



Original Article

Histopathologic study of endometrium in cases of abnormal uterine bleeding

J Bindhuja¹

¹Department of Pathology, Sreemookambikai Institute of Medical Sciences, India

Keywords:

Abnormal uterine bleeding; Dilation and curettage; Endometrial sampling; Histopathology

ABSTRACT

Background: Abnormal uterine bleeding is one of the most common presenting symptoms among women visiting the gynecology outpatient department. Sonography and endometrial biopsy are the usual methods of evaluation; rarely, invasive procedures like hysteroscopy may be needed. Endometrial sampling can be used as a first step in the evaluation. This study was done to analyze the histopathology of the endometrium and to evaluate the causes of abnormal uterine bleeding.

Materials and Methods: Endometrial samples were obtained using dilation and curettage from 50 women presenting to the gynaecology outpatient department with abnormal uterine bleeding symptoms in a medical college hospital.

Results: Among the 50 cases, 21 were found to have endometrial hyperplasia (72.4%); 24 were diagnosed to have an organic lesion (48%). The endometrium was found to be in the proliferative phase in the majority of the cases (40%). The most common age group was 31-40 years and simple cystic hyperplasia was the commonest endometrial pattern. Single-parity women were most commonly affected and they showed a secretory endometrium under microscopy.

Conclusions: Endometrial sampling should be carried out in every patient with abnormal uterine bleeding to study the histopathology of the endometrium and to evaluate the causes of the disease.

Correspondence:

J Bindhuja, MD

Associate professor, Department of Pathology,

Sree Mookambikai Institute of Medical Sciences, Tamilnadu, India

ORCID ID: 0000-0002-2322-5291

Email: bindhuja85@yahoo.com

Received : 18th November, 2021 ; Accepted : 15th March, 2023

Citation: J Bindhuja. Histopathologic study of endometrium in cases of abnormal uterine bleeding. J Pathol Nep 2023; 13(1):1983-6. DOI: 10.3126/jpn.v13i1.40891

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DOI : 10.3126/jpn.v13i1.40891



INTRODUCTION

Abnormal Uterine Bleeding (AUB) is defined as “any bleeding that does not correspond with the frequency, duration, or amount of blood flow of a normal menstrual cycle.”¹ AUB is one of the commonest presenting symptoms among women visiting the gynecology outpatient department (OPD) responsible for around one-third of all visits.² Most women with endometrial diseases present with the symptoms of AUB.^{3,4} The commonly seen symptoms are menorrhagia, polymenorrhagia, metrorrhagia, and intermenstrual bleeding. Evaluation of AUB in premenopausal women is based on

the symptoms and clinical presentation.^{5,6} When an organic cause of AUB cannot be found, then by exclusion, a diagnosis of dysfunctional uterine bleeding (DUB) is assumed.

The first investigation done is a routine ultrasonogram (USG); saline infusion sonography and three-dimensional USG are rapidly gaining popularity. USG, though clearly depicting the uterine contour and the status of the ovary, fails to provide adequate information regarding the endometrium (except in atrophy and hyperplasia).⁷ The gold standard for diagnosis is hysteroscopy and directed biopsy. Dilation and Curettage (D & C) have been the method of endometrial sampling for a long time.

Newer techniques like endometrial aspiration, a quick OPD procedure, which requires no anesthesia are coming up. However, they are underutilized because of the following reasons: the cost of the various sampling devices, the expertise of the gynecologist in using them, and doubt about the adequacy of the representative sample.⁸ D & C is the mainstay of endometrial sampling.² The added advantage of D & C is that it also allows for a fractional curettage with a separate sampling of both endometrial and endocervical tissue.

The endometrium is a dynamic, hormone-sensitive, and -responsive tissue which undergoes constant and rhythmic changes in the active reproductive life.⁹ The study of the normal morphological appearance of the endometrium provides an essential base for the evaluation of endometrial pathology.¹⁰ The underlying abnormality or disease can be detected by histological variations of the endometrium, considering various factors like age, phase of the menstrual cycle, and use of any exogenous hormones.

