



"ENDOMETRIAL HISTOPATHOLOGY IN ABNORMAL UTERINE BLEEDING: A FOCUS ON PERI- AND POSTMENOPAUSAL WOMEN"

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ABSTRACT

This prospective study examined the histopathological patterns of abnormal uterine bleeding (AUB) in perimenopausal and postmenopausal women, with a focus on identifying underlying causes to guide clinical management. The study analyzed 86 cases of AUB, with the highest prevalence in the 41-50 age group (77.9%). Menorrhagia was the most common bleeding pattern (62.8%), and histopathological findings revealed endometrial hyperplasia as the most frequent pathology, observed in 27.8% of perimenopausal and 31.2% of postmenopausal women. Endometrial carcinoma was diagnosed in 13.9% of cases, particularly in postmenopausal women, with uterine enlargement often associated with malignancy. The study underscores the importance of histopathological evaluation in diagnosing AUB, particularly in older women, as early detection of conditions like endometrial hyperplasia or carcinoma is crucial for effective management and improved outcomes.

KEYWORDS : Abnormal Uterine Bleeding (AUB), Perimenopausal, Postmenopausal, Endometrial Hyperplasia, Endometrial Carcinoma, Histopathology, Menorrhagia, Uterine Pathol

INTRODUCTION

The endometrium, a hormonally responsive tissue, undergoes regular cyclical changes during a woman's reproductive years. Abnormal Uterine Bleeding (AUB) is one of the most common gynecological issues, affecting nearly 30% of patients, particularly among peri- and postmenopausal women.² AUB encompasses changes in the normal volume, frequency, and duration of menstrual bleeding and arises from both organic and non-organic causes. Its prevalence increases with age and is highest just before menopause, often signaling underlying endometrial pathology.³ Histopathological evaluation of the endometrium is crucial for accurate diagnosis, especially in women over 40, as it helps identify benign and malignant conditions linked to AUB.⁴ This study aims to examine the histopathological patterns in peri- and postmenopausal women with AUB, thereby enhancing diagnostic precision and guiding effective management.

MATERIALS AND METHODS

This prospective study was conducted over a two-year period at a tertiary care hospital, in collaboration with the Departments of Pathology and Obstetrics and Gynecology. Clinical data, including age, presenting symptoms, obstetric and menstrual history, pattern and duration of bleeding, use of exogenous hormones, findings from physical and gynecological examinations, laboratory investigations, and radiological results, were gathered from the medical records department. These details were documented in a structured proforma. Endometrial specimens obtained from D&C or hysterectomy were fixed in 10% formalin for 10-12 hours. After fixation, samples were processed and embedded in paraffin wax. Thin sections (3-5 μ m) were prepared via microtomy and stained with hematoxylin and eosin (H&E) for microscopic examination.

Inclusion Criteria:

All perimenopausal and postmenopausal women diagnosed with AUB, who underwent diagnostic curettage (D&C) or hysterectomy, and whose endometrial specimens were received in the pathology department for histopathological examination.

Exclusion Criteria:

Patients under 40 years of age, those with AUB due to non-

endometrial causes (e.g., myometrial or adnexal lesions), those with isolated cervical or vaginal pathology, patients with hemostatic disorders, and those with systemic causes of abnormal bleeding were excluded.

RESULTS

In this study, 86 cases of abnormal uterine bleeding (AUB) were analyzed, comprising 44 D&C samples and 42 hysterectomy samples. The age range of patients was 41-75 years, with the highest incidence in the perimenopausal group (41-50 years), accounting for 67 cases. The majority of patients were para 2 (47.7%), and the most common bleeding pattern was menorrhagia (62.8%). Uterine size was normal in 61.6% of cases, and bulky uterus (30.2%) was associated with malignancies, especially adenocarcinoma. Small uteruses were observed in 7 cases, primarily with endometrial atrophy. Histopathological analysis showed that, in the perimenopausal group (41-50 years), 44.5% had normal cyclical endometrium, while 55.5% had pathology, including endometrial hyperplasia, carcinoma, and polyps. In the postmenopausal group, 90.6% had pathological findings, with endometrial carcinoma being the most common (31.3%). Among those aged 41-50 years, the most frequent pathologies were proliferative phase (20 cases) and endometrial hyperplasia (20 cases). In those over 60 years, endometrial carcinoma was most prevalent (6 cases), followed by atrophic endometrium.

