Original Article

Study of endometrial pathology in perimenopausal women with abnormal uterine bleeding

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Abstract

Context: Abnormal uterine bleeding is one of the most common causes of concern for women in perimenopausal age group. An understanding and recognition of the wide spectrum of normal menstruation, normal cyclical patterns, proliferative lesions, precursor lesions and carcinoma of the endometrium is important. This knowledge is essential for prevention and effective management of these patients. **Aim:** To analyse the patterns of changes in endometrium in perimenopausal women who presented with abnormal uterine bleeding. **Materials and Methods:** A total of 3795 cases of formalin fixed and paraffin embedded sections of endometrial tissue was retrieved and reviewed from the Archives of Department of Pathology. All the patients included in the study were perimenopausal women with abnormal uterine bleeding, the age ranging from 40years to 55years from Jan 2008 to Dec 2012. The study consisted of 1880 endometrial biopsies which included endometrial curettings and aspirates and 1915 surgically resected hysterectomy specimens. 161 specimens were excluded from the study due to inadequate sampling. **Results:** Our study showed that abnormal uterine bleeding was seen often between 40-45yrs of age. The Incidence of Perimenopausal women with Abnormal Uterine bleeding decreased with age. The incidence was significantly low above the age of 51 years (13.40%). In perimenopausal women with abnormal uterine bleeding 42.8% had normal cyclical pattern, 32.1% had disordered proliferative pattern. Less than 5% of this population had hyperplasia or carcinoma.

Keywords: endometrial pathology, perimenopausal.

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INTRODUCTION

Abnormal uterine bleeding (AUB) can be defined as changes in the normal menstrual pattern. The key characteristics include changes in the regularity, frequency, heaviness and duration of flow. Perimenopause also called the menopausal transition, is the interval when physiological changes occur, that begins the transition to menopause. Therefore, the perimenopausal age is taken as between 40–55 yrs[1]. Abnormal uterine bleeding is often the cause of concern for perimenopausal women to consult the gynaecologist. A clear understanding of normal menstruation, normal cyclical patterns, proliferative lesions, precursor lesions and carcinomas of the endometrium is essential for the effective management of these patients. In many parts of the world, endometrial cancer, the most common gynaecological cancer accounts for 4-8% of all Carcinomas [2]

MATERIALS AND METHODS

We studied 3795 cases of endometrial tissue from the case files of Department of Pathology in perimenopausal women with abnormal uterine bleeding with age ranging from 40years to 55years from Jan 2008 to Dec 2012. Of the total number of cases 1880 were endometrial biopsies which included endometrial curettings and aspirates and 1915 were surgically resected hysterectomy specimens. 161 specimens were excluded from the study since opinion was not possible due to inadequate sampling. The total of 3634 specimens was further categorized into groups A, B and C according to the age:

- A - Age group from 40 to 45 years
- B - Age group from 46 to 50 years
- C - Age group from 51 to 55 years

The biopsies and the hysterectomy specimens were immediately fixed in 10 % phosphate buffered formalin for 24 - 48 hours. After gross examination, the endometrial samples were totally submitted and

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representative sections were submitted from the hysterectomy specimens and the samples were processed using automatic tissue processor. Paraffin sections of 5 micrometer thickness were made, stained and mounted on glass slides. The diagnosis was made based on hematoxylin and eosin stained sections.

RESULTS

We have studied 3795 cases in the period between January 2008 to December 2012 in the Department of Pathology, SRMC and RI. The age of the patient in our study ranged between 40 to 55 years.

