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## Analysis of endometrial biopsy in abnormal uterine bleeding in tertiary care hospital

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### Abstract

Endometrial biopsies and curetting plays an important tool for diagnosis of endometrial pathology, whether benign, pre-malignant and malignant, and help the gynecologist to decide appropriate therapeutic strategy. The current study was carried out to document the histopathological appearances seen in endometrial biopsies, various patterns of bleeding, and their co-relation with endometrial pattern.

**Materials and Methods:** The study is hospital based retrospective study done on the patients presenting with chief complaints of Abnormal uterine bleeding (AUB) in the department of obstetrics and gynecology. Sri Venkateswara Medical College Tirupati, Andhra Pradesh, for period of 6 months July –December 2019 in the government maternity hospital. A total of 200 cases included in this study.

**Results:** Patients were sub divided into 5 groups, maximum number of patients are in the age group between 41-50 years that is 40% and least is 5.5% are more than 60 years. The most common pattern of bleeding was heavy menstrual bleeding (61 patients, 30.5%), least was infrequent menstrual bleeding was 9.5%. Among endometrial patterns, proliferative phase endometrium was the most common one, among patients with heavy menstrual bleeding proliferative endometrium (27 cases) is most common endometrial pattern observed. Endometrial carcinoma is mostly seen in postmenopausal bleeding (4 cases).

**Conclusion:** Endometrial biopsy is an important tool to diagnose gynecological conditions in patients presenting with AUB. Timely evaluation of AUB with histopathology can be lifesaving with early diagnosis and management.

**Keywords:** Endometrial biopsy, abnormal uterine bleeding, proliferative phase, secretory phase

### Introduction

A Menstruation is a very complex process involving estrogen and progesterone and their receptors, endometrial vasculature, endometrial vasoactive substances, processes of tissue break down and remodeling and endometrial repair and regeneration <sup>[1]</sup>.

Abnormal uterine bleeding (AUB) is that the pattern of bleeding that does not correspond with the amount, duration, and frequency of the flow of a regular menstrual cycle <sup>[2]</sup>.

AUB is the most common gynecological problems that gynecologists face, accounting for approximately 15-20% of office visits and 25% of gynecological operations <sup>[3, 4]</sup>. India, 30-50% gynecological OPD are AUB cases <sup>5</sup>. The main causes of AUB vary with age; in young women in the reproductive age group, it is mostly due to hormonal imbalance, while in peri-menopausal and post-menopausal women, AUB is generally due to hyperplasias and malignancies.

Histopathological characterization of endometrial biopsies and curetting by the light microscope is considered the standard tool for diagnosis of the causes of AUB, because of the relative ease and safety of obtaining samples, along with reasonable reporting time and diagnostic accuracy <sup>[2]</sup>. Endometrial curetting and biopsies exhibit a wide range of histopathological patterns due to normal and abnormal cyclical changes, drugs, hormones, infections, and malignancies <sup>[6]</sup>.

Treatment of abnormal uterine bleeding (AUB) is not complete without tissue diagnosis especially in a perimenopausal and postmenopausal women as they are at higher risk for endometrial carcinoma <sup>[7]</sup>.

**Aim:** To assess the outcome of endometrial biopsy in abnormal uterine bleeding

### Objectives

1. Histopathological examination of endometrial biopsy in abnormal uterine bleeding and to evaluate the spectrum of lesions in the endometrium.
2. To know the different causes of abnormal uterine bleeding in various age groups.

### Materials and Methods

#### Inclusion criteria

1. All women with abnormal uterine bleeding more than 40 years of age.
2. Women with <40 years with failed medical management or unexposed estrogen exposure

#### Exclusion criteria

1. Pregnancy and other related conditions
2. Blood disorders and Coagulopathy
3. The intrauterine contraceptive device in situ.

### Study method

The study is a hospital-based retrospective study done on the patients presenting with chief complaints of AUB in the department of obstetrics and gynecology, Sri Venkateswara medical college Tirupathi, Andhra Pradesh, for the period of 6 months 2019 July –December in the government maternity hospital. All women in the age group of 19 years and above who had presented with abnormal uterine bleeding and had undergone endometrial biopsy or curettage were included in the study.

Data on the age, presenting clinical features, the procedure is done, and the histopathological report was retrieved using records from gynecology OPD, gynecology ward, operation notes, patient case sheets, and pathology reports. Age, the pattern of bleeding, duration of abnormal uterine bleeding, and observed histopathological spectrums were recorded and classified.

