly

between the expected menstrual periods or with menorrhagia that is abnormally heavy bleeding at menstruation either in duration or flow volume or both."

Women mostly present to gynaecologists when there is a deviation from their normal menstrual cycles. This deviation is seen in due to either hormonal or neoplastic changes which can be benign or malignant. So, for the apt management of AUB a proper workup is needed to find the its cause. Over the decades, many tests have evolved for diagnosis of AUB. From dilation and curettage (D&C) to the recent immunohistochemical markers.^[2] The relative accuracy of these tests varies.

TVS is often used for screening of AUB. It is a cost effective procedure as well as less invasive as compared to blind endometrial biopsy. The disadvantage of

ultrasound includes its non specificity. It is not a reliable tool to differentiate between benign proliferation or hyperplasia or polyps or cancer. In 5 -10 % of women endometrial lining is not visible on ultrasound.^[3]

D&C is relatively inexpensive and accurate as an office procedure. The disadvantage is that its an invasive procedure and sometimes the tissue obtained may not be sufficient for histopathological analysis.

METHODS

The present study was undertaken in the Department of Obstetrics and Gynaecology of North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences (NEIGRIHMS), Shillong. The study period was from 1st January 2015 to 30th June 2016.

STUDY POPULATION

Inclusion Criteria

All cases of abnormal uterine bleeding in the perimenopausal age group that is 40 years and above and who have not attained menopause, attending the Gynaecology Out Patient Department (GOPD) at NEIGRIHMS for check up during the period of the study.

Exclusion Criteria

1. Age less than 40 years.
2. Women on hormonal treatment at the time of first presentation.
3. Women with intrauterine device in situ.
4. Women with history of bleeding disorders
5. Pregnancy

Methods of collection of data

- **Study design:** Prospective study.
- **Sample size:** Cases of abnormal uterine bleeding attending Gynaecology Out Patient Department (GOPD) at NEIGRIHMS for check up during the period of the study& fulfilling the inclusion criteria.

Study Instrument: Transvaginal ultrasonography using 7.5 MHz Mindray 140 A TVS probe. Ultrasound was done transvaginally.

1. Endometrial thickness was measured and any abnormal pathology was noted.
2. Uterus was completely assessed.
3. Endometrial biopsy was then taken for all patients.

Data Collection: Relevant data was collected from the patients presenting at GOPD in NEIGRIHMS to assess who can be included as candidates for the study as per the inclusion criteria. Written informed consent was taken from all patients enrolled in the study. Transvaginal ultrasound and endometrial biopsy was done for all subjects. The biopsy specimens were sent to Department of Pathology for evaluation.

RESULTS

A total of 110 cases belonging to the age; 40 years and above who have not achieved menopause were studied. These patients attended the Department of Obstetrics and Gynaecology of North Eastern Indira Gandhi Regional Institute of Health and Medical Sciences, Shillong over a period of one and a half years from 1st January 2015 to 30th June 2016.

Age Distribution of the study population: 83.6% of the study population belonged to the age of 40 to 49 years and 16.3% of the study population belonged to age 51 years and above. In our study the majority of the patients presenting with AUB belonged to the age group of 40-49 years.

Parity and AUB

The incidence of AUB was highest (41.8%) in females of parity 4 and above, followed by parity 2 (30%). 23.6% of the study population belonged to parity 3 and only 4.5% of the population belonged to parity of 1.

