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Original Research Article

A Study on Endometrial Histopathology of Women with Postmenopausal Bleeding in a Tertiary Care Centre, Kakinada, Andhra Pradesh

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Abstract:

Introduction: Postmenopausal bleeding is bleeding from the reproductive system that occurs one year after menstrual periods have stopped. Bleeding from the genital tract occurring after the menopause is much more sinister than premenopausal bleeding. The main objectives in the diagnostic workup in postmenopausal women presenting with uterine bleeding is to detect or rule out endometrial cancer or atypical hyperplasia, further referred to as (pre) malignancy of the endometrium.

Aims and Objectives: 1. To determine the causes of postmenopausal bleeding from endometrial histopathology**.** 2. To correlate between the histopathological report of endometrial biopsy and surgical specimen. 3. To evaluate the relation between age, parity, post-menopausal bleeding duration, endometrial thickness, uterine size, body mass index, and medical disorders in women presenting with postmenopausal bleeding versus the risk of endometrial hyperplasia and cancer

Methodology: This is a study, on histopathology of endometrium in postmenopausal bleeding women and its clinical correlation, undertaken in the department of obstetrics& gynecology over a period of 6 months.

Results: 30 women presented with PMB out of which 3 were endometrial cancer, 13 cases were EH without atypia, 9 cases were EH with atypia and 5 cases of endometrial atrophy.

Conclusion: In my study positive correlation was found with risk factors, in women with premalignant and malignant lesions.

Keywords: Post Menopausal Bleeding, Endometrial Hyperplasia Endometrial Cancer, Endometrial Atrophy.

Introduction

Menopause marks the cessation of menstrual periods, defined by the absence of menstruation for 12 consecutive months. In Indian women, the average age of menopause is approximately 47 years. However, clinical evaluation for postmenopausal bleeding should be initiated if bleeding occurs after at least 6 months of amenorrhea. Postmenopausal bleeding (PMB), which refers to any genital tract bleeding occurring one year or more after menopause, warrants careful investigation due to its potential association with serious conditions. Although bleeding before menopause can often have benign causes, postmenopausal bleeding is more concerning and is often considered a sign of an underlying pathological condition [1,2].

The primary objective of evaluating postmenopausal women with uterine bleeding is to identify or exclude endometrial malignancy or atypical hyperplasia, collectively referred to as (pre)malignant conditions of the endometrium. While many cases of PMB are due to benign conditions, clinical management focuses on accurate diagnosis while avoiding unnecessary interventions [2,3]. Common organic causes of uterine bleeding in postmenopausal women include endometrial polyps, hyperplasia, and carcinoma.

However, in many instances, no specific organic cause is identified, and histopathological findings may reveal atrophic endometrium, proliferative endometrium, or, more rarely, secretory endometrium [4,5]. Approximately 20-25% of women presenting with PMB are found to have a neoplastic lesion, with 10-15% of those cases being endometrial carcinoma [2-5]. Endometrial carcinoma ranks as the fifth most common cancer in women globally, following malignancies of the cervix, breast, oral cavity, and ovaries. Despite its

prevalence, the relatively low mortality rate is attributed to early detection, as PMB often prompts women to seek medical attention in the initial stages of cancer [2-4]. Recent trends show an increase in the incidence of endometrial cancer, potentially linked to lifestyle factors, longer life expectancy, early diagnosis, and a decrease in cervical cancer cases [6-8].

Several risk factors influence endometrial thickness and the likelihood of developing endometrial carcinoma [9]. These factors include age, duration since menopause, obesity, hypertension, diabetes mellitus, and parity.

These indicators play a key role in refining the diagnostic approach for women with postmenopausal bleeding [6-9].

Table 1: Endometrial Causes of Postmenopausal Bleeding:

Factor	Percentage
Atropic endometritis	60-80%
Endometrial cancer	10%
Endometrial/ endocervical polyps	2-12%
Endometrial hyperplasia	5-10%
Estrogen replacement therapy	15-25%

Aim & Objectives of the Study

1. To determine the causes of postmenopausal bleeding from endometrial histopathology
2. To correlate between the histopathological report of endometrial biopsy and surgical specimen
3. To evaluate the relation between age, parity, post-menopausal bleeding duration, endometrial thickness, uterine size, body mass index , and medical disorders in women presenting with postmenopausal bleeding versus the risk of endometrial hyperplasia and cancer
4. To correlate clinical and USG parameters.

Methodology: This study investigates the histopathology of the endometrium in women with postmenopausal bleeding and its clinical correlation. The research was conducted in the Department of Obstetrics and Gynecology over a period of 6 months with data collected from the Government General Hospital (GGH) during the year 2024. The aim is to assess the underlying causes of postmenopausal bleeding through endometrial histopathological analysis and correlate the findings with clinical parameters.

Study Population: The study included women presenting with complaints of postmenopausal bleeding, who were admitted to the GGH. A detailed medical history was taken, followed by clinical examinations and BMI measurements for each patient.