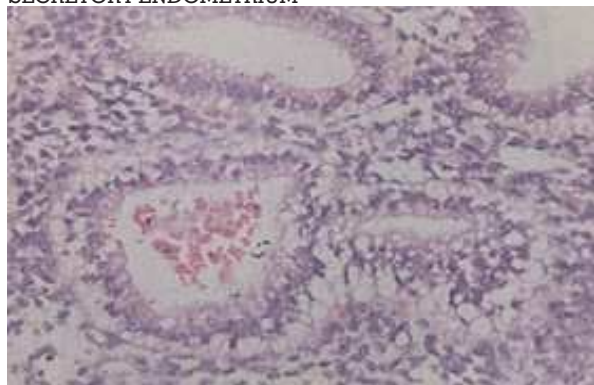
Pattern of endometrium	Peri-menopausal	Post-menopausal
Proliferative endometrium	17	3
Secretory endometrium	7	-
Atrophic endometrium	-	7
Endometrial polyp	6	1
Pill endometrium	2	-
Endometritis	2	1
Simple hyperplasia without atypia	12	5
Complex hyperplasia without atypia	2	4
Atypical hyperplasia	1	1
Endometrial carcinoma	2	10
Inadequate	3	-
Total	54	32

REPRESENTATIVE CASES
PROLIFERATIVE ENDOMETRIUM



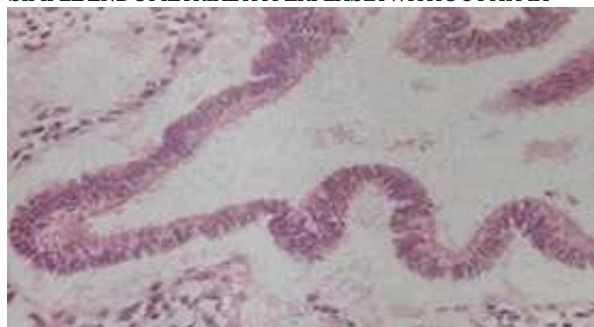
H&E(40x) - REGULAR SPACED GLANDS WITH COMPACT STROMA

SECRETORY ENDOMETRIUM



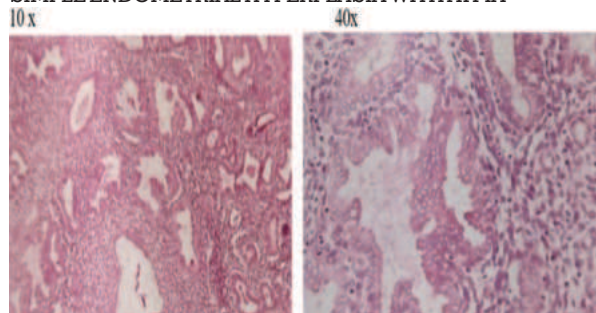
H&E(40x) -ENDOMETRIAL GLANDS WITH SUBNUCLEAR VACUOLATIONS

SIMPLE ENDOMETRIAL HYPERPLASIA WITHOUT ATPIA



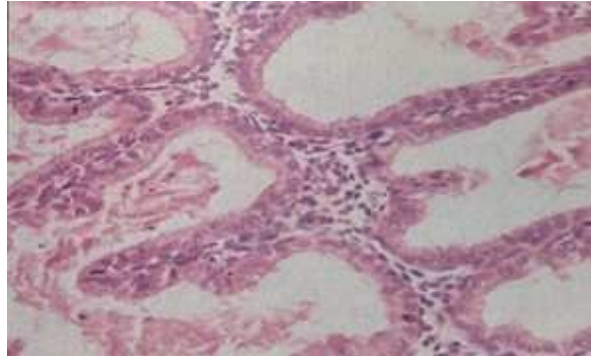
H & E (4 0 x) - ENDOMETRIAL GLANDS WITH PSEUDOSTRATIFICATION & HYPERCHROMATIC ENLONGATED NUCLEI

SIMPLE ENDOMETRIAL HYPERPLASIA WITH ATPIA



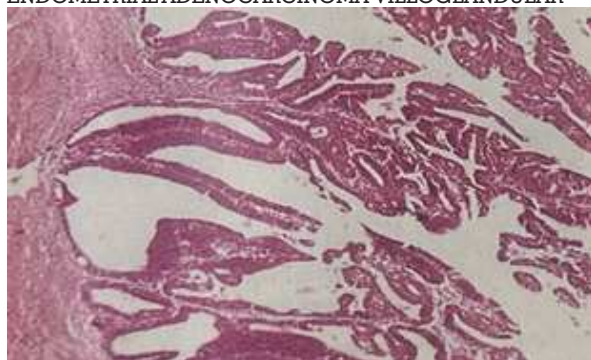
H&E - INCREASED GLAND TO STROMA RATIO WITH TORTOUS ANSD CYSTICALLY DILATED GLANDS, CELULAR ATYPIA

