



THE STUDY OF ENDOMETRIAL THICKNESS BY TRANSVAGINAL USG WITH ITS HISTOPATHOLOGY CORRELATION IN ABNORMAL UTERINE BLEEDING

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ABSTRACT

Background: Abnormal uterine bleeding is a frequently encountered complaint in perimenopausal women ^(1,2) and also the most common cause of hysterectomy in this age group ⁽³⁾.

Objective: The study of endometrial thickness by transvaginal USG with its histopathology correlation in abnormal uterine bleeding.

Methods: A prospective study of 50 perimenopausal women with complaint of AUB with age group ranging from 40-51 years, those attending to the department of gynecology at Rajah Muthiah Medical College and Hospital from 2015-2017. Clinical examination between parameters were analyzed. TVS study of endometrial pattern and thickness was done followed by dilatation of curettage (D&C). Histopathology examination report was correlated with ultrasonography.

Results Out of 50 women, 62% belonged to the age group 40-45 years and 66% patients presented with menstrual complaints of menorrhagia which accounts for the common menstrual complaint 60% patient had endometrial thickness between 5.1-8mm. most common type of endometrial pattern is proliferative endometrium. Sensitivity and specificity of TVS is 81.8% and 100%.

Conclusion

1. Patient with AUB should be investigated promptly with transvaginal sonogram, as first line of investigation which is non invasive, safe and cost effective.
2. In perimenopausal age group when endometrial thickness is <8mm – it is correlated well with the histopathology report. In patients with endometrial thickness >8mm, a histopathological study of endometrium is warranted to rule out atypical changes or endometrial malignancy.
3. This study helps us to individualize treatment protocols between medical and surgical intervention.

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INTRODUCTION

Abnormal uterine bleeding (AUB) is defined as any deviation in terms of cycle, duration of bleeding, amount of blood loss or combination of all. It includes both DUB (i.e. due to functional causes) and bleeding from structural causes like fibroids, polyp and due to endometrial pathology. Endometrium represents a plethora of changes that balanced by the complex interplay of endogenous steroids and other factor.

Life expectancy is now increased and we are in era of geriatric medicine. Preventive medicine is gaining more importance as more women are entering the climacteric phase apart from facing psychological derangement they are scared by taboos about malignancies of genital tract.

These women might present with abnormal bleeding, anemia, pain, and occasionally infertility ^(4,5). Diagnostic procedures for anatomic changes and for endometrial carcinoma include ultrasonography, diagnostic hysteroscopy, sonohysterogram,

and dilation and curettage (D&C)⁽⁶⁾. Endometrial abnormalities are common diagnostic challenges facing the radiologist and referring gynecologist. For the evaluation of AUB, TVS plays an important role as the initial modality ⁽⁷⁾.

Hence imaging by transvaginal sonogram plays a pivotal role in arriving at the etiological diagnosis of abnormal uterine bleeding and for early diagnosis and treatment of endometrial hyperplasia and endometrial carcinoma.

MATERIAL AND METHODS

This is a prospective study done on 50 perimenopausal women with a complaint of AUB in the age group ranging from 40-51 years who attended the OPD at Rajah Muthiah Medical College and Hospital, Chidambaram from 2015-2017.

All the patients were included in the study after taking prior informed consent.

Inclusion Criteria

1. Women of more than 39yrs age, before menopause (between 39yrs to before menopause) with menstrual irregularities.
2. With no detectable pelvic pathology.

Exclusion Criteria

1. Patient with abnormal uterine bleeding in other age group.
2. Carcinoma of genital track.
3. Active genital tract infection.
4. Severe medical condition precluding study like uncontrolled hypertension DM.
5. Pregnancy with related cause of bleeding PV.

They were examined with detailed clinical history, general examination, pelvic examination, basic lab investigations & transvaginal sonogram done for endometrial pathology including the thickness of the endometrium & then admitted in the gynaec ward. Later they were subjected to fractional curettage in the premenstrual phase. Endometrial biopsy sent for histopathological study & results correlated with the transvaginal sonogram.

RESULTS AND ANALYSIS

Table 1 Age Distribution

Age	No. of cases	Percentage
40-45 yrs	31	62.0
46-49 yrs	17	34.0
50-51 yrs	2	4.0
Total	50	100.0

50 cases in the age group of 40-51 years were included in the study. 62% of patients belong to the age group 40-45 years. 34% of patients correspond to age group 46-49 years.

Table 2 Duration of symptoms

Symptoms	No. of cases	Percentage
<15days	2	4.0
15-30days	3	6.0
1-2 months	9	18.0
2-6 months	14	28.0
>6 months	22	44.0
Total	50	100.0

Duration of symptoms was more than 6 month (44%) in perimenopausal women.

Table 3 Menstrual pattern

Menstrual pattern	No. of cases	Percentage
Menorrhagia	33	66.0
Polymenorrhagia	10	20.0
Polymenorrhoea	5	10.0
Menometrorrhagia	2	4.0
Total	50	100.0

Majority 66% in perimenopausal presented with Menorrhagia and 4 % presented with menometrorrhagia.

