

Original research article

## **Study of Endometrial Histopathology in Women with Postmenopausal Bleeding**

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### **Abstract**

Background: The incidence of PMB is 10% in general population. At least 10-25% of PMB is said to have neoplastic lesions out of which approximately 10-15% are associated with endometrial carcinoma. The causes of post-menopausal bleeding can also be benign like atrophic endometrium, endometrial hyperplasia and polyps. The objective of this study was to evaluate endometrial pathology in women with post-menopausal bleeding to rule out endometrial cancer or atypical hyperplasia. Method and observations -This was a descriptive study done on 73 post-menopausal women attending gynaecology OPD. TVS and Hysteroscopy was done and biopsy was taken from 50 high risk cases by D&C for HPE. Descriptive statistics was applied to collected data. The commonest pathological lesion was endometrial atrophy [42% cases] followed by hyperplasia in 20% cases and endometrial carcinoma in only 2% cases. Majority of patients presenting with PMB were less than 55 years of age. Sensitivity and specificity of histopathology in diagnosing endometrial lesions was 98.45% and 100%, respectively. Conclusion -Histopathological examination of endometrial biopsy specimens on D&C is highly sensitive and specific for diagnosis of endometrial lesions in patients with post-menopausal bleeding.

**Keywords:** post-menopausal bleeding, histopathology, endometrial carcinoma, endometrial atrophy

## Introduction

Menopause is defined as final cessation of menstruation. It is a universal & irreversible part of overall aging process of women's reproductive system. Menopause is defined retrospectively as final menstrual period followed by 12 months of amenorrhea<sup>1,2</sup>. Post Menopausal bleeding [PMB] is defined as bleeding from reproductive system that occurs one year or more after menopause or even without amenorrhea, irregular menstruation continuing after 55 years of age<sup>1,2</sup>. The incidence of PMB is 10% in general population. At least 10-25% of PMB is said to have neoplastic lesions out of which approximately 10-15% are associated with endometrial carcinoma, most commonly adenocarcinoma<sup>3</sup>. Endometrial cancer is most common form of gynaecological cancer in developed countries<sup>5</sup> and it is third most common gynaecological cancer in India. The incidence is 3.7-17.9% in postmenopausal women with abnormal uterine bleeding<sup>4</sup>. In most cases, the first sign of endometrial cancer is PMB<sup>5</sup>. The causes of postmenopausal bleeding can also be benign like atrophic endometrium, endometrial hyperplasias and polyps.

## Objective -

To evaluate endometrial pathology in women with post-menopausal bleeding to rule out endometrial cancer or atypical hyperplasia referred to as premalignant lesions of endometrium.

## Materials and methods –

This was a descriptive study done on all post-menopausal women with bleeding per vagina attending Gynaecology out patient department of Gauhati Medical college and hospital, from 1<sup>st</sup> June 2012 to 30<sup>th</sup> May 2013. Total 73 cases were recruited in the study by purposive sampling method. A case was defined as women who reported with post menopausal bleeding per vagina [after at least 12 months of amenorrhea] after 40 years of age, provided that amenorrhea was not explained by medication or disease followed by complain of vaginal bleeding.

Women with bleeding diathesis, cardiac disease, already diagnosed genital tract malignancy, grossly abnormal cervix were excluded from the study. Institutional ethical committee clearance was obtained and informed consent was taken from all the study participants. Data involving demographic details, menstrual history, obstetric and past medical history, personal history was obtained by interviews. General and systemic examination was done.

Trans vaginal Sonography [TVS] was done on all the study subjects [with Siemens Sonoline G60Sr10] and cases were divided into low risk with endometrial thickness [ET] < 4 mm and high risk with ET > 4mm. Diagnostic Hysteroscopy was also done on 50 high risk cases with ET > 4mm [BY Wolf Richard Hysteroscope]. In the same setting, dilatation and curettage [D & C] was done and biopsy material obtained was sent for histopathological examination [HPE] in 10% formalin. The data collected was analysed statistically using descriptive statistics like chi square test, percentage, mean and standard deviation.

## Observations and results –

Out of total 73 women with post-menopausal bleeding enrolled in the study, majority [32%] were in the age group of 50-55 years, followed by less than 50 years [30%] and only 10% cases in the age group of 66-70 years. It was observed that number of patients with post-menopausal bleeding decreased with increasing age.

