

## ORIGINAL ARTICLE

# Study of Endometrium's Histopathological Pattern in Abnormal Uterine Bleeding

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## ABSTRACT

**Background:** Women of all ages may experience AUB, which is one of the most common and difficult conditions to diagnose. The diagnosis and treatment of endometrial etiology of AUB are primarily reliant on endometrial histopathology. The study's main purpose was to see how common different endometrial histological patterns were in individuals with abnormal uterine bleeding of various ages, as well as to learn more about the endometrial causes of AUB and how to treat them.

**Methods:** From March 2019 to February 2020, 300 patients were studied in the department of Gynecology. Demographic data was gathered and documented. Different endometrial patterns were seen when endometrial samples were submitted for histological analyses.

**Results:** The majority of patients with abnormal uterine haemorrhage were between the ages of 41 and 50 (48.6%), and the majority of them were multipara. Women suffering from menorrhagia (42% of patients) were following by polymenorrhagia (15%), menometrorrhagia (10.6%), continuing vaginal bleeding (9.6%), Polymenorrhagia (9.3%), and postmenopausal bleeding (8.6%). 8.6% of the population 4.6 percentage point. The most common histological characteristics in atypical uterine haemorrhage were proliferative and secretory endometrium (37 percent and 30 percent, respectively). A 22.6% prevalence of endometrial hyperplasia was detected.

**Conclusion:** Endometrial assessment is used to rule out premalignant illnesses and cancer in women of all ages, especially those in the perimenopausal and postmenopausal periods of life.

**Keywords:** uterine bleeding, menorrhagia, carcinoma

## INTRODUCTION

For women of childbearing age, uncontrollable uterine bleeding is a common condition that may have severe social and economic ramifications..(1). It is one of the most prevalent and difficult issues that gynaecologists encounter, regardless of age. (2) Between menarche and menopause, it affects 9-14 percent of women, reducing their quality of life and placing financial strain on them.(3) The term abnormal uterine bleeding refers to uterine corpus hemorrhage that has occurred more than once in the previous six months and is abnormal in frequency, volume, or timing. (4) These conditions are represented by menorrhagia, menometrorrhagia, polymenorrhagia, polymenorrhagia, metrorrhagia, menometrorrhagia, persistent vaginal bleeding, and intermenstrual bleeding. Abnormal uterine bleeding can be caused by both organic and non-organic factors.

There are two types of reasons for abnormal uterine bleeding: I - Organic causes: Infections of the genital tract, benign or malignant tumours, adenomyosis, iatrogenic, and systemic illnesses.

**Dub:** The International Federation of Gynecology and Obstetrics has established a new categorization system (PALM-COEIN) to characterise the reasons of irregular uterine bleeding. It consists of nine categories and subcategories. The first four (PALM: Polyp, Adenomyosis, Leiomyoma, Malignancy, and Hyperplasia) have objective structural etiologies that are evident to the naked eye. Apart from structural issues, the following four groups

(COEI: Coagulopathy, Ovulatory Dysfunction, Endometrial Dysfunction, and Iatrogenic) are unrelated to structural issues, and the final category is for undeclared entities) (4)

Histopathology, which continues to be the gold standard for the clinical diagnosis and treatment of endometrial pathology, may look for AUB in a number of ways, depending on the pattern of the disease. With this study, the researchers wanted to look at the histological pattern of endometrium in women of different ages who had AUB and how they were treated.

## MATERIAL AND METHODS

This was a proposed research project. From March 2019 to February 2020, 300 patients were seen in the Department of Gynecology at a reputable teaching hospital and research center, Patients over the age of 18 with endometrial etiology of abnormal uterine bleeding who visited the Gynecology OPD were chosen based on clinical information.

Baseline investigations and pelvic ultrasonography (GEP-6 utilising convex probe, 3.5-5 Hz) were done after a comprehensive history collection and examination. Endometrial biopsy was performed on all of the patients, and endometrial samples were submitted in 10% formalin for histological analyses. Depending on their age, the degree of the bleeding, and the histological results, patients were treated conservatively or surgically.