Table 4 Parity

Parity	No. of cases	Percentage
Nulliparity	2	4.0
Uniparity	6	12.0
Parous	42	84.0
Total	50	100.0

Majority 84 % of perimenopausal women were multiparous.

Table 5 BMI

BMI	No. of cases	Percentage
Non Obese	23	46.0
Obese	27	54.0
Total	50	100.0

About 54 % of perimenopausal women were obese

Table 6 Endometrial thickness

ET	No. of cases	Percentage
<5mm	4	8.0
5-8mm	30	60.0
8.1-12mm	10	20.0
12.1-16mm	3	6.0
16.1-24mm	3	6.0
Total	50	100.0

Among 50 perimenopausal women, 30 cases (60.0%) endometrial women of 5-8mm, 10 cases (20.0%) women shows endometrial thickness of 8.1-12mm, 3 cases (6.0%) shows endometrial thickness of 12.1-16mm and 3 cases (6.0%) shows endometrial thickness of 16.1 mm -24mm.

Table 7 Histopathology Report

HP Result	No. of cases	Percentage
Proliferative	30	60
Secretory	10	20
Irregular Shedding	4	8.0
Cystoglandular hyperplasia	1	2.0
Simple hyperplasia	3	6.0
Complex hyperplasia	1	2.0
Adenocarcinoma	1	2.0
Total	50	100

Most common type of endometrial patterns proliferative endometrium. Out of 50 perimenopausal women, 60% had proliferative type of endometrium, 20% women had secretory pattern 8% had irregular shedding 1% cystoglandular hyperplasia, 3% had simple hyperplasia, 1% women had adenocarcinoma.

Table 8 Comparison of endometrial thickness with Histopathology Report

HP Result	ET				
	<5mm	5-8mm	8.1-12mm	12.1-16mm	16.1-24mm
Proliferative	3(75.0%)	22 (73.3%)	5 (50%)	0 (.0%)	0 (0.0%)
Secretory	1 (25.0%)	7 (23.3%)	1 (10%)	1 (33.3%)	0 (0.0%)
Irregular Shedding	0 (0.0%)	1(3.3%)	3(30%)	0(0.0%)	0(0.0%)
Cystoglandular	0 (0.0%)	0 (.0%)	0 (.0%)	1 (33.3%)	0 (0.0%)
Simple hyperplasia	0 (0.0%)	0 (.0%)	1 (10%)	1 (33.3%)	1 (33.3%)
Complex hyperplasia	0 (0.0%)	0 (.0%)	0 (.0%)	0 (.0%)	1 (33.3%)
Adenocarcinoma	0 (0.0%)	0 (.0%)	0 (.0%)	0 (.0%)	1 (33.3%)

Chi-Square Tests

	Value	df	P value
Pearson Chi-Square	57.174	24	<0.001

Fig: 1 Comparison of endometrial thickness with Histopathology Report

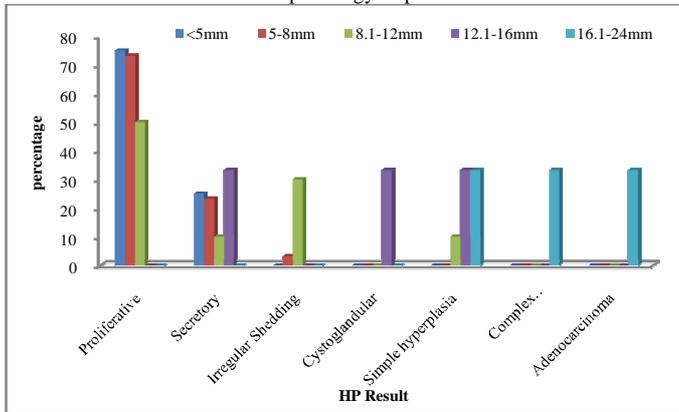


Table 9 Efficacy of TVS

TVS	HPR		Total
	Abnormal Positive	Normal Negative	
Abnormal Positive	9	0	9
Normal Negative	2	39	41
Total	11	39	50

True Positive	-	9
False positive	-	0
True negative	-	39
False negative	-	2
Sensitivity	-	81.82%
Specificity	-	100.00%
NPV	-	95.12%
PPV	-	100%
Accuracy	-	96%

DISCUSSION

Abnormal uterine bleeding is common in perimenopausal women. The etiology varies from simple dysfunctional uterine bleeding to benign lesion like polyp & malignancies. Apart from the clinical examination, various diagnostic modalities are available to confirm our diagnosis.

In our study the efficacy of transvaginal sonogram for diagnosing abnormal uterine bleeding and its correlation with histopathology of endometrium by fractional curettage were studied.

