ORIGINAL ARTICLE

MORPHOLOGICAL PATTERN OF ENDOMETRIAL LESIONS IN POSTMENOPAUSAL BLEEDING

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ABSTRACT

Back ground and Objectives: Abnormal uterine bleeding is common gynecological complaint and accounts approximately for 5 – 10% of postmenopausal women. The primary or secondary malignancy in females with postmenopausal bleeding (PMB) is around 10%. Frequent malignancies amid them are ovarian cancer, endometrial cancer or cervical cancer. The incidence of malignancy in postmenopausal period remains sufficiently high so it requires immediate investigation for early diagnosis, cautious follow up and speedy treatment. Postmenopausal uterine bleeding is also seen in a considerable number of patients who come with this complaint but are actually suffering from endometrial hyperplasia. This study was designed to determine the frequency of various morphological lesions as causes of bleeding in postmenopausal women.

Methods: This prospective study included 100 endometrial specimens from postmen-pausal women with bleeding over a period of 6 months in the Department of Pathology, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore from 10th August, 2010 to 10th January, 2011. The specimens were subjected to gross and microscopic examination for histopathological diagnosis.

Results: The most prevalent age at which postmenopausal bleeding presented was between 45-55 years group with mean age as 50.02 ± 4.5 years. Among the endometrial causes of postmenopausal bleeding benign cases had an incidence of 88% and 12% cases were malignant. Endometrial Hyperplasia was the most common among the benign causes followed by Chronic Endoemtritis. Adenocarcinoma was a major finding among the malignant causes. Among the 12% incidence of malignant cases, only 2% were of non-endometrioid type of endometrial adenocarcinoma (serous papillary type).

Conclusions: Bleeding from genital tract occurring after menopause is much more sinister than premenopausal bleeding. The incidence of a malignant cause increases as the time lapse between menopause and onset of bleeding increases. Although, the incidence of postmenopausal bleeding due to malignancy has fallen, it remains sufficiently high to require immediate and thorough investigation.

Keywords: Postmenopausal Bleeding, Endometrial Hyperplasia, Adenocarcinoma.

INTRODUCTION

Menopause is defined as the permanent cessation of menstruation resulting from loss of ovarian follicular activity. Vaginal bleeding that occurs after that 12-month timeframe is considered as postmenopausal bleeding.[1]

Because anovulatory "cycles" with episodes of multimonth amenorrhea frequently precede menopause, no consensus exists regarding the appropriate interval of amenorrhea before an episode of bleeding that allows for the definition of postmenopausal bleeding.[2]

Approximately 70% of all gynecological consultations in perimenopausal and postmenopausal women are for postmenopausal bleeding.[1] The anticipated incidence of bleeding right away after first 12 months of amenorrhea following the menopause was 409/1000 person per year, falling to 42/1000 persons.[2,3] According to various studies conducted in different parts of Pakistan, atrophic endometrium is the commonest cause of postmenopausal bleeding with a prevalence rate of 12-16%.[4,5]

Postmenopausal uterine bleeding (PMB) is generally regarded as an ominous and serious symptom. About 1 in every 10 women with postmenopausal bleeding will have womb cancer, and in a few cases bleeding may be a sign of another type of cancer such as vulval, vaginal or cervical cancer. PMB can occur in postmenopausal women for several reasons. Mainly it may be due to taking hormone replacement therapy. Additional causes of bleeding after menopause include uterine polyps, endometrium hyperplasia, due to thinning of the vaginal tissues often develops due to a decrease

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in estrogen.[3,6]

Organic lesions causing uterine bleeding include atrophic endometritis, endometrial hyperplasia and endometrial polyp which are the leading cause of postmenopausal bleeding[7]. Often, however, an organic cause is not identifiable and curettage may show atrophic endometrium[8] proliferative endometrium[9] and rarely secretory endometrium.[10]

Noteworthy is the fact that in most reports on PMB, malignancy of the uterus is not a common finding, incidence reported ranged from 3% to 14.2%[11]. Instead, the more commonly encountered cause is atrophic endometrium reported an incidence as high as 59%. Moreover, endometrial carcinoma may develop in atrophic endometrium.[12] During menopause the endometrium becomes thin and inactive, because of the failure of the ovary to respond to gonadotrophic hormones.[6]

Postmenopausal age is also an important factor. It varies in different part of the world. According to a study carried out in local population of Norfolk in United Kingdom, the incidence of postmenopausal bleeding peaks at age of 55-59 years and declines thereafter. However in Pakistan the average age of postmenopausal status was 55-60 years.[13] In addition to age, history, clinical examination and radiological findings are also employed to provide accurate diagnosis of PMB.[13,14]

Although some literature is already available on this topic, but present study was carried out to find out the frequency of histopathological patterns/causes in women with PMB because prevalence of any cause may change overtime. This study may help to give awareness to devise precaution any measures and management strategies.

