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Research Article

## Histopathological pattern of endometrium in abnormal uterine bleeding of perimenopausal women

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### ABSTRACT

**Background:** The aim of the study was to evaluate the histopathological pattern of endometrium in perimenopausal women presenting with abnormal uterine bleeding.

**Methods:** This prospective study was carried out from June 2014 to May 2015 in a tertiary care teaching hospital on 180 number of perimenopausal women who presented with abnormal uterine bleeding.

**Results:** Most of the patients were between 40-45 years of age (63.89%) and menorrhagia was the dominant clinical presentation 80 (44.44%). The commonest pathology was hyperplasia in 83 (46.11%) women with simple hyperplasia without atypia being the predominant pattern (65 cases) which was most commonly seen between 40 and 45 years of age. Atrophic endometrium was the common pattern in age group of > 50 years. Other pathology identified were proliferative endometrium (20.56%), secretory endometrium (16.11%), endometritis (2.22%), endometrial polyp (2.22%), pregnancy related (2.22%) and carcinoma (1.11%).

**Conclusions:** Histopathological pattern of the endometrium in abnormal uterine bleeding in perimenopausal women should be studied especially to rule out preneoplasia and malignancy

**Keywords:** Abnormal uterine bleeding, Perimenopause, Menorrhagia, Endometrium

### INTRODUCTION

The term Abnormal Uterine Bleeding (AUB) is used to describe any type of bleeding that does not fall within the normal ranges for amount, frequency, duration or cyclicity.<sup>1</sup> It occurs in various forms like menorrhagia, polymenorrhoea, polymenorrhagia, metrorrhagia, menometrorrhagia etc.<sup>2</sup> The International Federation of Gynaecology and Obstetrics in November 2010, accepted a new classification system for causes of abnormal uterine bleeding in the reproductive years. The system, based on the acronym PALM-COEIN (polyps, adenomyosis, leiomyoma, malignancy and hyperplasia-coagulopathy, ovulatory disorders, endometrial causes, iatrogenic, not classified) was developed in response to concerns about the design and interpretation of basic science and clinical investigation that relates to the

problem of abnormal uterine bleeding.<sup>3</sup> Endometrial curettage or biopsy could be effective and safe diagnostic step in evaluation of abnormal uterine bleeding after ruling out medical causes. Histopathological diagnosis varies in relation to the age with endometrial carcinoma and hyperplasia being more in peri and postmenopausal group while in younger age groups, changes associated to hormonal effects seems to be more common. This study was carried out to evaluate the histopathological pattern of endometrium in perimenopausal women presenting with abnormal uterine bleeding.

### METHODS

This prospective study was carried out in the department of Pathology in collaboration with the department of Obstetrics and Gynaecology of Medical College from

June 2014 to May 2015. Patients presenting with AUB in perimenopausal age group (women with the age group of 40 years to within 1 year of menopause) were selected. Women with systemic or non-pelvic causes of bleeding without adequate samples and unfixed specimens were excluded from the study. Institutional ethical clearance was taken for the study. After obtaining informed consent from selected patients, the relevant data like age, pattern and duration of abnormal bleeding, menstrual history, obstetric history and other associated findings in clinical examination and lab investigation results were recorded. The study materials included a total number of 180

specimens consisting of 100 hysterectomy specimens and 80 endometrial sample (endometrial curettage and biopsy). All specimens were transported in 10% formalin to the pathology laboratory. All the specimens were embedded in paraffin and 3-4 microns thick sections were made. Tissue sections were stained with haematoxylin and eosin stain. Data were entered in Microsoft Excel and analysis was done in the form of percentage, proportion and represented as tables where necessary.

## RESULTS

**Table 1: Distribution of age and parity (N=180).**

Parity	40-45 Years	>45-50 Years	>50years	Total (Percentage)
0	2	1	-	3 (1.67%)
1	16	8	1	25 (13.89%)
2	37	9	4	50 (27.78%)
3	25	12	5	42 (23.33%)
≥4	35	18	7	60 (33.33%)
Total	115(63.89%)	48(26.67%)	17(9.44%)	180 (100%)