Totally of 50 cases in perimenopausal age group was enrolled in the study. Majority 31 cases (62%) are between 40 - 45 years. 17 cases (34%) are between 46-49 years and 2 cases (4%) are above 49. This study is closely related to archana bhosle, cornitese, Shoba S.Pillai *et al.* Archana Bhosle⁸ studied 112 perimenopausal women with abnormal uterine bleeding, where 76% were in the age group of 41-45, 2.6% were in group 46-50 and 2.6% in group >51. Shoba S.Pillai *et al* study report showed 40% were in the age group of 48 to51 years.

Cornitesc studied⁹ 256 perimenopausal patients and reported 35.5% incidence in age 41-45 and 64.5% incidence in group 46-52.

In our study, majority of women in perimenopausal age group 42 cases were multiparaious, 6 cases (12%) were unipara, 2 cases (4%) were of nulliparity which closely related to Prasanna Byna, Shireesha Siddular *et al* (2015). The study report showed out of 65 perimenopausal women 11 (16.9%) were primipara, 36 (55-38) were para, 18 (27-69%) were para 3+ above.

Majority of patients in perimenopausal age group with abnormal uterine bleeding after 6 month – 1 year. which was comparable to the study of Kathuria and Bhatnagar (50%).¹⁰

In our study most common presentation in perimenopausal age group was menorrhagia i.e. 33 cases (66%). Remaining patients in perimenopausal age group presented with polymenorrhagia 10 cases (20%), 2 cases (4%) with menometrorrhagia.

This finding was comparable with the study of Shobha S. Pillai *et al* (2014), in which clinical presentation as menorrhagia in AUB evaluation revealed 46.5% respectively.

With regards to the pattern of bleeding, Bhosle (2010) said that maximum incidence was of menorrhagia (53.3%), followed by 28.2%, 12.2% and 6.5% with Polymenorrhagia intermenstrual bleeding and metrorrhagia respectively.

Measurement of endometrial thickness by transvaginal sonogram and results were correlated with histopathological reports.

In perimenopausal age majority 30 cases (60%) showed endometrial thickness between 5 to 8 mm whose histopathology report revealed 22 cases (73.3%) of proliferative pattern, 7 cases (23.3%) of secretory pattern. 1 cases (3.3%) of irregular shedding pattern 8 cases endometrial thickness between (8-12 mm) whose histopathology revealed 5 (62.5%) of proliferative pattern, 1 case 12.5%) of secretory pattern, 3 case of irregular shedding pattern, 1 case (12.5%) of simple hyperplasia, 6 cases showed endometrial thickness more than >12mm whose histopathology revealed, 2 case (53.3 %) of simple hypeplasia, 1 case (33 %) of secretory pattern, 1 case (33 %) of cystoglandular hyperplasia, 1 case (20 %) of complex hyperplasia and 1 case (20 %) of adenocarcinoma. This study report is closely related to Shoba S. Pillai and Prasanna Byna, Shireesh Siddule studies.

Shobha S.Pillai *et al* (2014)¹¹ Studied 88 women in the perimenopausal age group with AUB complaints study report showed 40% belonged to the age group of 48 to 51 year s and 46.5% patients with menstrual complaints of menorrhagia which accounts for the most common menstrual complaint.70.5% of the patients in the study group were para 2 or less 46.5% of patients had endometrial thickness in the range 5 to 9.9mm. Most common finding on HPE was proliferative endometrium 4.5% of cases revealed endometrial malignancy.

In our study majority 30 cases (60%) showed proliferative endometrium and 10(20%) of cases showed secretory endometrium, in comparison to study.

According to Bhosle, 66.1% had proliferative endometrium, 16.1% had Secretory endometrium and 17.8 % simple hyperplasia without atypia,

In perimenopausal age group sensitivity, specificity and accuracy is about 81.8%, 100% and 96% respectively.

Chapavit Get pook, *et al* 2007 they studied 110 women with abnormal uterine bleeding. They concluded that with an endometrial thickness cut off of 8 mm showed sensitivity of 83.9%, specificity of 58.8 %, NPV 90.4 % for abnormal endometrium on histopathology.

CONCLUSION

Patient with AUB should be investigated promptly with transvaginal sonogram, as first line of investigation which is non invasive, safe and cost effective. TVS helps to exclude other etiological benign causes of AUB like polyp, fibroid, missed IUCD, any adnexal pathology and its endometrial thickness which can be correlated with histopathology report.

In perimenopausal of age group endometrial thickness correlate well with histopathology report when endometrial thickness <8mm. In patients with endometrial thickness >8mm, a histopathological study of endometrium is warranted to rule out atypical changes or endometrial malignancy. TVS with HPE correlation helps us to identify atypical hyperplasia at the earliest which is a precursor of adenocarcinoma in 29%.

This study helps us to individualize treatment protocols between medical and surgical intervention. Histopathological examination is mandatory in all cases of AUB in perimenopausal age. 66.14% had benign pathology which can be managed by hormonal therapy or conservative surgical modalities which alleviates need for unnecessary hysterectomy.

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