Patient demographics, full laboratory results, treatment plan, and outcome were all gathered, recorded, and studied.

**Statistical analysis:** Spss was used to perform statistical tests. Absolute numbers and percentages are used to represent categorical variables. To compare nominal categorical data between groups, the chi2 goodness-of-fit test was performed. The alpha level was specified to be less than 0.05.

**Results:** This research enlisted the participation of 300 patients. Patients with AUB varied in age from 21 to 67 years old in our research. According to their age, patients were divided into four groups. Patients in group -1 are between the ages of 21 and 30, patients in group -2 are between the ages of 31 and 40, patients in group 3 are between the ages of 41 and 50, and patients in group 4 are beyond 50. (Table 1). The highest prevalence of AUB was found in people aged 41-50 years (48.6%), followed by 31-40 years (39.6%), and the lowest in those aged 21-30 years (5.3%).

Table 1: AUB distribution in different age group

Groups	Age	Number of patients	%
1	< 30	16	5.3
2	31-40	109	36.3
3	41-50	146	48.6
4	>50	29	9.6

It has been shown that the prevalence of AUB increases with parity. As indicated in Table 2, the majority of the patients (n=117, or 39 percent) had parity 3 while 106 (35.3 percent) patients had parity 2, 53 (17.6 percent) patients had parity 1, and 24 (8 percent) patients were nullipara.

Table 2: According to parity distribution of AUB

Parity	<30 year	31-40 years	41-50	>50	Total
0	6	4	3	11	24
1	4	21	23	5	53
2	3	40	57	6	106
>3	3	44	63	7	117
Total	16	109	146	29	300

Table 3:

Pattern's bleeding	<30 year	31-40 years	41-50	>50	Total
Menorrhagia	7	49	70	0	126
Menometorrhagia	0	11	21	0	32
Postmenopausal bleeding	0	0	6	20	26
Continuous bleeding	3	9	15	2	29
Polymenorrhagia	2	21	22	0	45
Metrorrhagia	0	0	7	7	14
Polymenorrhaea	4	19	5	0	28
Total	16	109	146	29	

According to the study's findings, menorrhagia was the most prevalent complaint in the 31-40 and 41-50 year age groups, accounting for 47.9 percent and 44.9 percent of total cases, respectively, in an age-specific comparative analysis of clinical presentation. Menorrhagia (43.7 percent) and polymenorrhagia (68.9 percent) were the most prevalent symptoms reported by women over 50 years old (25 percent). Menorrhagia (43.7 percent) and

polymenorrhagia (43.7 percent) were the most prevalent symptoms among those under 30 years old (25 percent).

In decreasing order, Table 3 displays the patients' major presenting complaint: Menorrhagia (42%), polymenorrhagia (15%), and menometrorrhagia (2%). (10.6 percent), Polymenorrhagia (9.6%), and persistent vaginal bleeding 9.3% of women have postmenopausal hemorrhage (8.6 percent) and metrorrhagia is a kind of hemorrhage that occurs when (4.6 percent). a comparison based on age The clinical presentation was examined, and it was discovered that In the years 31-40, the most prevalent ailment was menorrhagia. years and 41-50 years (47.9% and 44.9 percent, respectively) the circumstances, respectively). Bleeding after menopause was a common occurrence. The most prevalent complaint in the last 50 years (68.9%), while Menorrhagia (43.7 percent) and dysmenorrhagia (43.7 percent) were the most common symptoms in the 30-year-old age group. Polymenorrhagia (25%) was one of the most prevalent complaints.

Table 4: shows the prevalence of various endometrial patterns in various age groups.