COMPLEX ENDOMETRIAL HYPERPLASIA WITHOUT ATPIA



H&E(40x) - BACK TO BACK ENDOMETRIAL GLANDS WITH SOME GLANDULAR COMPLEXITY WITHOUT NUCLEAR ATYPIA.TUMOR WITH TALL & THIN DELICATE PAPILLAE

ENDOMETRIAL ADENOCARCINOMA-VILLOGLANDULAR



H&E(10x) - ENDOMETRIAL TUMOR WITH TALL & THIN DELICATE PAPILLAE

DISCUSSION

Abnormal uterine bleeding (AUB) is a common clinical issue, particularly in perimenopausal and postmenopausal women, and is often the reason for gynecological consultation.⁵ This study aimed to evaluate the histopathological patterns of AUB in women aged 41 to 75 years, with a focus on understanding the underlying causes and their clinical implications.

AUB was most common in the 41-50 age group (77.9%), consistent with studies by Khan S et al. and Jairajpuri ZS et al.⁶ Hormonal fluctuations in this group led to irregular bleeding, with menorrhagia seen in 62.8% of cases. Unlike other studies (Moghal N et al., Sarwar A et al.), our study did not observe polymenorrhea or metrorrhagia, possibly due to differences in population or diagnostic criteria.⁷

Parity:

Most patients were low parity, mainly para 2 or 3. Unlike findings by Khan S et al., no correlation with higher parity was noted.⁸

Bleeding Pattern:

Menorrhagia was the most common pattern (62.8%, 54 cases), similar to Jairajpuri ZS et al., while 37.2% had postmenopausal bleeding.⁶ Patterns like metrorrhagia and polymenorrhoea, noted in other studies, were not observed.

Uterus Size:

In postmenopausal bleeding cases, an enlarged uterus correlated with abnormal endometrial pathology, aligning with Miyazawa's study.⁹ All cases of endometrial carcinoma, hyperplasia, and polyps had a bulky uterus. Following Miyazawa, abnormal bleeding should be evaluated for pathology regardless of uterine size.

Histopathological findings in this study revealed that

proliferative endometrium (31.5%) was the most common pattern in perimenopausal women, typically associated with anovulatory cycles, consistent with findings by Baral R and Jairajpuri ZS.⁶

The incidence of secretory endometrium was lower (13%) in our cohort compared to other studies, such as those by Naik et al., which may reflect hormonal differences or variations in biopsy timing.³

Endometrial hyperplasia was the most frequent pathological finding, occurring in 27.8% of perimenopausal and 31.2% of postmenopausal women, which is consistent with Naik et al. (27.6% and 33.3%, respectively).¹⁰ Simple hyperplasia without atypia was the most common type, while atypical hyperplasia was observed in 8% of cases, which is of particular concern due to its increased risk of progressing to endometrial carcinoma.

Endometrial polyps were found in 8.1% of cases, most commonly in the perimenopausal group, and were associated with menorrhagia, consistent with findings from Moghal N et al. and Sarwar A et al.⁷

Chronic endometritis, seen in 3.4% of cases, was also noted, in line with studies by Moghal N et al. and Mirza T et al. Endometrial carcinoma was diagnosed in 13.9% of cases, with postmenopausal bleeding as the most common symptom (31.3%), a finding consistent with Baral R et al. (21%).⁷ This underscores the importance of prompt evaluation, as postmenopausal bleeding is a potential indicator of malignancy.

One key challenge in diagnosing AUB was the limitations of curettage specimens, which can miss smaller lesions. Hysterectomy specimens offered higher diagnostic accuracy, with 52% of endometrial hyperplasia cases diagnosed from hysterectomy samples, compared to only 7.5% in Reed et al.'s study. This highlights the superior diagnostic value of hysterectomy specimens in suspected endometrial pathologies.

CONCLUSION

This study highlights the critical role of histopathological evaluation in diagnosing the causes of abnormal uterine bleeding (AUB) in perimenopausal and postmenopausal women. Given that AUB is a common symptom in this demographic, endometrial sampling is an essential diagnostic tool, particularly in identifying conditions like endometrial hyperplasia, polyps, and carcinoma, which were the most frequent findings in this study. Accurate histopathological diagnosis is vital for guiding effective management, especially in cases of endometrial carcinoma, where early detection and intervention can significantly improve outcomes. The study reinforces the importance of considering clinical factors such as age, parity, menstrual history, and radiological findings alongside histopathology to accurately assess the underlying causes of AUB and rule out premalignant or malignant conditions.

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