Menstrual Pattern and AUB

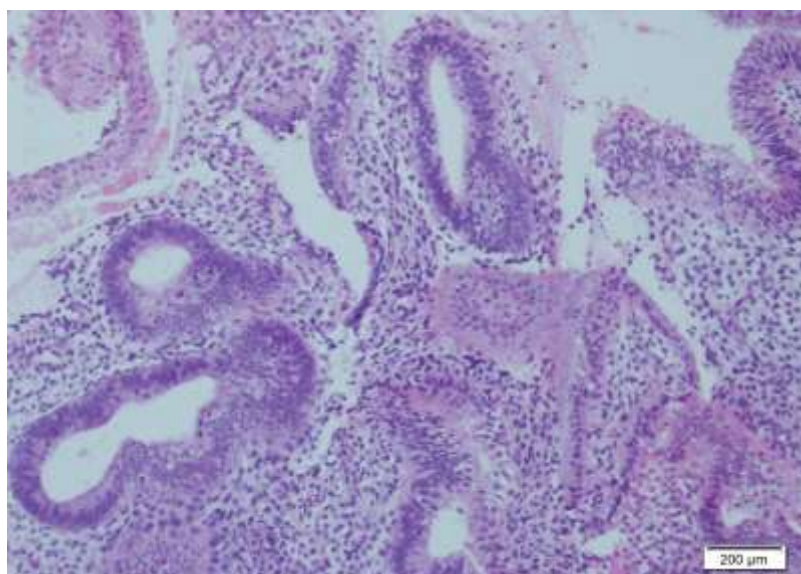
40.9% of the study population had only menorrhagia as their chief complaint. The next most common complaint was polymenorrhagia (33.6%) followed by polymenorrhea (22.7%). 2.7% of the study population had both menorrhagia and dysmenorrhea.

Medical Complications and AUB: The most common medical/surgical disease present in our study group was hypothyroidism (3.6%). Hypertension and Diabetes Mellitus were the next two most associated diseases with prevalence of 2.7% and 1.8% respectively.

The most common pathological HPE report seen in our study was simple hyperplasia without atypia that was found in 10.9% of the cases. Out of these 10.9% cases; 10% belonged to 40 to 49 years age group and only 0.9% belonged to 50 to 59 years age group. The second most common pathological HPE report was disordered proliferative endometrium that was present in 4.5% of the cases. Out of these 4.5%; 1.8% belonged to 40 to 49 years age group and 2.7% cases belonged to 50 to 59 years age group. The third most common pathological histopathology report was seen in 3.6% cases and all these cases belonged to the age group of 40 to 49 years.

Table 1: Endometrial Biopsy Histopathology-Pathological Findings in different Age groups.

	Age group				Total	
	40-49 years		50-59 years		Frequency	Percent(%)
	Frequency	Percent(%)	Frequency	Percent(%)		
Simple hyperplasia without atypia	11	10	1	0.9	12	10.9
Disordered proliferative phase	2	1.8	3	2.7	5	4.5
Secretory phase with chronic endometritis	4	3.6	0	0	4	3.6
Cystoglandular hyperplasia	1	0.9	1	0.9	2	1.8
Proliferative phase with chronic endometritis	1	0.9	1	0.9	2	1.8
Complex hyperplasia without atypia	1	0.9	0	0	1	0.9
Cystic atrophy of endometrium	0	0	1	0.9	1	0.9
Luteal phase defect	0	0	1	0.9	1	0.9
Simple hyperplasia with atypia	1	0.9	0	0	1	0.9
Endometrial Carcinoma	0	0	1	0.9	1	0.9
Total/110	21	19.8	9	7.2	30	27



Picture 1: Simple hyperplasia without atypia.

Endometrial Biopsy Histopathology-Pathological Findings in different Age groups

Cystoglandular hyperplasia was seen in 1.8% cases and out of these 0.9% belonged to 40 to 49 years age group and 0.9% belonged to 50 to 59 years age group. Proliferative phase with chronic endometritis was also seen in 1.8% cases; out of these 0.9% belonged to 40 to 49 years age group and 0.9% belonged to 50 to 59 years age group. Complex hyperplasia without atypia and simple hyperplasia with atypia was seen only in one case that is 0.9% belonging to 40 to 49 years age group. Cystic atrophy of the endometrium and luteal phase defect was also found in one case (0.9%) that belonged to the age group of 50 to 59 years. Endometrial carcinoma was also reported in one case (0.9%) belonging to the age group of 50 to 59 years.