Endometrial Histology	<30 year	31-40 years	41-50	>50	Total
Proliferative	8	44	57	2	111
Secretory	7	42	41	0	90
Chronic endometritis	1	4	0	0	5
Atrophic	0	0	5	4	9
DPE	0	5	10	2	17
Endometrial hyperplasia	0	14	33	21	68
Simple	0	13	24	10	47
Complex	0	1	5	4	10
Complex with atypia	0	0	3	5	8
Endometrial carcinoma	0	0	11	2	3
Total	16	109	46	29	

Table 4 depicts the prevalence of various endometrial patterns in various age groups. Normal physiological stages of the menstrual cycle were the most prevalent histological pattern in atypical uterine bleeding, with proliferative and secretory endometrium found in 111 (37%) and 90 (30%) instances, respectively. In 17 (5.6 percent) of the instances, the proliferative endometrium was found to be abnormal. Endometrial hyperplasia was the most prevalent endometrial pathology seen in 68 (22.6%) patients, with simple hyperplasia accounting for 47 (15.6%), complicated hyperplasia accounting for 10 (3.3%), and complex hyperplasia with atypia accounting for 8 (2.6%). Only three (1%) of the patients had endometrial carcinoma. Histological findings included chronic endometritis (1.6 percent of patients) and atrophic endometrium (3.2 percent of patients),

Table 5: shows the details of conservative and surgery treatment

Groups	Cases	Conservative treatment	Surgery
1	16	16	0
2	109	75	341
3	146	30	116
4	29	4	25

According to this study, perimenopausal and postmenopausal women are more likely to develop endometrial hyperplasia and malignancy.

Every patient in our study received either conservative or surgical treatment, which was determined by the patient's age, the severity of the bleeding, the patient's histology findings, and the patient's desire to undergo treatment. Tranexamic acid, oral contraceptive tablets, oral progesterone, and the Levonorgestrel intrauterine delivery device were among the conservative methods used (LNG-IUD). Hysterectomies were performed abdominally, vaginally, and with or without oophorectomy, as well as laparoscopic hysterectomies. Table 5 depicts the management of AUB in various age groups.

Conservative treatment was provided to all of the patients in Group 1. In group 2, a total of 75 patients (68.8 percent) received conservative treatment, whereas 34 patients (31.1%) were operated on because they had complex endometrial hyperplasia, severe menorrhagia, and were unwilling to follow up with conservative therapy. In group 3, the majority of the cases ( $n=116$ , or 79.4%) were treated with surgery, while just 30 patients were treated conservatively (20.5 percent). In group 4, 25 of the 29 patients were surgically treated, while the others with atrophic endometrium were handled conservatively.

## DISCUSSION

It is one of the most prevalent illnesses observed in gynaecological practise all over the world that is characterised by abnormal uterine bleeding. It is defined in this context as abnormal uterine corpus bleeding that has been present for the majority of the previous six months in terms of volume, regularity, or time. In other circumstances, AUB can be caused by a variety of reproductive system disorders as well as non-gynecological concerns. After all biological causes of AUB have been eliminated, the condition known as dysfunctional uterine bleeding (DUB) is discovered. About a quarter of the population is affected by AUB, which is caused by a well-defined organic problem. (5) Symptoms and clinical findings are used to make the bulk of diagnoses, which is why it is important to be thorough. In all cases, a pelvic ultrasound is conducted to establish a relationship between the clinical findings and the ultrasound results. Dilatation and curettage are procedures that may be performed for both diagnostic and therapeutic reasons. (6) Endometrial biopsy has a sensitivity of 96 percent for detecting endometrial abnormalities. (7) Menstrual abnormalities are more likely to emerge as people become older, according to our findings. Excessive bleeding was most prevalent in those between the ages of 41 and 50. In their studies of endometrium, Yusuf et al and Muzaffar et al found a comparable frequency. (8) Because these women are in their climacteric stage and have ovulatory cycles, it is possible that they may have more abnormal uterine bleeding than the general population. Because of early identification and treatment, the incidence of AUB in adults over the age of 50 was minimal (9.6 percent). It has been shown that the incidence of AUB increases with parity. 92 percent of patients in our study were parous (276), while the remaining 24 percent were nulliparous ( $p = 0.655$ ), despite

the fact that the difference was statistically insignificant. Nulliparous endometrial cancer was detected in two of the three cases of endometrial cancer that we discovered throughout our analysis. According to Wahda et al., nulliparity is a significant risk factor for uterine cancer ( $p = 0.000167$ ), implying that nulliparity is a significant predictor for endometrial cancer. (9)