<b>Table 1: distribution of high risk PMB cases according to their HPE diagnosis</b>		
HPE diagnosis	Number of cases	Percentage
Endometrial atrophy	21	42
Secretory endometrium	02	04
Proliferative endometrium	06	12
Simple hyperplasia	10	20
Complex hyperplasia	02	04
Endometrial polyp	01	02
Endometrial adenocarcinoma	02	04
Endometritis	01	02
Inadequate	05	10
Total	50	100

Out of 50 cases with high risk endometrium of > 4mm thickness, endometrial biopsy sample was considered inadequate for biopsy in 5 cases. commonest histopathological diagnosis was atrophic endometrium in 21 cases, followed by simple hyperplasia in 10 cases. Endometrial adenocarcinoma was diagnosed in two cases. It was observed that most [57.2%] cases of atrophic endometrium, all six cases of proliferative endometrium and 80 % cases of simple hyperplasia were less than 55 years of age. Both the cases of adenocarcinoma were more than 65 years of age. In most of the cases [40%], the duration since menopause was 1-5 years in which 19 histopathological diagnosis were made, followed by 6-10 years in 36% cases in which 16 histopathological diagnosis were done the most common being atrophic endometrium. It was observed that 60 % of cases had only one episode of bleeding. Patients with all the biopsy outcomes had at least one episode of bleeding except those with adenocarcinoma who reported with 3 episodes. The uterine size was found to be normal in 38 cases, small in 4 cases and bulky in only 3 cases which were of simple hyperplasia, adenocarcinoma and endometritis. All the cases were multiparous except one who was nulliparous and unmarried and suffered from simple hyperplasia. In this study, 52% had associated medical problems like diabetes mellitus, hypertension, obesity, hypothyroidism, etc. Both the cases of adenocarcinoma had diabetes mellitus and hypertension. On TVS mean endometrial thickness observed was  $8.45 \pm 4.38$  mm, with most of the cases [52%] having thickness between 4-8mm. Both cases of adenocarcinoma had thickness between 19-22mm. Sensitivity, specificity, positive predictive value [PPV] and negative predictive value [NPV] of HPE on endometrial biopsy was 100 % in all the lesions except for polyp in which sensitivity was 50 % and NPV was 98.2%. So, overall of HPE sensitivity was 98.45 % and NPV was 98.4 %. It was observed that, for endometrial polyps and submucosal leiomyomas diagnosis by hysteroscopy was more easier.

### **Discussion –**

Postmenopausal bleeding is of great concern as it may be a clinical indication of endometrial carcinoma, though, other benign lesions may also be the cause. In present study, 73 women with postmenopausal bleeding were enrolled and were divided into low risk and high risk on the basis of endometrial thickness by TVS so as to avoid unnecessary D & C on all the PMB patients as it has been reported that majority of women with abnormal uterine bleeding have no endometrial pathology<sup>6</sup>. D&C was done and endometrial biopsy was taken of only high risk patients [endometrial thickness  $\geq 4$ mm] and HPE was done.

Endometrial histopathologies	Gredmark <sup>7</sup> 1995	Escoffery <sup>8</sup> 2002	Naik <sup>9</sup> 2005	Present study 2013
Endometrial atrophy	51.5%	26.7 %	32%	42%
Secretory endometrium	06%	-	-	04%
Proliferative endometrium	4.3%	04%	17%	12%
Hyperplasia	10.8%	28%	14%	20%
Endometrial polyp	9.5%	5.7%	-	02%
Endometrial adenocarcinoma	8.4%	12%	10%	04%
Endometritis	-	-	-	2%
Inadequate	14	25	-	10

Above table shows that like present study atrophic endometrium is the most common and hyperplasia is the second common endometrial pathology in other studies also. Unlike other studies, present study shows only 2 % cases of endometrial adenocarcinoma. In our study majority of patients presenting with PMB were less than 55 years of age which correlates with studies done by Das et al<sup>10</sup> [2003] and Tandulwalkar<sup>11</sup> et al 2009. It was observed in our study that number of patients with post-menopausal bleeding decreased with increasing age but probability of cancer increased with age as was observed by Thomas Gredmark<sup>7</sup> et al [1995]. Das et al<sup>10</sup> and Saxena et al<sup>12</sup> in their studies found that PMB is more common with 5 years of attaining menopause which is same as present study. We found strong statistical relation between with endometrial pathology and associated medical problems. Gull B et al<sup>13</sup> in 2001 reported in their study that several risk factors including diabetes mellitus and hypertension were associated with increased endometrial thickness and endometrial pathology. All the patients with endometrial pathology in our study were multiparous, except one, which correlates with studies by Tandulwalkar et al<sup>11</sup> [2009] and Cheema et al<sup>14</sup> [2008]. Granberg and Karlsson<sup>15</sup> observed that endometrial carcinoma presented with endometrial thickness of 18±6.2 and 21±11.8 mm, respectively, which is comparable with our study finding. Sensitivity, specificity, positive predictive value [PPV] and negative predictive value [NPV] of HPE on endometrial biopsy was 100 % in all the lesions except for polyp in which sensitivity was 50 % and NPV was 98.2%. So, overall sensitivity was 98.45 % and NPV was 98.4 %. Tandulwalkar et al<sup>11</sup> [2009] and Giusa-Chiferi et al<sup>16</sup>[1996] observed sensitivity of endometrial biopsy with HPE as 92% and 84% respectively and specificity as 88% and 89 % respectively.

### Conclusion –

Postmenopausal bleeding should be screened by TVS and hysteroscopy to select suitable candidates for D&C and endometrial biopsy. Histopathological examination of endometrial biopsy specimens on D&C is highly sensitive and specific for diagnosis of endometrial lesions in patients with post-menopausal bleeding.

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