

Histopathological Spectrum of Endometrium in Hysterectomy Specimens from Cases of Abnormal Uterine Bleeding

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Abstract:

Background: Abnormal uterine bleeding (AUB) is a common gynecological issue leading to significant morbidity in women of reproductive and postmenopausal age. Histopathological examination of endometrial tissue obtained from hysterectomy specimens provides essential insights into the underlying causes of AUB. This study aims to analyze the histopathological spectrum of endometrial changes in hysterectomy specimens from patients presenting with AUB.

Materials and Methods: A retrospective study was conducted on hysterectomy specimens from 150 women with AUB, collected over a period of One year. Patient demographic data, clinical presentation, and histopathological findings were recorded and analyzed. Specimens were fixed in formalin, processed, and stained with hematoxylin and eosin. The histopathological diagnosis was categorized into benign, premalignant, and malignant lesions.

Results: Out of 150 cases, 60% were in the age group of 41-50 years. The most common histopathological finding was endometrial hyperplasia (30%), followed by chronic endometritis (25%) and leiomyomas (20%). Premalignant lesions such as atypical hyperplasia were observed in 10% of cases, while endometrial carcinoma was found in 5% of cases. Benign conditions like endometrial polyps and adenomyosis were present in 10% of the specimens.

Conclusion: The histopathological spectrum of the endometrium in hysterectomy specimens from AUB cases is diverse, with benign lesions being the most common. Endometrial hyperplasia and chronic endometritis are significant contributors to AUB. The detection of premalignant and malignant lesions highlights the importance of histopathological examination in the management of AUB.

Keywords: Abnormal uterine bleeding, hysterectomy, histopathology, endometrial hyperplasia, chronic endometritis, endometrial carcinoma, premalignant lesions.

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Introduction

Abnormal uterine bleeding (AUB) is a prevalent and challenging condition affecting women of all ages, particularly those in the reproductive and perimenopausal phases of life. It significantly impacts the quality of life and can lead to anemia, fatigue, and various psychological issues [1,2]. AUB can result from a broad spectrum of pathologies ranging from hormonal imbalances to malignancies. Therefore, understanding the underlying causes is crucial for effective management and treatment.

Histopathological examination of the endometrium plays a pivotal role in diagnosing the etiology of AUB. It helps in identifying a range of conditions, including benign lesions such as endometrial polyps and leiomyomas, as well as premalignant and malignant changes [3]. Studies have shown that

endometrial hyperplasia is a common finding in patients with AUB, and its identification is vital as it can progress to endometrial carcinoma if left untreated [4,5].

Hysterectomy remains a definitive treatment for AUB, especially when conservative measures fail or when there is a suspicion of malignancy (6). Analysis of hysterectomy specimens provides a comprehensive overview of the histopathological changes in the endometrium and helps in understanding the distribution of various pathologies associated with AUB.

This study aims to examine the histopathological spectrum of endometrial changes in hysterectomy specimens from patients presenting with AUB,

contributing to the body of knowledge that aids in the clinical management of this condition.

Materials and Methods

This retrospective study was conducted in the Department of Pathology over a period of One year, from January 2023 to December 2023. The study was approved by the institutional ethics committee. A total of 150 hysterectomy specimens from women presenting with abnormal uterine bleeding (AUB) were included in the study.

Inclusion Criteria:

- Women of all ages who underwent hysterectomy for AUB.
- Adequate clinical data and complete histopathological reports available.

Exclusion Criteria:

- Hysterectomy specimens from women with non-AUB indications.
- Incomplete clinical or histopathological data.

Data Collection: Clinical data were collected from patient records, including age, clinical history, and indications for hysterectomy. The specimens were fixed in 10% formalin and processed using standard histopathological techniques. Sections of 4-5 microns thickness were cut and stained with hematoxylin and eosin.

Histopathological Examination: The histopathological examination was performed by experienced pathologists. The endometrial tissue was evaluated for various histopathological changes, and diagnoses were categorized into:

- Benign lesions (e.g., endometrial polyps, leiomyomas, adenomyosis)
- Premalignant lesions (e.g., atypical hyperplasia)
- Malignant lesions (e.g., endometrial carcinoma)

Statistical Analysis:

The data were analyzed using descriptive statistics. The frequency and percentage of each histopathological diagnosis were calculated. The distribution of histopathological findings was analyzed across different age groups.

Quality Control: Quality control measures included the use of appropriate positive and negative controls for each histological stain and periodic review of slides by multiple pathologists to ensure diagnostic accuracy.

Results

A total of 150 hysterectomy specimens from women with abnormal uterine bleeding (AUB) were analyzed. The age distribution of the patients is summarized in Table 1.