That this is the case might be explained by the fact that nulliparity is connected with ovulatory cycles, which results in increased estrogen exposure and a lack of progesterone influence. Male pattern baldness was the most common presenting trait (42%), followed by polymenorrhagia (15%), albeit the difference was not statistically significant ( $p = 0.635$ ). Moghal et al. validated similar results in their own work in their paper titled Diagnostic usefulness of endometrial curettage in atypical uterine hemorrhage. (10) Endometrial patterns were found to be the most common in our study ( $p = 6E-06$  0.05), with proliferative endometrium constituting 37 percent of the total and secretory endometrium constituting 30 percent. These findings were consistent with those of a previous study by Doraiswami S et al. ( $p = 6E-06$  0.05). (5) This may be due to an ovulatory dysfunctional uterine haemorrhage that occurs during the secretory phase, which causes the bleeding in the proliferative endometrium. The kind of abnormal bleeding or the amount of blood lost, on the other hand, have no relationship to the histological diagnosis.

Our study found 222.2 percent to be positively diagnosed with endometrial hyperplasia, which indicates statistical significance ( $p = 0$ ) and the same as Afgan S et al's findings (20.6%). (1) The majority of the cases were hyperplasia. Endometrial hyperplasia is crucial to recognise since it is regarded to be a precursor to endometrial cancer, albeit this varies depending on the kind of hyperplasia. The least prevalent disease in our analysis was endometrial cancer, which occurred in 1% of patients and was similar to all previous studies cited. A study of endometrial pathology in women of various ages indicated that the frequency of endometrial pathology rises with age. In the perimenopausal and postmenopausal age ranges, disordered proliferative endometrium, endometrial hyperplasia, and endometrial cancer are more prevalent. Endometrial atrophy was seen in women over the age of 40 in this research, accounting for 3% of AUB cases. atrophic endometrium occurred at or soon after menopause, as shown by this finding. It is not understood what causes atrophic endometrial haemorrhage in certain cases. Anatomical vascular differences, such as thin walled veins superficial to the growing cystic glands, which leaves the artery exposed to damage, and aberrant local hemostatic processes in the uterus, are among the explanations proposed to explain why this occurs. (11)

Chronic endometritis is caused by a variety of factors, including pregnancy, IUCD insertion, and abortion. An infection with a virus, chlamydial infection, gonococcal infection, tuberculosis, or a nonspecific sickness might be the reason. A chronic endometritis diagnosis was made in 1.6 percent of the women who participated in our study, all of them were above the age of 40. In any case, there was no specific sickness found, such as tuberculosis.

Following the exclusion of medical causes for AUB, an endometrial biopsy is a safe and effective diagnostic

procedure in the evaluation of the condition. The presence of endometrial on histological examination is the fundamental foundation of AUB therapy. According to the American Society of Gynecology, medical and hormonal treatment may be used to treat young females with normal endometrium, but surgical intervention is often necessary in perimenopausal and postmenopausal women with endometrial disease.

## CONCLUSION

In individuals with atypical uterine bleeding, histopathological evaluation of endometrial biopsies revealed a broad range of alterations, from normal endometrium to cancer. Endometrial examination aids in the management of abnormal uterine bleeding in a variety of age groups, particularly perimenopausal and postmenopausal women, by ruling out premalignant illnesses and cancer.

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