The present study was undertaken to find out morphology of different pathological lesions of post-menopausal bleeding as cause/pattern of any disease tend to vary from population to population depending upon various epidemiological factors.

MATERIALS AND METHODS

This prospective study included 100 endometrial specimens from postmenopausal women with bleeding over a period of 06 months from 10th August, 2010 to 10th January, 2011 in the Department of Pathology, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore.

Material for the study consisted of endometrial biopsies and curettage samples from women with PMB the specimens were subjected to gross and microscopic examination for histopathologic diagnosis.

Women with any postmenopausal bleeding, spotting or vaginal discharge were included in the study. Patients with obvious cause of bleeding from cervix and vagina, patients with hysterectomy, with bleeding dyscrasias/on anticoagulant therapy or hormone therapy were excluded from the study. Detailed gross examination of the specimen was carried out according to the Performa. Standard procedure of processing, section cutting and slide staining was applied. Tissue section was examined under microscope to analyze morphology patterns of endometrial lesions and histopathological findings. Letter of informed consent was taken from each patient. Study was approved by Ethical committee of university/hospital.

Data Analysis

Data was analyzed with SPSS version 18. Age was calculated as mean ± SD. The percentage/frequencies of different morphological patterns of endometrial lesions like endometrial hyperplasia, atrophic endometritis, endometrial polyp and endometrial carcinoma were calculated.

RESULTS

The different endometrial patterns presenting as PMB were studied (Table 1). The most common cause of bleeding in the post menopausal women was endometrial hyperplasia which is 48% followed by Chronic Endometritis (25%). Endometrial Polyps were 8% and Atrophic Endometrium was 7%. Adenocarcinoma was 12%. The results are also evident in pie chart (Figure 1) Figure 2 shows simple endometrial hyperplasia with increased gland to stromal ratio.

Table 1: *Endometrial Histopathology in Relation to Postmenopausal Bleeding.*

Sr. No.	*Endometrial Histopathology*	*No. of Cases*	*% age*
1.	Hyperplasia	48	48%
2.	Chronic Endometritis	25	25%
3.	Endometrial Adenocarcinoma	12	12%
4.	Endometrial Polyp	8	8%
5.	Atrophic Endometrium	7	7%
Total:		100	100%

Atrophic endometritis is displayed in figure 3 where endometrial stroma is infiltrated by chronic inflammatory cells.

Among causes of PMB, benign causes had incidence of 88% and malignant causes had incidence of 12% (Table 2).

Age group of the patients ranged from 45 to 75 years, ages of the patients were divided into three groups i.e. Group-I, Group-II, Group-III.

In age Group-I (45-55 years) mean age as 50.02 ± 4.5 years, the cases of endometrial lesion presenting with PMB were 56%. In this age group, the commonest lesion of PMB was endometrial hyperplasia i.e. 27 out

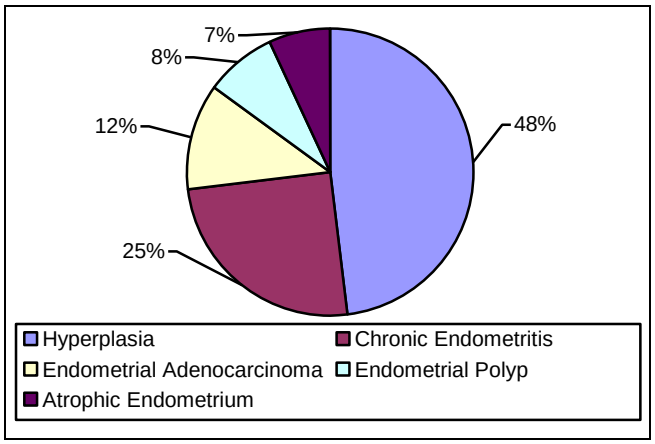

Fig. 1: *Endometrial Histopathology.*

Table 2: *Incidence of Various Endometrial Causes of Postmenopausal Bleeding (PMB).*

Causes	*No. of Cases*	*% age*
Benign		
Chronic Edometritis	25	25%
Endometrial Polyp	8	8%
Atrophic Endometrium	7	7%
Total:	40	40%
Premalignant		
Hyperplasia	48	48%
Total:	48	48%
Malignant		
Endometrial Adenocarcinoma	12	12%
Total:	100	100%

