

Evaluation of Histopathological Spectrum of Post-Menopausal Bleeding among Women-A Cross-Sectional Study

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ABSTRACT

Background: Finding post-menopausal bleeding in public places offers a chance to find these people before their cancers have progressed. The gold standard method for determining the etiology of post-menopausal bleeding is histopathology. The current study aimed to identify the sources of post-menopausal bleeding and, using histopathology results, to distinguish between different types of benign and malignant lesions.

Methods: This cross-sectional observational study was conducted in an Indian tertiary care center's pathology department. Our histology section received 200 cervical or endometrial biopsy samples from women who had been bleeding after menopause. A histological investigation was performed, and the results were documented for each sample as benign and malignant lesions.

Results: With an average age of 53.6 years, the bulk of patients (36%) were found to be in the 46–50-year age range. The most often biopsied location was the cervix (43%) and endometrial curettage (30%). Based on the histological diagnosis, 53.5% of the patients had benign lesions, and 37.5% had malignant lesions. In PMB instances, endometrial hyperplasia with atypia (12.5%) and endometrial carcinoma (5.5%) were common among malignant lesions, while atrophic endometrium (35%) and proliferative endometrium (20%) were common among benign lesions.

Conclusion: The majority of instances of post-menopausal bleeding (PMB) had benign causes, with atrophic endometrium, proliferative endometrium, and endometrial hyperplasia being the most prevalent histological findings.

Key-words: Post-menopausal bleeding, Histopathological, Atrophic endometrium, Benign lesion, Malignant lesion

INTRODUCTION

The term "menopause" originates from the Greek words "meno" (month) and "pause" (to cease). Women who are approximately fifty years old go through

menopause biologically. Menopause typically occurs in women between 45 and 55, with an average age of 51^[1]. Abnormal uterine bleeding following a year of permanent cessation of menstruation due to lack of ovarian follicular activity is known as PMB^[2]. Due to the potential for an underlying endometrial malignancy, PMB is one of the disorders for which gynaecological services receive the most referrals^[3]. The WHO defines PMB as a bleeding episode that occurs 12 months or longer following the last menstrual cycle. About 10% of women in the general population experience post-menopausal bleeding right after menopause, and 5% of

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women who have gone through menopause get it ^[4]. In 60–80% of cases, endometrial atrophy is the most common endometrial abnormality in women who are having post-menopausal bleeding. Undiagnosed and untreated polyps may result in recurrent or chronic bleeding, necessitating an unnecessary hysterectomy ^[5,6]. There have been reports of several patterns of aberrant uterine bleeding, including menorrhagia, menometrorrhagia, dysfunctional uterine bleeding, and PMB ^[7]. PMB can have both benign and malignant causes. Among the former are abnormal physiological changes (atrophic and disordered proliferative endometrium) and cyclical endometrium; among the latter are common malignant lesions such as endometrial hyperplasia, carcinomas, uterine polyps, and pregnancy-related complications ^[8]. 70% to 80% of endometrial carcinomas are type I EC, which has endometrioid histology. Non-endometrioid in histology, Type-II EC is more common in women who are less likely to have the clinical correlates associated with Type-I tumors ^[9]. While post-menopausal bleeding is frequently linked to benign illness, it is a serious symptom that necessitates a comprehensive clinical workup due to the risk of an underlying malignancy. Research has demonstrated that early identification lowers mortality and increases the cure rate for endometrial and cervical cancer ^[10]. Consequently, a thorough evaluation of PMB is necessary to rule out cancer and to identify and manage patients who pose a high risk. The majority of PMB research relies on endometrial biopsies.

MATERIALS AND METHODS

The Department of Pathology carried out this prospective observational study in a tertiary care hospital in central India. All endometrial or cervical biopsy samples that post-menopausal women obtained from our histopathology section were examined throughout the study period.

Inclusion criteria

- ❖ Women ≥ 40 years of age
- ❖ Post-menopausal women complaint of bleeding attended our hospital
- ❖ Women who gave written informed consent for the study

Exclusion criteria

- ❖ Women aged <40 years
- ❖ PMW with vaginal bleeding arising from a cervical or vaginal or vulvar disease,
- ❖ Women with bleeding disorders, on anticoagulants on menopausal hormone therapy (MHT)
- ❖ Patients who are not willing to study

Research design- Every case's information was retrieved via the patient's requisition form, including their history, socio-demographic traits, clinical compliance, and preliminary diagnosis. In every instance, transvaginal sonography and pertinent blood work were completed. Our histology section received various biopsy samples, including specimens from hysterectomy and endometrial and cervical biopsies. Normal protocols for both gross and histological inspection processed all biopsy samples. Biopsy tissue samples are sectioned into tiny, thin, cut sections. After that, they stained the lesions with hematoxylin and eosin and examined the results under a microscope to determine whether the lesions were benign or cancerous. The histological results were collated, examined, and contrasted with those of previous investigations.