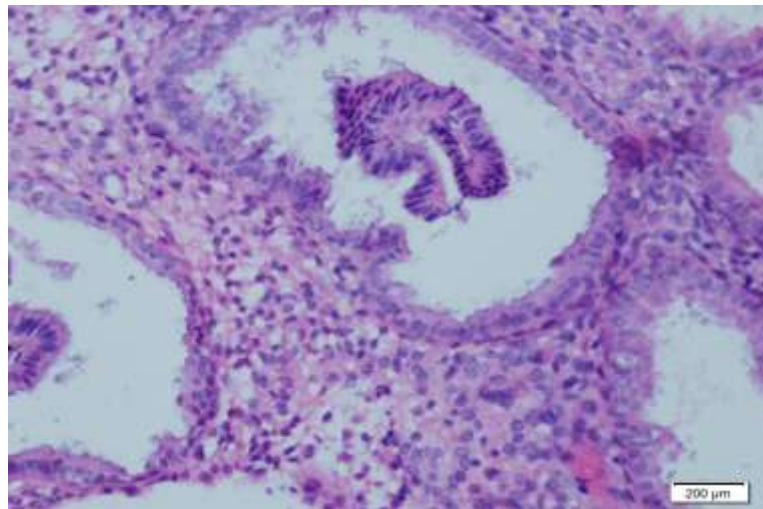
Endometrial Biopsy Histopathology-Non Pathological Findings in different Age groups

The most common normal HPE report found in our study was secretory phase of endometrium. It was seen in 55.45% cases; with 47.3% cases belonging to the age

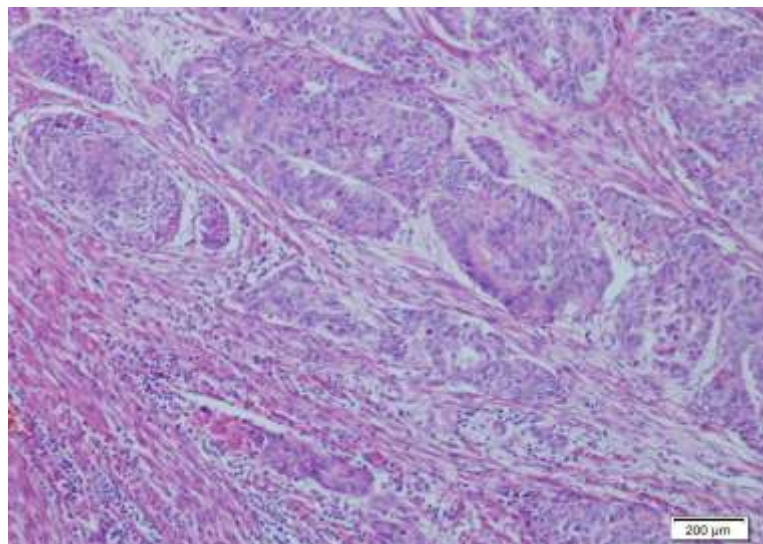
group of 40 to 49 years and 8.1% cases belonging to 50 to 59 years age group. Proliferative phase of endometrium was reported in 13.63% cases. Out of these 15 cases, 11.8% belonged to 40 to 49 years age group and 1.8% cases belonged to 50 to 59 years age group. Non-secretory glands phase of endometrium was seen in only 2 cases (1.8%) that belonged to the age group of 40 to 49 years. Degenerative endometrium was seen in 0.9% cases belonging to 50 to 59 years age group. Menstruating phase endometrium was seen in only one case (0.9%) that was in the age group of 40 to 49 years.

Table 2: Endometrial Biopsy Histopathology-Non Pathological Findings in different Age groups.

	Age group				Total	
	40-49 years		50-59 years		Frequency	Percent (%)
	Frequency	Percent (%)	Frequency	Percent (%)		
Secretory phase	52	47.3	9	8.1	61	55.45
Proliferative phase	13	11.8	2	1.8	15	13.63
Non secretory glands	2	1.8	0	0	2	1.8
Degenerative endometrium	1	0.9	0	0	1	0.9
Menstruating phase	0	0	1	0.9	1	0.9
Total/110	68	61.8	12	10.8	80	72.6



Picture 2: Shows well developed secretory phase.