**Table 2: Distribution of menstrual complaints and duration (N=180).**

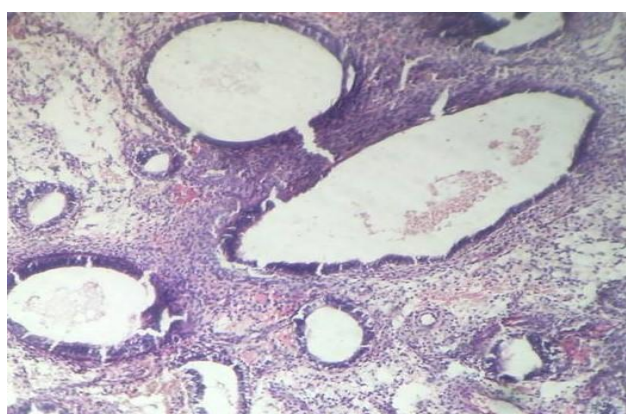
Complaints	1-3months	>3-6months	>6-12months	>12 months	Total (%)
Menorrhagia	11	48	12	9	80(44.44%)
Polymenorrhagia	4	13	3	2	22(12.22%)
Metrorrhagia	9	15	5	3	32(17.78%)
Menometrorrhagia	7	12	4	4	27(15.00%)
Post-menopausal bleeding	8	7	4	0	19(10.56%)
Total	39(21.67%)	95(52.78%)	28(15.55%)	18(1.00%)	180(100%)

**Table 3: Histopathological findings of endometrium (N=180).**

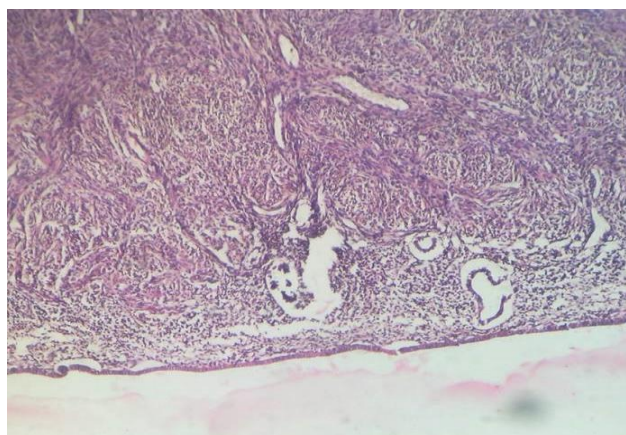
Endometrial pattern	Number	Percentage
Proliferative endometrium	37	20.56
Secretory endometrium	29	16.11
Pregnancy related	4	2.22
Menstrual endometrium	3	1.67
Atrophic endometrium	14	7.78
Endometritis	4	2.22
Endometrial polyps	4	2.22
Endometrial hyperplasia	Simple without atypia	65
	Simple with atypia	2
	Complex without atypia	10
	Complex with atypia	6
Endometrial carcinoma	2	1.11
Total	180	100

**Table 4: Distribution of cases of AUB with endometrial pattern according to age group.**

Age groups	40-45 years	>45-50 years	> 50 years	Total
Proliferative endometrium	27(72.98%)	10(27.02%)	-	37(100%)
Secretory endometrium	22(75.86%)	7(24.14%)	-	29(100%)
Pregnancy related	4(100%)	-	-	4(100%)
Menstrual endometrium	3(100%)	-	-	3(100%)
Atrophic endometrium	2(14.29%)	2(14.29%)	10(71.42%)	14(100%)
Endometritis	3(75.00%)	1(25.00%)	-	4(100%)
Endometrial polyp	3(75.00%)	-	1(25.00%)	4(100%)
Simple hyperplasia without atypia	39(60.00%)	24(36.92%)	2(3.08%)	65(100%)
Simple hyperplasia with atypia	1(50.00%)	-	1(50.00%)	2(100%)
Complex hyperplasia without atypia	8(80.00%)	2(20.00%)	-	10(100%)
Complex hyperplasia with atypia	3(50.00%)	2(33.33%)	1(16.67%)	6(100%)
Endometrial carcinoma	-	-	2(100%)	2(100%)
Total	115(63.89%)	48(26.67%)	17(9.44%)	180(100%)



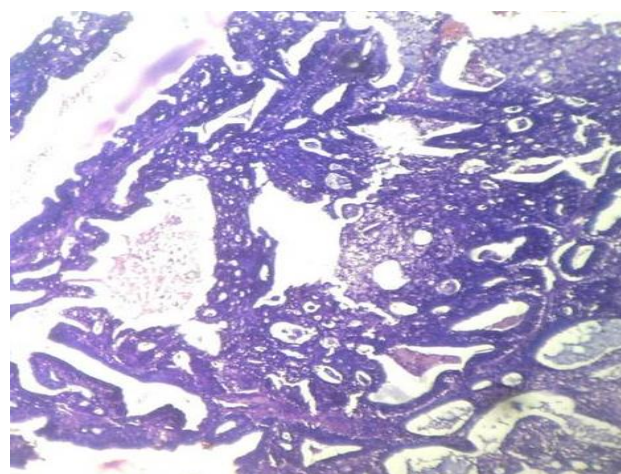
**Figure 1: Simple endometrial hyperplasia without atypia.**



**Figure 2: Atrophic endometrium.**

A total 180 number of endometrial samples of patients presenting with abnormal uterine bleeding were obtained during the study period. The age of the women were categorised into three groups (Table 1). Most of the patients were between 40-45 years of age (63.89%).

