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Original Research Article

Endometrial histopathology patterns in women with abnormal uterine bleeding

Anjali Choudhary, Shikha Agarwal, Swati Kohli*, Shweta Mishra, Parul Singh

Department of Obstetrics and Gynaecology, Sri. Guru Ram Rai Institute of Medical and Health Services, Patel Nagar, Dehradun, Uttarakhand, India

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***Correspondence:**

Dr. Swati Kohli,

E-mail: swatikohli26@gmail.com

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ABSTRACT

Background: Abnormal uterine bleeding is the most common gynaecological condition for which many women seek medical opinion. Evaluation of these women requires careful investigation into the cause and nature of bleeding with a main focus to exclude organic pathology, especially genital malignancies. Endometrial biopsy is one such intervention which is of immense value in categorizing the conditions. Aims and objectives of current study were to analyse endometrial histology patterns in women with AUB.

Methods: This was a retrospective study conducted on women with AUB who presented in the gynae OPD during the study period of one year and had endometrial biopsy as part of evaluation. Women between with AUB were included in the study after excluding pregnancy related bleeding. Detailed clinical history, examination findings, investigations and endometrial histopathology was noted.

Results: A total of 97 women with AUB who had undergone dilatation and curettage with endometrial biopsy were studied. Majority of women were in age group of 40-45 years and heavy menstrual bleeding was the commonest complaint, AUB (P) 17% and AUB (L) 39%, accounted for most of the clinical presentations. Endometrial histology showed varied patterns 27 % had secretory endometrium, 11% proliferative endometrium. There were 7 cases of endometrial hyperplasia without atypia and three cases of endometrial malignancy.

Conclusions: Histopathological evaluation of endometrium is the cornerstone of management of abnormal uterine bleeding. Endometrial patterns obtained can be useful in ruling out malignancy and help in formulating further management.

Keywords: Abnormal uterine bleeding, Endometrial biopsy, Histopathology, Perimenopausal women, PALM-COEIN

INTRODUCTION

Menstrual irregularities are the commonest complaints for which women seek consultation and comprise about 30% of gynaecologic out-patient attendees, with an overall prevalence of 10-30%, which may vary between different populations.¹ Abnormal uterine bleeding (AUB), defined as any abnormality of menstrual bleeding in duration, frequency and amount, can lead to physical debility.² Chronic AUB was defined as 'bleeding from the uterine corpus that is abnormal in volume, regularity

and/or timing that has been present for the majority of the last 6 months' according to FIGO 2011 consensus.²

According to one study the menstrual disorders account for 19.1% of 20.1 million visits to gynaecology clinics and about 25% of gynaecological surgeries are done for AUB.^{3,4} As a clinical entity it can be a cause great deal of physical, psychological and social stress for these women, and economic loss due to loss of workdays, affecting quality of their lives.⁵ Due to inconsistencies in nomenclature and classification of menstrual

abnormality, the clinical approach to this very vital problem has been fragmented till recent times. In 2011 The international federation of obstetricians and gynaecology (FIGO) has introduced a new nomenclature of AUB for menstrual abnormalities and a new classification system to cover all menstrual complaints under the acronym, PALM-COEIN, which this has been widely acknowledged and used.⁶ In accordance to this classification AUB can be classified as (AUB-P) polyp, (AUB-A) adenomyosis, (AUB-L) leiomyoma, (AUB-M) malignancy and hyperplasia, (AUB-C) coagulopathy, (AUB-O) ovulatory dysfunction, (AUB-E) endometrial, and (AUB-I) iatrogenic and (AUB-N) not otherwise classified.² The “PALM” classification refers to structural abnormalities in genital tract, which can be diagnosed visually or by imaging or histo-pathology), whereas the “COEIN” classification denotes non-structural abnormalities.^{5,7} This classification has proven to be very useful and practical in diagnosing and managing cases of AUB.

About 25-30 % women experience some amount of abnormal bleeding before menopause. About 80% of these women have anovulatory bleeding.^{8,9} Perimenopausal AUBs usually reflect an organic pathology in the genital tract, like fibroid, polyp, adenomyosis or endometrial hyperplasia due to hormonal causes.¹⁰ Evaluation of these women requires careful investigation into the cause and nature of bleeding with a main focus to exclude organic pathology, especially genital malignancies. Endometrial biopsy is one such intervention which is of immense value in knowing the aetiology of bleeding abnormality and planning further management. In perimenopausal females since many women might be anovulatory it becomes imperative to rule out endometrial hyperplasia or malignancy. Endometrial histopathological patterns in perimenopausal women range from secretory endometrium to hyperplastic and cystic glandular hyperplasia. With each successive anovulatory cycle the endometrium proliferates under the effect of oestrogen, unopposed by progesterone action and increases in degree and severity, leading eventually to hyperplasia, hyperplasia with atypia and eventually uterine malignancy. Dilatation and curettage are a simple cost-effective investigation of detecting uterine pathology.¹¹

Objectives

Objective of the present study was to analyse endometrial histology to understand patterns and frequency of uterine pathology in perimenopausal women with AUB.