Investigations and Procedures: Pelvic ultrasound (USG) was performed on all participants to assess uterine and adnexal structures, with specific focus on measuring endometrial thickness. Endometrial sampling was carried out via hysteroscopy-guided biopsy or dilatation and curettage (D&C) to obtain tissue for histopathological evaluation.

Inclusion Criteria: Women presenting with postmenopausal bleeding who attended the outpatient department (OPD) of GGH. All such patients were subjected to endometrial biopsy using either hysteroscopy-guided biopsy or dilatation and curettage.

Exclusion Criteria: Patients with extrauterine causes of postmenopausal bleeding, including cervical cancer, were excluded from the study.

Data Collection and Statistical Analysis: Information was recorded in Excel spreadsheets, including clinical parameters such as age, parity, BMI, and endometrial thickness, along with histopathological findings from the endometrial biopsies. Descriptive statistics were employed to analyze the demographic and clinical data. Categorical variables, such as histopathological results, were presented as percentages and proportions. Continuous variables, including endometrial thickness, were expressed as means or medians with standard deviations. Bar charts and pie charts were used to represent the distribution of histopathological findings and the frequency of various clinical factors, such as BMI categories and endometrial thickness ranges. Summary tables were created to display patient characteristics, histopathological results, and their clinical correlations. Cross-tabulations were also utilized to compare histopathological outcomes with factors such as age group, parity, and BMI.

Results

In this study of 30 women with postmenopausal bleeding (PMB), 10% were diagnosed with endometrial cancer, all of which were of the endometrioid adenocarcinoma type. 43.33% had hyperplasia without atypia, while 30% had hyperplasia with atypia, a premalignant condition. 16.66% of cases showed endometrial atrophy. The majority of cases (66.66%) occurred in women aged 51-60 years, and the most common age at menopause was 46-50 years. Lower parity was associated with a higher risk of endometrial pathology, with nulliparous women showing a higher incidence of malignancy.

Obesity also correlated with premalignant and malignant lesions, as 73% of the women were overweight or pre-obese. Additionally, 73% of participants had hypertension, diabetes, or both, suggesting these comorbidities further increased the risk of endometrial abnormalities.

Table 2: Endometrial Histopathology In Relation To Postmenopausal Bleeding

Histopathological Examination		
Endometrial Cancer	3	10%
Hyperplasia without atypia	13	43.33%
Hyperplasia with atypia	9	30%
Endometrial atrophy	5	16.66%

Table 3: Age Distribution of Endometrial Lesions in Postmenopausal Bleeding:

HPE	**41-50 Years**	**51-60 Years**	**>60 Years**
CA endometrium		2	1
HYPERPLASIA without atypia	2	9	2
HYPERPLASIA with atypia	2	5	2
Endometrial atrophy	1	4	

Table 4: Relation of Age at Menopuse and Postmenopausal Bleeding

HPE	**41-45yrs**	**46-50**	**>50yrs**
Endometrial Cancer		3	
Hyperplasia Without Atypia	2	9	2
Hyperplasia With Atypia	2	6	1

Table 5: Relationship of Parity with Postmenopausal Bleeding

Parity	**Number**	**Percentage**
nulliparous	5	16.66%
P1	9	30%
P2	11	36.66%
P3	4	13.33%
>=P4	1	3.33%

Majority of the premalignant and malignant lesions were found in low parity women.

Table 6: Relationship of Postmenopausal Bleeding Duration and Histopathology:

HPE	**<1 month**	**1-2 months**	**2-3 months**	**3-4 months**
Premalignant & Malignant Lesions (Simple & complex hyperplasia with atypia, CA endometrium)	2	4	2	1
BENINGN LESIONS(Hyperplasia without atypia and atrophic)	4	6	6	2

Relationship of Endometrial Biopsy Report and HPE of Surgical Specimen: All cases correlated well with endometrial biopsy report and surgical specimen HPE report

Table 7: Relationship of BMI of Postmenopausal Bleeding Women with Histopathology

HPE	**Normal 18.5-22.9**	**BMI 23-24.9**	**BMI 25-29.9**	**BMI >30**
CA Endometrium	-	2	1	-
HYPERPLASIA without atypia	5	8	-	-
HYPERPLASIA with atypia	3	5	1	-
Endometrial atrophy	5	-	-	-

Table 8: Relationship of Diabetes & HTN with HPE of Postmenopausal Bleeding

Category	**Only HTN**	**Only DM**	**Both HTN & DM**	**NIL**
CA endometrium	1	1	1	-
Hyperplasia without atypia	4	3	4	2
Hyperplasia with atypia	1	2	5	1
Atropic endometrium	1	2	-	2

Distribution of Histological Subtypes in Endometrial Carcinoma: All women diagnosed with endometrial cancer showed endometroid adenocarcinoma pattern

Table 8: History of Malignancy Elsewhere (Other Than Ca Endometrium) In Postmenopausal Bleeding

H/O Malignancy Elsewhere	Frequency	Percentage
None	28	93.33%
CA Breast	2	6.66%

Discussion

Postmenopausal bleeding (PMB) is a critical symptom that requires thorough evaluation due to its association with various endometrial pathologies, ranging from benign to premalignant and malignant conditions. In clinical practice, women presenting with PMB are typically assessed through either an endometrial biopsy or transvaginal ultrasonography [3,5,10].