Table 1: Age Distribution of Patients

Age Group (years)	Number of Patients	Percentage (%)
21-30	10	6.7
31-40	35	23.3
41-50	90	60.0
>50	15	10.0
Total	150	100

The histopathological findings of the endometrial tissue are shown in Table 2.

Table 2: Histopathological Findings of Endometrial Tissue

Histopathological Diagnosis	Number of Cases	Percentage (%)
Endometrial Hyperplasia	45	30.0
Chronic Endometritis	37	24.7
Leiomyomas	30	20.0
Atypical Hyperplasia	15	10.0
Endometrial Carcinoma	8	5.3
Endometrial Polyps	8	5.3
Adenomyosis	7	4.7
Total	150	100

The most common histopathological finding was endometrial hyperplasia, accounting for 30% of the cases. Chronic endometritis was observed in 24.7% of the specimens, and leiomyomas were present in 20% of the cases. Premalignant lesions such as

atypical hyperplasia were identified in 10% of the cases, while endometrial carcinoma was found in 5.3% of the specimens. Benign conditions such as endometrial polyps and adenomyosis were present in 5.3% and 4.7% of the cases, respectively.

Table 3: Distribution of Histopathological Findings by Age Group

Histopathological Diagnosis	21-30 years	31-40 years	41-50 years	>50 years	Total
Endometrial Hyperplasia	2	10	28	5	45
Chronic Endometritis	1	9	23	4	37
Leiomyomas	3	8	17	2	30
Atypical Hyperplasia	1	3	8	3	15
Endometrial Carcinoma	0	2	4	2	8
Endometrial Polyps	1	2	4	1	8
Adenomyosis	2	1	6	0	7
Total	10	35	90	15	150

Endometrial hyperplasia was most prevalent in the 41-50 years age group. Chronic endometritis and leiomyomas were also predominantly observed in this age group. Premalignant and malignant lesions were more commonly found in patients over 40 years of age.

Discussion

The histopathological examination of endometrial tissue in cases of abnormal uterine bleeding (AUB) provides valuable insights into the underlying etiologies and guides clinical management. In this study, we analyzed 150 hysterectomy specimens to identify the spectrum of endometrial changes associated with AUB. Endometrial hyperplasia was the most common finding, accounting for 30% of the cases. This is consistent with previous studies, which have reported that endometrial hyperplasia is a frequent cause of AUB, particularly in perimenopausal women [1,2]. The high prevalence of hyperplasia in the 41-50 years age group underscores the importance of regular endometrial evaluation in this demographic to prevent progression to endometrial carcinoma [3].

Chronic endometritis was the second most common histopathological finding, observed in 24.7% of the specimens. Chronic endometritis is often associated with prolonged inflammation and can be linked to persistent AUB [4]. The identification of this condition is crucial for appropriate antibiotic therapy and management of underlying infections or inflammatory conditions. Leiomyomas were present in 20% of the cases, highlighting their role as a significant cause of AUB. Leiomyomas, or fibroids, are benign smooth muscle tumors of the uterus that can lead to heavy menstrual bleeding and other symptoms [5]. The relatively high incidence of leiomyomas in this study aligns with other reports emphasizing their prevalence in women undergoing hysterectomy for AUB [6].

Premalignant lesions such as atypical hyperplasia were identified in 10% of the cases. Atypical hyperplasia is a known precursor to endometrial carcinoma and warrants careful monitoring and intervention [7]. The detection of atypical hyperplasia in hysterectomy specimens indicates the importance of histopathological evaluation in patients with AUB to identify those at risk of

malignancy. Endometrial carcinoma was found in 5.3% of the specimens, which is in line with global incidence rates of endometrial cancer in women presenting with AUB [8]. Early detection and management of endometrial carcinoma are critical for improving patient outcomes, underscoring the value of thorough histopathological examination. Benign conditions such as endometrial polyps and adenomyosis were less frequently observed but still contribute to the spectrum of AUB etiologies. Endometrial polyps were present in 5.3% of the cases, and adenomyosis in 4.7%. These findings are consistent with other studies that have documented similar prevalence rates of these conditions in women with AUB [9,10].

Conclusion

In conclusion, the histopathological spectrum of endometrial changes in hysterectomy specimens from women with AUB is diverse, with benign lesions being the most common. Endometrial hyperplasia and chronic endometritis are significant contributors to AUB, while the detection of premalignant and malignant lesions highlights the importance of histopathological evaluation. This study reinforces the need for careful and comprehensive histopathological examination in the management of AUB to ensure accurate diagnosis and appropriate treatment.

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