Table 1: Maximum number of cases with abnormal uterine bleeding are seen in between 40-45yrs

	Frequency	Percent	Valid Percent
Valid cyclical pattern	1556	41.0	42.8
PE	142	3.7	3.9
CE	91	2.4`	2. 5
DPP	1167	30.8	32.1
BEP	517	13.6	14.2
SH without atypia	73	2.0	2.0
CH with atypia	33	.8	.9
CH without atypia	7	.2	.2
Carcinoma	48	1.3	1.3
Total	**3664**	**95.8**	**100.0**
Missing system Total	**3795**	**100.0**	

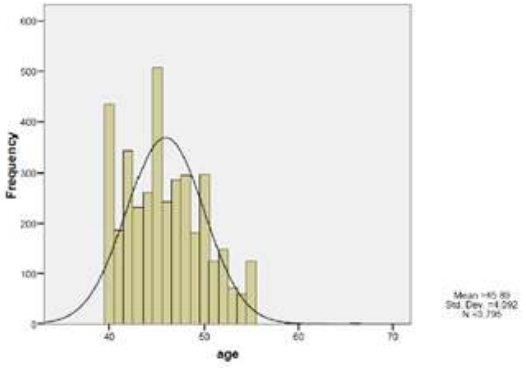

Figure 1:

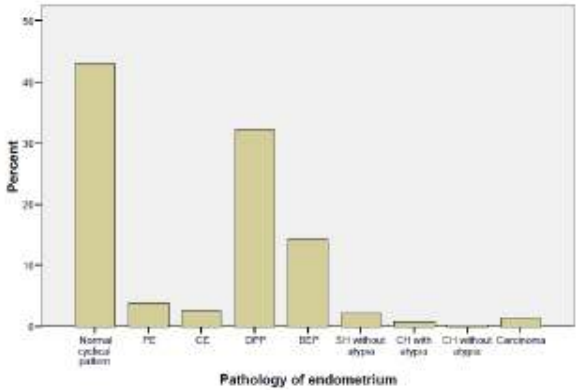

Figure 2: Distribution of pathology of endometrium in perimenopausal women

PE-Pill Endometrium, CE- Chronic Endometritis, DPP-Disordered Proliferative Pattern, BEP- Benign Endometrial Polyp, SH- Simple Hyperplasia, CH-Complex Hyperplasia.

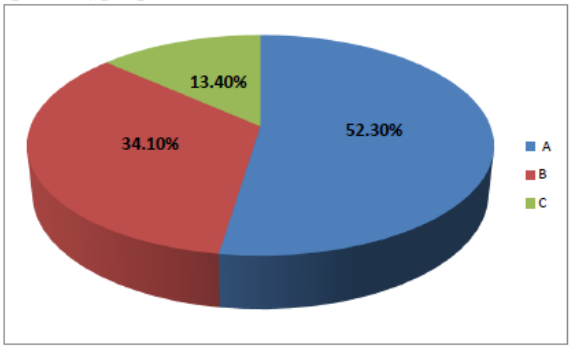

Figure 3: Distribution of pathology of endometrium in perimenopausal women

PE-Pill Endometrium, CE- Chronic Endometritis, DPP-Disordered Proliferative Pattern, BEP- Benign Endometrial Polyp, SH- Simple Hyperplasia, CH-Complex Hyperplasia.

Table 2: Number of specimens based on age groups. A (40-45 yrs), B (46-50yrs) and C (51-55 yrs)

	Age		
	<=45	46-50	>50
Pathology of endometrium Normal cyclical Pattern	855	485	216
	54.9	31.2	13.9
	44.9	39.1	44.1
	79	48	15
PE	55.6	33.8	10.6
	4.1	3.9	3.1
	49	33	9
CE	53.8	36.3	9.9
	2.6	2.7	1.8
	606	429	132
DPP	51.9	36.8	11.3
	31.8	34.6	26.9
	260	186	71
BEP	50.3	36.0	13.7
	13.7	15.0	14. 5
	38	26	11
SH without atypia	50.7	34.7	14.7
	2.0	2.1	2.2
	6	10	13
CH with atypia	20.7	34. 5	44.8
	3	8	2.7
	4	3	2
CH without atypia	44.4	33.3	22.2
	2	2	4
	7	20	21
Carcinoma	14.6	41.7	43.8
	4	1.6	4.3
	1904	**1240**	**490**
Total	**52.4**	**34.1**	**13. 5**
	100	**100**	**100**

Pathology of endometrium based on categories. A (40-45 yrs), B (46-50yrs) and C (51-55 yrs). PE-Pill Endometrium, CE- Chronic Endometritis, DPP- Disordered Proliferative Pattern, BEP- Benign Endometrial Polyp, SH- Simple Hyperplasia, CH- Complex Hyperplasia.