Picture 3: Shows endometrial carcinoma with invasion in myometrium.

ET comparison with pathological HPE report

The mean ET for the most common pathological HPE report that is simple hyperplasia without atypia was 10.33mm and the 95% confidence interval was between 8.57 to 12.10mm. The next most common pathological HPE report was disordered proliferative phase of endometrium with a mean ET of 9mm and the 95% confidence interval was between 6.09 to 11.91mm. Secretory phase of endometrium with chronic endometritis had a mean ET of 5mm and cystoglandular

hyperplasia had a mean ET of 9mm. The mean ET of proliferative phase endometrium with chronic endometritis was 7mm and the same for complex hyperplasia without atypia was 9mm. Cystic atrophy of endometrium and luteal phase defect of endometrium had a mean ET of 3 and 8mm respectively. Simple hyperplasia with atypia was found in only one case with an ET of 8mm and endometrial carcinoma was also seen in one case with an ET of 16mm.

Table 3: ET comparison with pathological HPE report.

HPE REPORT	N (frequency)	Minimum ET	Maximum ET	Mean ET (mm)	Std Deviation	Std. Error	95 % confidence interval	
							Lower Bound	Upper Bound
Simple hyperplasia without atypia	12	6	15	10.33	2.774	0.801	8.57	12.10
Disordered proliferative phase	5	7	13	9	2.345	1.049	6.09	11.91
Secretory phase with chronic endometritis	4	5	5	5	0	0	5	5
Cystoglandular Hyperplasia	2	8	10	9	1.414	1	-3.71	21.71
Proliferative phase with chronic endometritis	2	5	9	7				
Complex hyperplasia without atypia	1	9	9	9				
Cystic atrophy of endometrium	1	3	3	3				
Luteal phase defect	1	8	8	8				
Simple hyperplasia with atypia	1	8	8	8				
Endometrial Carcinoma	1	16	16	16				
TOTAL	30							

The p value was calculated with 8mm endometrial thickness as cut off showing hyperplasia. The value came out to be 0.075 that was not statistically significant. 8mm cutoff was taken as endometrial hyperplasia was commonly seen at this endometrial thickness.

DISCUSSION

Parity and AUB

Archana Bhosle, Michelle Fonseca^[4] (2010) studied a total of 112 patients, out of which 32.18% belonged to second parity. Patil et al^[5] in 2013 published similar results with 71.58% of AUB cases belonging to second parity.

But in our study, AUB was more commonly seen amongst grand multipara that contributed to 42.8% of all the cases. Since the parity amongst people in Shillong is high, so AUB was more commonly seen in grand multiparas.

Chief complaints and AUB

Patients with AUB come with varied complaints. Archana Bhosle, Michelle Fonseca^[4] (2010) studied 112 patients of AUB, amongst who 53.3% presented with menorrhagia. Patil et al^[5] (2013) also had menorrhagia as the most common menstrual pattern that was seen in 73.16% of the cases.

Our study also showed similar results with 40.9% patients presenting with the chief complaint of menorrhagia. Though, Abid M et al (2014)^[6] studied 241 patients of AUB with the most common chief complaint of polymenorrhea that was present in 30% cases.

Other associated comorbidities and AUB

In our study, hypothyroidism was seen associated with AUB in 3.6% cases. Also, 2.7% cases had hypertension and another 1.8% had type 2 diabetes mellitus.

Mukhajanand, Ghosh et al (1985)^[7] also showed that the incidence of hypothyroidism is 44.44% in women presenting with menstrual abnormalities and Chatfield and Watson (1970)^[8] observed that uterine aspiration cytology was of value for screening patients of abnormal uterine bleeding with diabetes, obesity and hypertension.