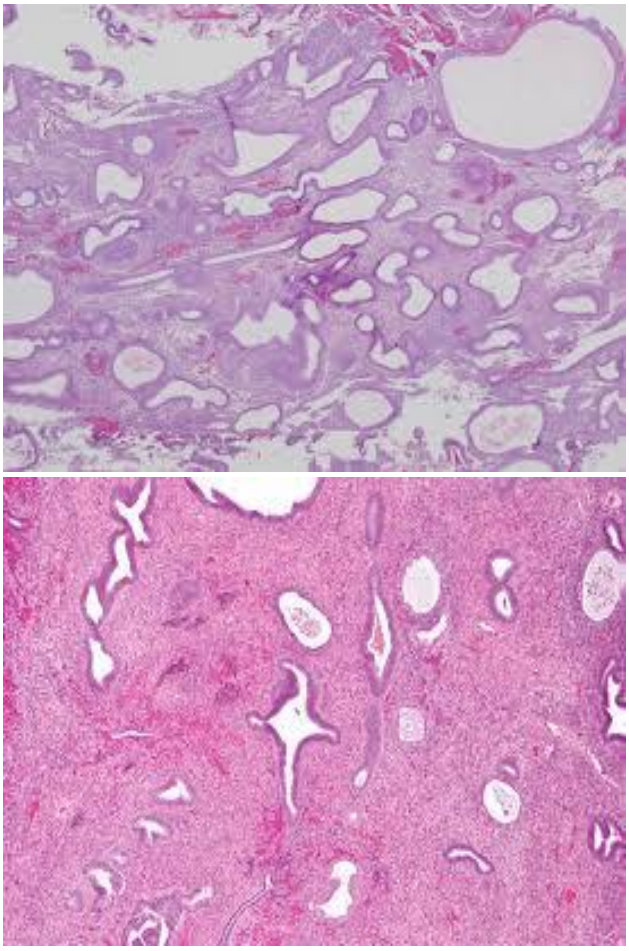

Fig. 2&3: *Simple Hyperplasia and Atrophic Endometrium.*

of 56 cases (48%) followed by chronic endometritis 19 out of 56 cases (34%). Endometrial polyps were observed in 6 out of 56 (11%) and atrophic endometrium in 10 out of 56 cases (2%). There were 3 cases with malignancy (5%). All were endometrial adenocarcinoma.

In age Group-II (56-65 years), mean age being

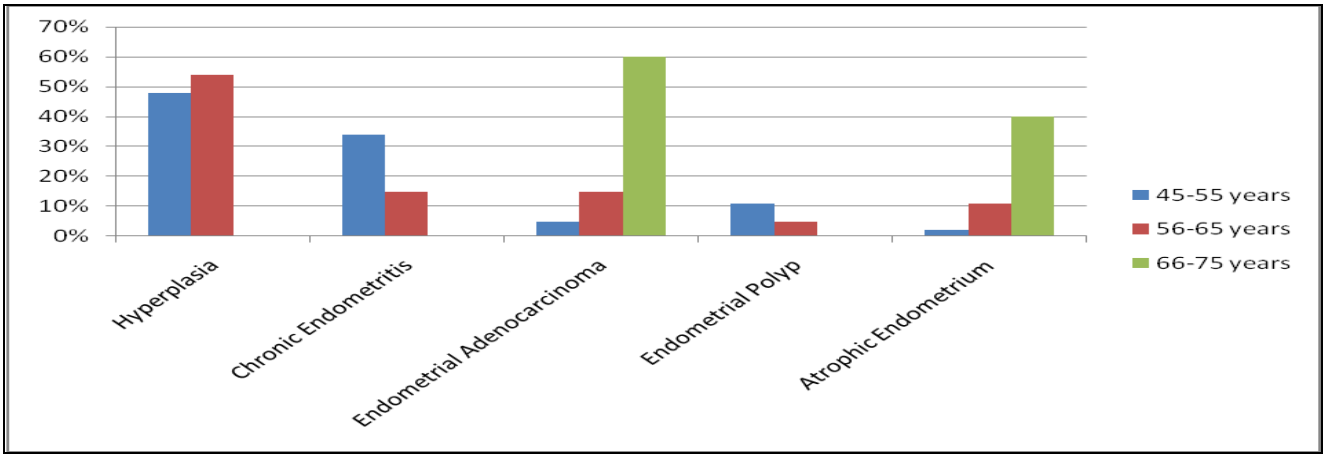

Fig. 4: *Distribution of various endometrial lesions in different age groups.*

Table 3: *Types and grades of adenocarcinoma according to different age groups.*

Age	*Endometrial Adenocarcinaoma*	*FIGO grade*
Group I (45 – 55 years) Total n = 56	3 (5%)endometrioid adenocarcinoma	I
Group II (56 – 65 years) Total n = 39	6 (5%)endometrioid adenocarcinoma	I
Group – III (66 – 75 years) total n = 5	3 (60%) non-endometrioid type of endometrial adenocarcinoma (serous papillary type).	II

60.01 ± 3.8 years. Total cases presenting with PMB were 39 out of 100 cases (39%). The highest incidence was of endometrial hyperplasia 21 out of 39 (54%) followed by chronic endometritis 6 out of 39 cases (15%). The maximum cases of atrophic endometrium were found in this age group i.e. 4 out of 39 cases (11%). There were 2 out of 39 cases (5%) of endometrial polyps. The malignancy that belonged to this age group was 6 out of 39 cases (5%).