Histopathological Findings and Clinical Correlation: In this study, 30 women with PMB were included after ruling out extrauterine causes, such as cervical and ovarian malignancies. Histological evaluation revealed that:

- 10% of the women were diagnosed with endometrial cancer, and all cases were of the endometrioid type adenocarcinoma, which is the most common histological subtype of endometrial carcinoma.
- 43.33% of the participants had hyperplasia without atypia, which is considered a benign condition with a lower risk of progression to malignancy.
- 30% of the women exhibited hyperplasia with atypia, a premalignant condition that significantly increases the risk of developing endometrial cancer if left untreated.
- 16.66% of the women showed endometrial atrophy, which is a common benign cause of PMB.

These findings align with previous studies that have shown a significant proportion of postmenopausal women presenting with PMB have either benign or premalignant endometrial conditions. However, the presence of malignancy, although less common, underscores the importance of prompt diagnosis and management [1,5,11].

Age and Menopause: The study found that the most common age group for PMB was between 51-60 years, with 20 out of 30 women falling within this age range. This finding is consistent with the natural history of endometrial cancer, which is more prevalent in women in their sixth decade of life.

The most common age at menopause was 46-50 years, with 18 out of 30 women in this group. Women who experience menopause later in life are known to have a higher risk of endometrial hyperplasia and cancer due to prolonged exposure to estrogen without the protective effects of progesterone. This correlation between age at menopause and the risk of endometrial pathology highlights the need for close monitoring of women with late-onset menopause, particularly those presenting with PMB [6,11,12].

Parity and Endometrial Pathology: Parity appears to have a protective role against the development of premalignant and malignant lesions of the endometrium. In this study, the risk of endometrial pathology was notably lower in women with higher parity. Specifically, women with four or more deliveries (P4) had a risk of only 3.33%, whereas women with one child (P1) had a risk of 30%. Two cases of endometrial cancer were observed in nulliparous women, further emphasizing the association between low parity and the risk of endometrial malignancy. The protective effect of parity may be attributed to the hormonal changes associated with pregnancy, particularly the exposure to progesterone, which counteracts the proliferative effects of estrogen on the endometrium [1,5,13].

BMI and Endometrial Pathology: Body mass index (BMI) has a well-established link with endometrial hyperplasia and cancer, primarily due to the excess production of estrogen in adipose tissue. In this study, only 26.66% of women had a normal BMI, while the majority (50%) were classified as overweight, and 6.66% were in the pre-obese category. Obesity is a known risk factor for endometrial hyperplasia and cancer due to the increased peripheral conversion of androgens to estrogens in adipose tissue, which leads to unopposed estrogen stimulation of the endometrium. The positive correlation between higher BMI and the incidence of premalignant and malignant lesions in this study supports the need for targeted interventions in overweight and obese women presenting with PMB [1,5,6,14].

Comorbidities: Hypertension and Diabetes: Comorbidities such as hypertension (HTN) and diabetes mellitus (DM) are common in women with PMB and are associated with an increased risk of endometrial pathology. In this study, 73% of women had either hypertension, diabetes, or both. These conditions are linked to metabolic syndrome, which is characterized by insulin resistance, chronic inflammation, and hormonal imbalances, all of which contribute to an increased risk of endometrial hyperplasia and carcinoma. Among the women diagnosed with endometrial cancer, one had hypertension, one had diabetes, and one had both comorbidities, indicating a potential synergistic effect of these conditions in increasing cancer risk. Women with both hypertension and

diabetes were also more likely to have hyperplasia with atypia, further suggesting that metabolic disorders play a critical role in the progression of endometrial abnormalities [1,5,6,15].

Clinical Implications: This study highlights the importance of timely evaluation of PMB to rule out malignancy and initiate appropriate treatment in women with premalignant or malignant lesions. Key clinical factors, such as age at menopause, low parity, high BMI, and the presence of metabolic comorbidities, are significant predictors of endometrial pathology. Regular monitoring and preventive measures, such as weight management and control of hypertension and diabetes, are crucial for reducing the risk of progression to endometrial cancer in postmenopausal women with bleeding.

Conclusion

Postmenopausal uterine bleeding is a significant symptom that warrants careful evaluation, as it is often the first and only sign of underlying endometrial pathology. Every case of postmenopausal bleeding, after excluding extrauterine causes, should be thoroughly investigated to rule out malignancy or premalignant conditions.

The risk of developing premalignant and malignant lesions increases with the duration between menopause and the onset of postmenopausal bleeding. Endometrial hyperplasia in postmenopausal women poses a greater risk of progression to endometrial cancer compared to hyperplasia occurring before menopause. Early detection and timely intervention are crucial in reducing the likelihood of cancer development in women with postmenopausal bleeding.

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