Highest number of patients were of para 4 or more (33.33%) followed by para 2 (27.78%) (Table 1). Different menstrual pattern of abnormal uterine bleeding as well as duration of symptoms were shown in table 2. The majority of patients gave history of menstrual problem for a period between 3-6 months 95(52.78%) and menorrhagia was the dominant presentation 80 (44.44%).



**Figure 3: Endometrial carcinoma.**

In histopathological examination various patterns of endometrium were observed in the study. Women presenting with normal cyclical pattern proliferative, secretory and menstrual pattern constituted 20.56%, 16.11% and 1.67% respectively. The commonest pathology observed was hyperplasia in 83 (46.11%) patients (Table 3) with simple hyperplasia without atypia being the predominant pattern (65 cases). A total of 83/180 cases showed hyperplastic pattern which were most commonly seen between 40 and 45 years of age (Table 4). Atrophic endometrium was the most common pattern in > 50 years age group. Benign endometrial polyp was observed in 4 (2.22%) cases of which 3 cases

were in 40 to 45 years of age. All the cases of endometrial carcinoma were in the age group of > 50 years.

## DISCUSSION

Abnormal uterine bleeding is one of the commonly encountered complaints in gynaecologic practice. It accounts for more than 70% of all gynaecological consultations in the peri- and postmenopausal age group.<sup>4</sup> In the present study, 180 numbers of perimenopausal women presenting with abnormal uterine bleeding were analysed. Most number of patients (63.89%) was 40-45 years of age group. The dominant menstrual problem was menorrhagia (44.44%) which was similar to that reported by Jetley et al and Pillai S.<sup>5,6</sup> It appears in this study that the maximum patients attended hospital for treatment after suffering for 3-6 months (52.78%) which was comparable to the study of Kathuria R and Bhatnagar B (50%).<sup>7</sup>

Endometrial hyperplasia was the most common histological pattern observed in our study and was seen in 83 (46.11%) cases. Study done by Ghani et al has reported almost similar incidence with 41.5% of endometrial hyperplasia in perimenopausal age group.<sup>8</sup> In the studies done by Dangal G, Slobada L and Khare et al. found endometrial hyperplasia in 23%, 22.6% and 36.2% respectively which were lower than our study<sup>9-11</sup>. On categorizing, the types of endometrial hyperplasia, simple hyperplasia without atypia was seen in 65 cases (78.31%), complex hyperplasia without atypia in 10 cases (12.04%), complex hyperplasia with atypia in 6 cases (7.23%) and simple hyperplasia with atypia 2 cases (2.41%). In our study, simple hyperplasia was predominant which was similar to the study of Doraiswami S et al who observed 68% incidence of endometrial hyperplasia in 40-49 years of age group.<sup>12</sup> Endometrial hyperplasia is commonly seen in perimenopausal age group due to failure of ovulation. Persistent unripened follicles expose the endometrium to excessive and prolonged estrogenic action. The incidence of endometrial hyperplasia without and with atypia peaks in the early 50s and early 60s respectively.<sup>5</sup>

In our study, proliferative endometrium was found in (20.56%) of cases which was comparable to Khare et al (21.2%).<sup>11</sup> However, most other studies have observed a higher incidence with 29.16%, 35.09%, and 38.5% of cases.<sup>9,13,14</sup> Secretory phase of endometrium was seen in 16.11% cases, which is in concordance with the result of the study by Patil et al.<sup>15</sup>

Atrophic endometrium comprised of 14 (7.78%) cases of AUB and was the most common in postmenopausal women. In other studies its incidence varies from 1.1%-7%.<sup>12,16-19</sup> The exact cause of bleeding in atrophic endometrium is not known. It is thought to be due to anatomic vascular variations or local abnormal defective haemostatic mechanisms.<sup>12</sup>

In this study, endometrial carcinoma was found in 2 (1.11%) cases, which is almost similar to that reported by Khan S et al and Jairajpuri ZS et al.<sup>17</sup> In the present study, endometrial carcinoma was found in > 50 years of age group. A study done by Dangal et al. in Nepal documented a lower incidence of endometrial cancer in Nepalese woman attributing it to the practice of early childbearing and multiparity.<sup>9</sup> Possibly, the same factors contributed to a lower incidence of carcinoma in our patients.

## CONCLUSIONS

The present study shows that endometrial hyperplasia is the most common histopathological pattern of endometrium for abnormal uterine bleeding in perimenopausal women in our region. Thus, histopathological evaluation of endometrium is especially recommended in women of over the age of forty years presenting with AUB, to rule out preneoplastic lesions and malignancies.

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*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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