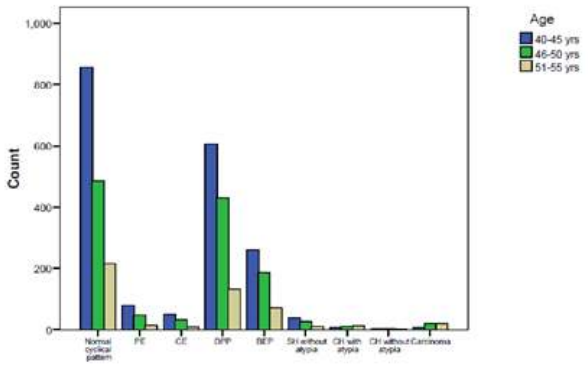

Figure 4: Pathology of endometrium based on categories. A (40-45 yrs), B (46-50yrs) and C (51-55 yrs). PE-Pill Endometrium, CE- Chronic Endometritis, DPP- Disordered Proliferative Pattern, BEP- Benign Endometrial Polyp, SH- Simple Hyperplasia, CH- Complex Hyperplasia

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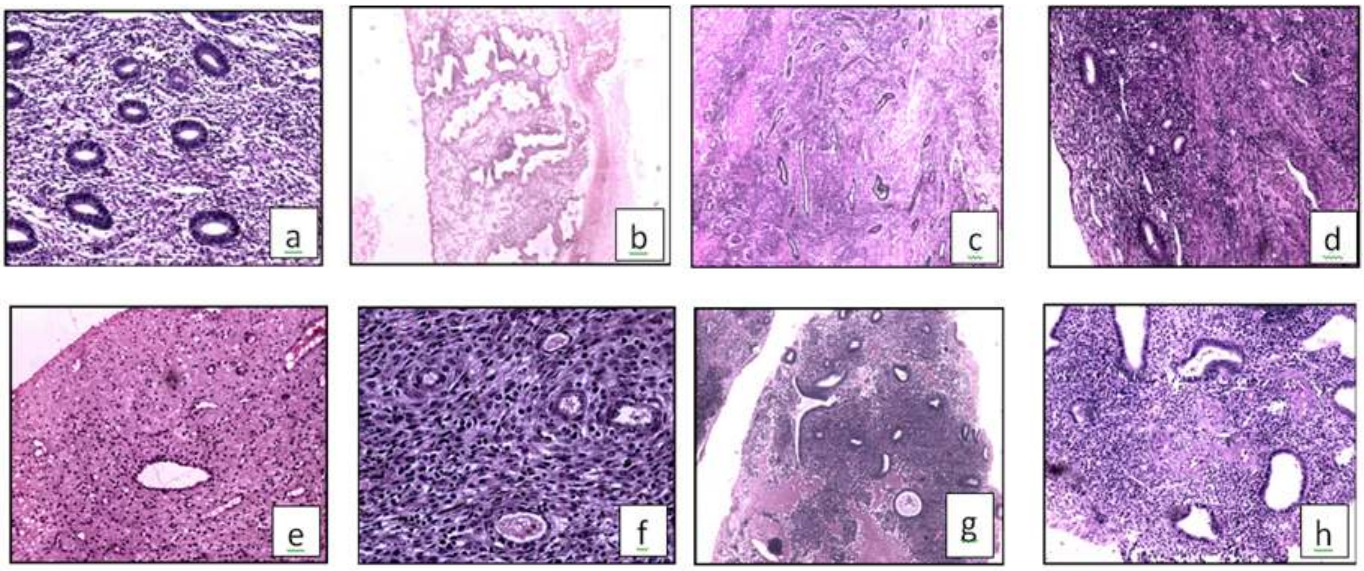

Legend

Figure 5a: Proliferative Pattern. H&E x 100, **b**: Secretory Pattern. H&E x 40, **c**: Anovulatory Pattern. H&E x 40, **d**: Atrophic Pattern. H&E x 100