METHODS

This was a retrospective study into analysis of women with AUB who presented in the gynaecology OPD of SGRRIM and HS and Shri. Mahant Indires hospital Dehradun, during the study period of one year from May 2019 to April 2020 and had endometrial biopsy as part of

evaluation. Women between 35-55 years of age group with AUB were included in the study after excluding pregnancy related vaginal bleeding. Detailed clinical history with examination findings and the relevant routine and special investigation of these women were noted. History of co-morbidities were enquired and investigated. Ultrasonographic findings of pelvic organs and histo-pathology of endometrial biopsies of the cases, obtained by dilatation and curettage was noted. After evaluation the AUB was classified according to PALM-COEIN classification. Data so obtained were tabulated and analysed.

RESULTS

A total of 97 women in the age group 40-50 with AUB who had undergone dilatation and curettage for endometrial biopsy were included in the study. Majority of women were in the age group 40 and above (77.2%) and 89.5% were of parity two and above. Clinically - 43.2% presented with heavy menstrual bleeding, 22.5% with frequent menses, 9% had frequent and heavy periods and 9% women had dysmenorrhea as an associated complaint.

Table 1: Age group distribution.

Age group (years)	N	%
36-40	22	22.6
41-45	31	31.9
46-50	24	24.7
50+	20	20.6

Table 2: Parity distribution.

Parity	N	%
0	5	5.1
1	5	5.1
2	36	37.1
3	29	29.8
4	20	20.6
5+	2	2.0

Table 3: Clinical features.

Clinical features	N	%
Frequent menses	22	22.6
Hmb	42	43.2
Infrequent menses	5	5.1
Frequent menses with hmb	9	9.2
Intermenstrual spotting	10	10.3
Dysmenorrhea	9	9.2

Clinical examination and ultrasonography and endometrial biopsies were done for all women as a part of evaluation and to classify the pathology according to PALM COEIN method of classification. 38% fibroids AUB (L), 17% polyps, AUB (P), 11% had adenomyosis

AUB (A), 3% had was diagnosed as malignancy after endometrial biopsy.

Table 4: BMI.

BMI	N	%
<18.5	0	0
18.5-24.9	24	24.7
25-29.9	58	59.7
>30.0	15	15.4

Table 5: AUB According to PALM-COEIN.

PALM-COEIN	N	%
Polyp	17	17.5
Adenomyosis	11	11.3
Leiomyoma	38	39.1
Malignancy	3	3.0
Coagulopathy	-	-
Ovulatory dysfunction	12	12.3
Endometrium	12	12.3
Iatrogenic	-	-
Not yet classified	4	4.1

Table 6: Endometrial histopathology.

Histopathology	N	%
Secretory endometrium	27	27.8
Proliferative endometrium	11	11.3
Irregular ripening	17	17.5
Irregular shedding	10	10.3
Endometritis	4	4.1
Endometrial hyperplasia without atypia	7	7.2
Malignancy	3	3.0
Atrophic endometrium	2	2.0
Luteal phase defect	4	4.1
Hormonal changes	12	12.3

There were 12.3% cases of ovulatory dysfunction as evident by proliferative endometrium AUB (O), 12.3% had endometrial hyperplasia AUB (E), and 4.1% were not classified AUB (N). There was no case of coagulopathy AUB (C) or iatrogenic AUB (I) disorder in our study. Endometrial histopathology revealed a variety of patterns, most common was secretory endometrium 27.8%, followed by irregular ripening (17.2%), proliferative endometrium (11.3%), Irregular shedding endometrium (10.3%). 12 % endometrial biopsies showed hormonal changes, 2 % of women had atrophic endometrium and 3.1 % women had endometritis. There were 7% cases of endometrial hyperplasia without atypia and 3% biopsies had features of endometrial malignancy.