In age Group-III (66-75 years), mean age was 69.5 years, there were a total of 5 cases only. Out of 5 cases 3 were of endometrial adenocarcinoma (60%) (Grade I) and atrophic endometrium were 2 out of 5 cases (40%).

The distribution of various endometrial lesions according to age groups are presented in figure 4.

Types and grades of adenocarcinoma according to different age groups is presented in table 3.

DISCUSSION

The age at onset of menopause in Asian women is 48 years which is about 3 years earlier than the west. The age at natural menopause may vary due to environmental and genetic factors. In women with PMB most of the cases has atrophic endometrium. Organic lesions were also reported. Among these most common was endometrial carcinoma followed by endometrial polyp and submucous leiomyoma.[15,16]

According to our results the highest incidence of endometrial hyperplasia with PMB was48%. These results are comparable with study of a group of workers reported as 45%.[17] However some studies showed that the incidence of endometrial hyperplasia was 28%and 30%.[18] It is stated that higher incidence of endometrial hyperplasia indicate that postmenopausal endometrium in bleeding exhibits an estrogenic effect of varying degrees although the patients did not receive exogenous estrogens.[19]

Chronic endometritis in our study was found in incidence of 25%. This can be correlated with a study who showed incidence of 13%.[20] The reason of high incidence of chronic endometritis in present study may be due to the kind of the patients in this catchment area of FJMC, Lahore. Additionally lower levels of hygiene, poor socioeconomic status and different gynaecological interventions like endometrial biopsies, therapeutic abortion and IUCD insertion are also common causes.[20]

The incidence of endometrial adenocarcinoma in our results accounted for 12% This was comparable with a group of workers who showed the incidence was 13.6%.[21] On the other hand Robert et al showed the incidence of 28%.[22] The lowering incidence of malignancy suggest increasing education and awareness among public to treat the complaints of PMB and that physicians are more insistent on prompt investigation with curettage in all postmenopausal bleeding patients.[23]

The incidence of endometrial polyps in present study was 8% which was comparable with another study.[24] Atrophic endometrium as a cause of PMB in the present study was 7% while other study showed higher incidence i.e. 26.7%.[21]

According to our study majority of the patients fell in the age group of 45-55 years and were 56% of the total patients. This coincides with the study which reported the most common age group is 50 years.[24]

In case of atrophic endometrium, the turnover of the patient in present study was more in age group 56-65 years i.e. 11%. However another study reported the cases of atrophic endometrium were more common in 45-55 years i.e. 34.5%.[24] The reason for this lower incidence of atrophic endometium may be due to low turnover rate of the patient to the hospitals due to socioeconomic and social pressures.

The conditions relating to premalignant conditions of endometrium are graded as hyperplasia. In present study, this is more common in 45-55 years of age group i.e. 48% which is comparable with a study which also reported 48%. The age group 56-65 years had a relatively lower incidence of endometrial hyperplasia and no cases were found in 66-75 years of age group. This is because of the short life span of females in our country leading to low turnover of the patient.

In present study, endometrial carcinoma is more common in 56-65 years of age 15%. This is close to a study which found it 22.6%.[24] The reason of lower incidence of endometrial carcinoma may due to awareness among the patients which compels them to seek early investigations and treatment.[25]

Study ***concluded*** that the most prevalent age at which postmenopausal bleeding presented was between 45-55 years with mean age as 49.02 years. Among the endometrial causes of postmenopausal bleed-

ing, benign cases had incidence of 88% and 12% cases were malignant. Endometrial Hyperplasia was the most common among the benign causes followed by Chronic Endoemtritis and Endometrial atrophy. Adenocarcinoma was a major finding among the malignant causes. Among the malignant causes, endometrial adenocarcinoma of endometrial type was most frequent between 56-65 years of age group as compared to high grade causes.

Although the incidence of PMB due to malignancy has fallen, it remains sufficiently high to require immediate and thorough investigation.

Precise diagnosis makes it much easier to counsel the patient about further course of management.

However further studies are needed in larger number of women to reach a better conclusion.

Authors' Contribution

SM: Concept, article writing, data analysis. FK: Literature review. FM: Proof reading, article writing.

Conflict of Interest: None.

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