Figure 6 e: Pill Endometrium. H&E x 100, f: Chronic Endometritis. H&E x 200, g: Disordered Proliferative pattern. H&E x 40, h: Benign Endometrial Polyp. H&E x 100

DISCUSSION

AUB is the most frequent problem among the perimenopausal women attending the Gynaecology outpatient department. The sensitivity, for the detection of endometrial abnormalities in endometrial biopsies has been reported to be as high as 97% [3]. Hence, it is a valuable tool in the diagnosis of AUB. Our study included 3795 cases of endometrium (both small biopsies and hysterectomy specimens) of perimenopausal women with abnormal uterine bleeding. These patients were diagnosed to have AUB based on the clinical and laboratory findings. Our study showed that the women between age group of 40 to 45 yrs were the most common group presenting with AUB. Normal menstrual cyclical patterns were seen in 42.8%.The reason for increased incidence of AUB in this group could be due to shortened cycles which are intermittently anovulatory due to decreasing ovarian follicles and in the level of estradiol. In our study, the normal cyclical patterns such as proliferative pattern, anovulatory cycles were the commonest findings in all age groups, accounting to 42.8%. The second most common endometrial pattern

irrespective of all age groups was disordered proliferative pattern (32.1%). However, this pattern was found slightly higher in 46-50 years of age group compared to the other age groups. Recognising patients with disordered proliferative pattern will be of definitive help to the gynaecologists to prevent the disease progression. The incidence of disordered proliferative pattern in our study is almost the same when compared to cho nam hoon *et al* who found 36% in their study[4]. The incidence of benign endometrial polyp was similar in all the age groups. The total incidence of benign endometrial polyp in our study was 14.2%. In our study, endometrial hyperplasias accounted for 3.1% when all three age groups were considered. This incidence is compared to be less when compared to the Gredmark *et al* [5] study. The reason could be that many patients are identified at the early stage which is the disordered proliferative phase and this phase considered to be a step ahead of hyperplasia [6]. Incidence of simple hyperplasia without atypia was found to be almost the same incidence in all age groups. There was slightly higher incidence of complex hyperplasia without atypia in the women above 50 years of age group. The incidence of complex hyperplasia with atypia was much higher in women above 50 years (2.7%) when compared to the other age groups. According to Kurman *et al* similar significant difference of incidence as in our study was found. This confirms that the cytological atypia is the most important key feature in identifying the significant frequency of progression to carcinoma. Lesser than 2% of hyperplasias without cytological atypia progresses to carcinoma where as 23% of hyperplasias with cytological atypia progresses to carcinoma. However,increasing degrees of glandular complexity and crowding of glands increases the tendency of progression to carcinoma but not to the extent that cytological atypia does. Hence, women with atypical hyperplasia are recommended to have surgery as early as possible[7]. In our study, the incidence of carcinoma was much higher in 51-55 yrs of age group, when compared to other age groups. This result was almost similar to the data mentioned by Yusuf *et al* [8] in their study which states that the incidence of carcinoma increases with that of the age.

CONCLUSION

Our study showed maximum number of perimenopausal women with AUB in was seen between 40-45 yrs of age group. The incidence of AUB in perimenopausal women decreased with age. The incidence was significantly low above the age of 51 yrs. More than 50% of samples received for AUB were hysterectomy specimens. Normal cyclical patterns (42.8%) and disordered proliferative pattern (32.1%) were the commonest changes in the endometrium of perimenopausal women with AUB. About 3.9% of biopsies showed changes secondary to exogenous progesterone (pill endometrium) since the biopsies were taken during the course of treatment. Benign endometrial polyp was one of the important causes of AUB amounting to 14.2% of all cases whereas hyperplasias and carcinomas together were less than 5% and was found increasing with age. When we analyzed the precursor lesions, simple hyperplasia without atypia was the commonest precursor lesion. We did not come across a case of simple hyperplasia with atypia in our study. Incidence of complex hyperplasia without atypia was also low in our study. Complex hyperplasia with atypia (33%) was seen more with increasing age groups.

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