Statistical Analysis- Standard descriptive techniques were used to summarize the data: for categorical variables, frequency and percentages; for continuous variables, mean, SD or median and range were used. For analysis of variance, the chi-square test and the student's t-test were used; $p < 0.05$ was regarded as statistically significant.

RESULTS

A total of 200 cases of post-menopausal bleeding women were enrolled and analyzed in the present study. Most cases (36%) were 46-50 years old, with the mean age being 53.6 years. Most (57%) resided in urban areas, 53% belonged to the middle socio-economic class and 56% had normal weight women. The duration of menopause was 1-5 years for most women (52%). The PMB was maximum (55%) in multiparous patients (parity 1-3). Details are shown in Table 1.

The cervix was the most common site of biopsy (43%), followed by endometrial curettage (30%), cervix & endometrium (10%) and hysterectomy with adnexa 7%. Details are shown in Fig. 1.

Table 1: Basic characteristics of women with post-menopausal bleeding

Basic characteristics		Frequency (%)
Age groups	41-45 years	10 (5%)
	46-50 years	72 (36%)
	51-55 years	54 (27%)
	56-60 years	44 (22%)
	> 60 years	20 (10%)
Residing area	Rural	86 (43%)
	Urban	114 (57%)
Socio-economic class	Lower	78 (39%)
	Middle	106 (53%)
	Upper	16 (8%)
Parity	Nullipara	8 (4%)
	Para 1-3	110 (55%)
	Para >3	82 (41%)
Duration of menopause	<1 year	74 (37%)
	1-5 years	104 (52%)
	>5 years	22 (11%)
BMI	Normal	112 (56%)
	Overweight	67 (33.5%)
	Obese	21 (10.5%)

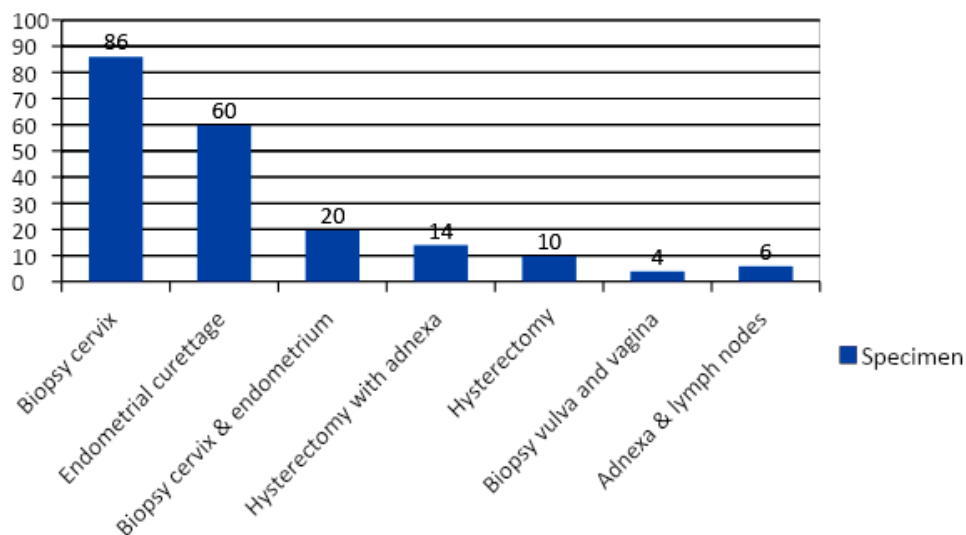


Fig. 1: Type of specimens collected from the study participants

Among histopathological diagnoses, most post-menopausal bleeding (53%) was due to benign causes, 37.5% were malignant causes and the rest 9.5% were premalignant (Fig. 2).

Based on histopathology findings, endometrial lesions were categorized into Functional and Organic groups.

Atrophic endometrium (35%) followed by Proliferative endometrium (20%) were common among functional lesions, whereas endometrial hyperplasia (12.5%) was common among organic lesions. A detailed description is shown in Table 2.