HPE pattern and AUB

The spectrum of HPE report in patients presenting with AUB has been discussed here. The most common endometrial pattern was non-secretory in studies conducted by Anusuya Dass and Chugh^[9,10] and Joshi and Deshpande^[11,12] in 1964 that was 41.4% and 54% respectively. Also, Patil et al^[5] in 2013 reported non secretory endometrial pattern as the most common type in 22.10% cases. In studies conducted by Archana Bhosle, Michelle Fonseca,^[4] Doraiswami et al,^[13] Vaidya S et al,^[14] Soleymani E et al,^[15] Abid M et al^[6] and Kim et al;^[16] the most common endometrial pattern seen was normal cyclical pattern.

In our study also, 55.45% cases had secretory endometrium as the most common HPE report which also comes under normal cyclical endometrium.

The most common endometrial pathology was also studied by various authors. Doraiswami et al,^[13] Vaidya S et al,^[14] and Soleymani E et al,^[15] found that the most common endometrial pathology in AUB patients was disordered proliferative endometrium and it was found in 20.5%, 13.4% and 15.4% of the cases respectively. Patil et al^[5] in 2013 studied endometrial pattern in 190 cases and 40% of these cases had endometrial hyperplasia. Abid M et al^[6] in their study in 2014 included 241 patients and out of these 241 cases, 65 cases had hormonal imbalance as the most common endometrial pathology that was in 27% cases. Kim et al^[16] in 2016 also studied 162 cases of AUB and found that the most

common endometrial pathology was endometrial polyps that was seen in 47.5% cases.

In our study, simple hyperplasia without atypia was seen in 10.2% cases that came out to be the most common endometrial pathology.

The incidence of endometrial hyperplasia in various studies was also studied. This incidence is variable. In our study, endometrial hyperplasia was seen in 14.5% cases. Patil *et al*^[5](2013) reported the highest incidence of endometrial hyperplasia that is 40%, whereas Soleymani E *et al*^[15] have reported the least incidence of only 2.5% in 2013.

ET with HPE report

Endometrial thickness was compared with all pathological HPE reports in our study. Simple hyperplasia without atypia was found to have a mean ET of 10.33mm with 95% confidence interval between 8.57 to 12.10mm. Also, it was observed that most of the cases with hyperplasia belonged to the ET group of 8 to 10mm and more than 10mm.

Kim *et al*^[16] (2016) in their study also compared thickened endometrium with endometrial hyperplasia. But, this association was not found to be significant (P value = 0.43) as it was in our study.

CONCLUSION

AUB is one of the most common gynaecological presentations seen in perimenopausal women which can lead to a lot of distress to the patient.

TVS is a screening investigation for all patients which can help to diagnose any pelvic pathology causing AUB. Endometrial thickness measurement gives us guidance for further management of the patient.

Dilatation and curettage is a diagnostic tool for patients with AUB. It is a minor procedure and the endometrial pattern is studied and analyzed accordingly.

In our study, the endometrial thickness at which endometrial hyperplasia was mostly seen was more than 8mm and the most common pathological endometrial pattern was simple hyperplasia without atypia. Hence, in women with AUB, ET less than 8mm, it may be possible to keep them on follow up or treat for hormonal imbalances, if any found during the course of investigation. However all perimenopausal women with an endometrial thickness of more than 8mm, should undergo a dilatation and curettage for further evaluation.

But as our p value was 0.74, we conclude that the role of TVS in AUB patients belonging to the perimenopausal age group and its correlation to histopathology is not statistically significant and further studies are need for evaluation of the same.

Clinical Significance: AUB is a common diagnosis in gynaecology outpatient setting. Perimenopausal women besides adolescents are vulnerable to anovulatory menstrual cycles. Many of these patients are exposed to unnecessary diagnostic and surgical interventions. This study attempts to find the cause in a non-invasive way to correlate clinical symptoms with diagnosis; so that invasive diagnostic and unnecessary surgeries can be avoided.

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Contribution to authorship

Dr. Megha Nandwani; Ex-post graduate student of NEIGRIHMS conducted this study over a period of one and a half years. From identifying the patients in out patient department to their history taking, entire work-up including transvaginal ultrasound and dilatation and curettage was done by her. The histopathology reports were collected by her and evaluation of the entire data and finally preparation of this manuscript was done by the author.

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