Various patterns of abnormal uterine bleeding classified as follows: heavy menstrual bleeding, frequent menstrual bleeding, heavy or prolonged menstrual bleeding, intermenstrual bleeding, infrequent menstrual bleeding, postmenopausal bleeding.

Various endometrial patterns were classified as follows: Proliferative, Secretary, Atrophic, Unsatisfactory, Chronic Endometritis, Polyp, Hyperplasia, and Carcinoma. Endometrial Hyperplasia was classified according to World Health Organization (WHO), proposed initially by Kurman and Norris, into simple and complex based on architecture, and each was further subdivided into typical and atypical, based on cytology.

### Statistical analysis

1. The data will be entered in the MS Excel sheet and analyzed using Epi Info V7. statistical significance for continuous variables will be tested using student t-test and discrete variables using the CHI-SQUARE test. Frequencies will be described using percentages.

### Results

The present study included 200 patients of AUB in which endometrial biopsy was done. All the biopsies are done by dilatation and curettage using the standard technique.

**Table 1:** Age-wise distribution

Age	Number	Percentage
< 30 years	18	9
31-40 years	73	36.5
41-50 years	81	40
51-60 years	18	9
>60 years	10	5.5

Patients were subdivided into five groups, a maximum number of patients are in the age group between 41-50 years that is 40%, followed by 31-40 years that is 36.5%, and the least is 5.5% is more than 60 years.

**Table 2:** Bleeding pattern

Bleeding pattern	Number	Percentage
Heavy menstrual bleeding	61	30.5
Frequent menstrual bleeding	41	20.5
Heavy/prolonged bleeding	30	15
Inter menstrual bleeding	25	12.5
Infrequent menstrual bleeding	19	9.5
Postmenopausal bleeding	24	12.5
Total	200	100

The most common pattern of bleeding was heavy menstrual bleeding (61 patients,30.5%), followed by frequent menstrual bleeding was 20.5%, and heavy or prolonged menstrual bleeding was 15%, and post-menopausal bleeding was 12.5%, least was infrequent menstrual bleeding was 9.5%

**Table 3:** Endometrial pattern

Endometrial pattern	Number	Percentage
Proliferative phase	66	33
Secretary phase	29	14.5
Endometritis	1	0.5
Chronic endocervicitis	2	1
Pill endometrium	9	4.5
Benign adenomatous polyp	2	1
Endocervical polyp	1	0.5
Endometrial polyp	1	0.5
Hyperplastic polyp	5	2.5
Atrophic endometrium	9	4.5
Simple endometrial hyperplasia without atypia	26	13
Simple endometrial hyperplasia with atypia	4	2
Complex endometrial hyperplasia without atypia	8	4
Complex endometrial hyperplasia with atypia	1	0.5
Endometrial carcinoma	6	3
Simple hyperplasia without atypia with polyp	3	1.5
Insufficient sample	22	11
No opinion	6	3
Total	200	100

Among endometrial patterns, proliferative phase endometrium was the most common one, followed by the secretary phase. According to WHO, endometrial hyperplasia classified into simple endometrial hyperplasia without atypia 13% simple endometrial hyperplasia with atypia 2%, complex endometrial hyperplasia without atypia 4% complex endometrial hyperplasia with atypia 0.5%. Atrophic endometrium 4.5% the insufficient sample was 11% no opinion was 3% endometrial carcinoma was 3% pill endometrium was 4.5%.

Among patients with heavy menstrual bleeding proliferative endometrium (27 cases) is most common, followed by secretory phase (14 cases), simple hyperplasia without atypia (7 cases).

Among patients with frequent menstrual bleeding also proliferative phase is the most common, followed by simple endometrial hyperplasia without atypia is seen.

Among patients with heavy or prolonged menstrual bleeding, simple endometrial hyperplasia without atypia followed by both the proliferative phase and secretory phase

are equal in number.

Among patients with infrequent menstrual bleeding, the insufficient sample was the most common endometrial pattern observed.

Among patients with intermenstrual bleeding proliferative phase is the most common. Among patients with postmenopausal bleeding, insufficient sample, and proliferative phase are most common, followed by atrophic endometrium and endometrial carcinoma are in an equal distribution.