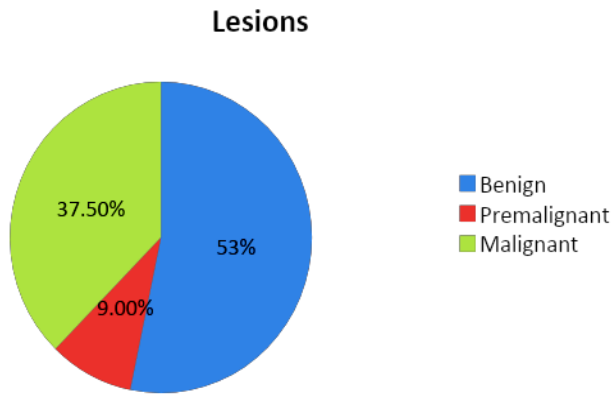


Fig. 2: Distribution of lesions based on histopathology among PMB women

Based on histopathology findings, endometrial lesions were categorized into Functional and Organic groups. Atrophic endometrium (35%) followed by Proliferative endometrium (20%) were common among functional lesions, whereas endometrial hyperplasia (12.5%) was common among organic lesions. A detailed description is shown in Table 2.

Table 2: Distribution of histopathological findings in post-menopausal bleeding women

Histopathology diagnosis	Frequency	Percentage
Atrophic Endometrium	70	35%
Proliferative Endometrium	40	20%
Secretory Endometrium	15	7.5%
Disordered Proliferative Endometrium	11	5.5%
Endometritis	8	4%
Endometrial Polyp	5	2.5%
Endometrial Hyperplasia	25	12.5%
Carcinoma in situ of cervix	6	3%
Endometrial Hyperplasia with Atypia	4	2%
Endometrial Carcinoma	11	5.5%
Unremarkable	5	2.5%

DISCUSSION

Post-menopausal bleeding is a very concerning symptom that could indicate uterine and cervical cancer. Transvaginal ultrasound scanning (TVS) should be the first diagnostic procedure in all patients of PMB since endometrial thickness may be a symptom of serious disease. When endometrial thickness is evaluated by

ultrasound and is more than 4 mm, only lesions with PMB were suggested to undergo histology

The bulk of the biopsy specimens in this investigation came from the cervix, followed by hysterectomy and endometrial curettage specimens. Our results are consistent with those of Vidya *et al.* [11] and Fatheha Ferdous *et al.* [12]. According to histological analysis, most PMBs are benign lesions, consistent with findings from studies by Reyaz *et al.* [13] and Ubeja *et al.* [14]. Endometritis, endometrial polyps, secretory endometrium, atrophic endometrium, proliferative endometrium, and endometrial hyperplasia without atypia were among the benign diseases.

In the current investigation, PMB as a result of malignant and premalignant cases was 47%, similar to that of Naik *et al.* [15] and Tyagi *et al.* [16]. Among cancerous conditions, cervical cancer in situ, atypia in endometrial hyperplasia, and endometrial carcinoma were prevalent.

According to the current investigation, the most common histopathological lesion in benign situations is atrophic endometrium; comparable findings have already been reported by Pragati *et al.* [17] and Kothapally *et al.* [18]. Changes in serum estrogen levels, the deterioration of myometrial arterioles, chronic nonspecific endometritis, associated co-morbidities such as diabetes mellitus and hypertension, endometrial cyst rupture, and uterine prolapse are the most likely causes of PMB from atrophic endometrium. According to research by Ahmed *et al.* [19] and Damle *et al.* [20], endometrial hyperplasia is the most prevalent histological organic lesion associated with post-menopausal bleeding. One of the most prevalent risk factors and important histological conditions that can result in the development of endometrial cancer is endometrial hyperplasia.

The present study noted that proliferative endometrium was the second most common cause of PMB, comparable to the study of Cheema *et al.* [21]. The most dangerous malignant lesion that can cause post-menopausal bleeding is endometrial carcinoma. The current study found only 5.5% of cases, comparable to Sreelatha *et al.* [22] findings. In contrast, higher incidences of endometrial carcinoma were reported by Bani-Irshaid *et al.* [23] and Mallick *et al.* [24], at 9.3% and 9%, respectively. Given that endometrial cancer is more common in nulligravida, this result may be attributed to the high parity in our community. Endometrial carcinoma

is more associated with advancing age and late menopause; thus, this correlates with our study.

CONCLUSIONS

We conclude that the most common histological findings among the malignant causes were endometrial hyperplasia with atypia and endometrial carcinoma. At the same time, atrophic endometrium and proliferative endometrium were the most important causes of post-menopausal bleeding, among the benign causes. Thus, understanding endometrial histomorphology in PMB patients will aid in properly administering treatment. A proper early diagnosis of PMB is immensely important for promptly treating patients. Implementing an adequate management plan can lead to reduced women's mortality.

CONTRIBUTION OF AUTHORS

Research concept- Rani Kumari, Prafulkumar Suresh Rameke

Research design- Komal Chhabra, Nidhi Narrey

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Data analysis and Interpretation- Poonam Kumari

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Critical review- Poonam Kumari

Article editing- Rani Kumari, Prafulkumar Suresh Rameke

Final approval- Poonam Kumari

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