DISCUSSION

AUB is a special category of gynaecological disorder that needs careful evaluation to know the cause of bleeding

and formulate prospective management. Many of these bleeding patterns are transient and are result of hormonal imbalance peculiar to this age group, and may not require active treatment. More emphasis in these cases is to rule out sinister endometrial hyperplasia and malignancies by endometrial biopsies. Peri-menopausal AUB was found to be at a very high prevalence of 54% in study by Gopalan and co-workers.¹² Many menstrual patterns are observed in these women ranging from scanty bleeding to heavy menstrual bleeding, frequent menses and bleeding with severe dysmenorrhea. Commonest complaint in these women is heavy menstrual bleeding, which is most bothersome and leads to anaemia, fatigue and physical debility. We found 43.2% cases of HMB in our study, there were 22.1% women with frequent menses and 9% with severe dysmenorrhea with HMB. In a study by Zeeba S. in analysing 628 women with AUB they found 41% women presented with menorrhagia, followed by 18 % metro-menorrhagia.¹¹ In another study by Shree Laxmi et al 83% of women had heavy menstrual bleeding and 26 % had frequent periods.¹² While evaluating endometrial histology in perimenopausal women with AUB Archana B et al. found that 53.3% women presented with menorrhagia, 28.2% with polymenorrhagia, 12.2% had intermenstrual bleeding and 6.5% had metrorrhagia. In their study dysmenorrhea was common associated symptom in women in 40-45 age group.¹³ In our observation there were 42% women with heavy menstrual bleeding in this age group, 34% of these women were moderately, and 11% were severely anaemic.

Many women with AUB have other comorbidities in the perimenopausal age group which contributes to additional risk factor for endometrial pathology. It has been suggested that about 50% of women with AUB and hyperplastic endometrium have somatic co-morbid conditions, most common being, obesity, metabolic syndrome, gastrointestinal and cardiovascular diseases.¹⁴ In our study we found 57.2 overweight and 15.4% obese according their BMI. Obesity, 9.4% Diabetes, 11% hypertension, 17.1 thyroid disease. In a study by Siriwan et al. they found 65 % women with a mean age of 52 years, diagnosed with endometrial cancer had co-existing medical condition, of which metabolic syndrome was the commonest followed by, thyroid disorder.¹⁵

Pelvic ultrasonography and endometrial biopsy are of immense value in women with AUB under evaluation. In our study we were able to diagnose 62.7% women with genital tract pathology on, 39.1% had fibroid (AUB-L), 11.3% with adenomyosis (AUB-A) and 12.3 women had hyperplastic endometrium (AUB-E) on USG scans. Dilatation and curettage with endometrial sampling are an easy and cost-effective way of assessing endometrial pathology with minimal complications and has become an essential tool in AUB evaluation especially in the perimenopausal women.^{14,16,17} ACOG recommends endometrial biopsy in any woman above 35 years of age with anovulatory bleeding not responding to medical

treatment.¹⁸ In perimenopausal AUB endometrial biopsy is 82.3% sensitive in diagnosing endometrial hyperplasia and 91% sensitive in detecting endometrial cancer with 98 % specificity.^{19,20}

Perimenopause is period of great hormonal change for women associated with declining ovarian reserve. Few years before menopause, and cessation of ovarian function, the endometrium and menstrual cycles undergoes many changes ranging from secretory endometrium, luteal phase defects as seen by irregular ripening and irregular shedding endometrium, anovulation- as seen by proliferative endometrium and endometrial hyperplasia. In our study endometrial biopsies were done as a part of routine assessment and yielded varied results the commonest endometrial patterns in our study were, secretory endometrium 27.8%, proliferative endometrium 11.3%, 17% irregular ripening and 11% irregular shedding. Endometrial hyperplasia was found in 7.3% and hormonal effect in 12.1%. There were three cases of endometrial malignancy. These changes in endometrium follow a progression of hormonal changes characteristic to perimenopausal age group. Other endometrial patterns in our study were endometritis in 4.1% and atrophic endometrium in 2%.

In many other studies, predominant endometrial patterns found in perimenopausal women were proliferative endometrium secretory endometrium and endometrial hyperplasia.^{14,20,21} Baral and colleagues while studying endometrial samples categorised irregular shedding and irregular shedding, decidualization and pill effect as abnormal physiological changes. In this study the 40-45 years old women, they found 45% endometrial samples with normal physiologic and premalignant conditions.²² Another similar study of clinical spectrum and histopathological patterns of peri-menopausal AUB found that prevalence of proliferative endometrium was 31.33%, secretory endometrium was 21.67%, atrophic endometrium in 6%. There was endometritis in 8.67% and adenocarcinoma in 1.6%.²³

As a most common troublesome gynaecological disorder, this can be debilitating for some women, abnormal uterine bleeding demands systematic evaluation. Although the diagnostic procedures and treatment modalities have been evolving over time, basic dilatation and curettage to sample endometrium for histopathology remains most important intervention. Understanding endometrial pathology helps in deciding treatment options. Many physiological and benign changes can be left alone till attainment of natural menopause. Some women may be selected for appropriate medical therapy and only a few with sinister endometrial pattern or malignancy require hysterectomy.

CONCLUSION

Histopathological evaluation of endometrium is the cornerstone of management of women with abnormal

uterine bleeding. Endometrial histopathology patterns obtained can help in formulating further management and to rule out malignancy.

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