**Table 4:** Endometrial histology in relation to bleeding pattern

Complaints	Proliferative phase	Secretory phase	No Opinion	Simple endometrial hyperplasia without atypia	Simple endometrial hyperplasia with atypia	Complex endometrial hyperplasia without atypia	Complex endometrial hyperplasia with atypia	Pill endometrium	Insufficient sample	Chronic endocervicitis	Endometrial carcinoma	atrophic phase	benign adenomatous polyp	endocervical polyp	Endometrial polyp	hyperplastic polyp	simple hyperplasia without atypia with polyp
heavy menstrual bleeding	27	14	1	7	2	1	0	3	3	1	0	0	0	0	0	1	1
frequent menstrual bleeding	17	3	1	8	2	2	0	2	1	0	1	1	1	1	0	0	1
heavy/prolonged bleeding	6	6	0	7	0	5	1	2	2	0	1	0	0	0	0	0	1
infrequent menstrual bleeding	3	2	3	0	0	0	0	1	6	0	0	4	0	0	0	0	0
intermenstrual bleeding	8	2	1	2	0	0	0	1	5	0	0	0	0	0	1	4	0
post menopausal bleeding	5	2	0	2	0	0	0	0	5	1	4	4	1	0	0	0	0
<b>TOTAL</b>	<b>66</b>	<b>29</b>	<b>6</b>	<b>26</b>	<b>4</b>	<b>8</b>	<b>1</b>	<b>9</b>	<b>22</b>	<b>2</b>	<b>6</b>	<b>9</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>3</b>

## Discussion

A woman comes with various gynecological complaints, the most important of which is abnormal uterine bleeding. AUB may be due to functional disturbances referred to as dysfunctional uterine bleeding and organic pathologic conditions, such as chronic endometritis, endometrial polyps, endometrial hyperplasia, either simple or complex or endometrial neoplasm.

## Age-wise distribution

The commonest age group presenting with excessive bleeding in my study was 41–50 years. A similar age group distribution was observed in other studies, also like Preeti *et al.* [8], Dr. Neha Batra *et al.* [9], Puvitha R.D [10], *et al.* They had found a maximum incidence of AUB in a perimenopausal group. But according to Anita *et al.* [7] maximum number cases were in the reproductive age group, considering these discrepant variations, one may be concluded that any age after menarche is no exemption for AUB.

## Pattern of Bleeding

Heavy menstrual bleeding is the most common bleeding pattern among AUB cases, similar results observed in many studies like Kumar sunith *et al.* [11]. According to Puneet Kaur *et al.* [2] menometrorrhagia in 39% of patients followed by menorrhagia in 35% of patients. According to Puvitha R.D.*et al.* metromenorrhagia 29%, menorrhagia 21.5%.

## Endometrial pattern

The proliferative phase is the most common endometrial pattern seen in this present study, similar results observed in many studies.

According to puneet Kaur *et al.* [2] proliferative phase 33%, secretory 7%, in adequate 9%, pill endometrium 5%, atrophic endometrium 2%, adenocarcinoma 1%. According to Puvitha R.D. *et al.* [10] proliferative phase is the most common endometrial pattern. According to Anita *et al.* [7]

proliferative phase 20%, secretory phase 41.1%, pill endometrium 7%, atrophic endometrium 4.2%, simple hyperplasia without atypia 5.6%, with atypia 1.4%, complex hyperplasia without atypia 0.93%, with atypia 1.4%, endometrial carcinoma 0.93% seen. Similar findings observed in the study conducted by Preeti Baghel.

According to Archana Tiwari *et al.* [12] proliferative phase 30%, secretory phase 14%, atrophic 3%, endometrial polyp 1%, endometrioid carcinoma 4%, results are similar to the present study. Correlation between the pattern of bleeding and endometrial pattern According to Preeti Baghal *et al.*, the secretory phase of the endometrium is the most common endometrial pattern in menometrorrhagia, endometrial carcinoma most commonly seen in postmenopausal bleeding patients, a similar pattern seen in this present study also.

According to Archana Tiwari *et al.*, the most common pathology in PMB cases was endometrial hyperplasia (5%) following non-neoplastic other than the normal endometrial pattern. Endometrial carcinoma accounts for 2% of total cases. In this present study in PMB cases, proliferative phase and insufficient samples are most commonly observed, followed by atrophic endometrium and endometrial carcinoma in an equal distribution.

## Conclusion

Endometrial biopsy is most important tool to diagnose gynecological conditions in patients presenting with AUB. It not only shows the hormonal response of endometrium but gives additional information about the local factors of endometrium concerning atrophy, specific and nonspecific infections, and malignancy. Timely evaluation of AUB with histopathology can be life-saving with early diagnosis and management.

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