Endometrial sampling is used to evaluate AUB as it has many advantages over other diagnostic methods as mentioned above. This study was carried out to analyze the histopathology of the endometrium and to evaluate the causes of abnormal uterine bleeding.

MATERIALS AND METHODS

The present study was carried out over a period of two years from 2016 to 2018 at a medical college hospital. A total of fifty women attending the gynecology OPD with complaints of AUB were chosen for the study. Relevant clinical data were obtained from hospital records and laboratory reports. After taking consent, endometrial samples were obtained using D & C. The obtained samples were first fixed in 10% formalin for 12-24 hours and then the entire tissue was taken for processing. 4 µm thickness sections were taken from paraffin blocks and then stained with Hematoxylin and Eosin stains. These slides were studied under microscopy.

All cases with a clinical diagnosis of endometrial causes of AUB were included in the study. Women with cervical fibroids, vaginal pathology, and hemostatic pathology were

excluded from the study. Institutional ethical committee clearance and informed consent were obtained (SMIMS/IHEC/2013/C/10)

RESULTS

Among the 50 cases evaluated in this study, the majority were nonvegetarian (64%) and hailed from upper-lower socioeconomic states (32%). The majority of women had endometrial hyperplasia (72.4%); 21 of 50 cases. Atrophic endometrium, polyp, endometritis, and endometrial carcinoma were observed in the rest of the cases. An organic lesion was diagnosed as the cause in 24 cases (48%) and the rest were assumed to be DUB. Under microscopy, the endometrium was found to be in the proliferative phase in the majority of the cases (40%); the rest showed secretory phase and irregular phase endometrium. (Table 1 and 2)

Table 1: Baseline characteristics of the study population (n=50)

	Parameters	Frequency (%)
Diet	Vegetarian	18 (36)
	Non vegetarian	32 (64)
Socioeconomic status	Upper	3 (6)
	Upper middle	8 (16)
	Lower middle	12 (24)
	Upper lower	16 (32)
	Lower	11 (22)

The most common age group was 31-40 years (44%) and simple cystic hyperplasia was the commonest endometrial pattern (28%). (Table 2) Single parity women were most commonly affected (44%) and they showed a secretory endometrium under microscopy. (Table 3)

Table 2: Endometrial pattern in HPE in patients with AUB age distributed in years (n=50)

Endometrial pattern	21-30 yrs n(%)	31-40 yrs n(%)	41-50 yrs n(%)	51-60 yrs n(%)	>60 yrs n(%)	Total
Proliferative phase	1 (2)	6 (12)	3 (6)	1 (2)	1 (2)	12 (24)
Secretory phase	-	7 (14)	3(6)	1 (2)	-	11(22)
Simple cystic hyperplasia	-	6 (12)	8 (6)	-	-	14(28)
Adenomatous hyperplasia	-	1 (2)	2(4)	-	-	3(6)
Complex endometrial hyperplasia	-	2(4)	1 (2)	-	1 (2)	4(8)
Polyp	-	-	-	1 (2)	-	1(2)
Atrophy	-	-	-	-	-	1(2)
Endometrial carcinoma	-	-	-	-	2(4)	2(4)
Inadequate	-	-	-	2(4)	-	2(4)
TOTAL	1(2)	22(44)	18(36)	5(10)	4(8)	50

Table 3: AUB based on parity (n=50)

Phases frequency	Nulliparous n(%)	Single parity n (%)	Multiparous n (%)	Total
Proliferative	3 (6)	7 (14)	4(8)	14 (28)
Secretory	2 (4)	7 (14)	6 (12)	15 (30)
Simple hyperplasia	4(8)	5 (10)	4 (8)	13 (26)
Complex hyperplasia	3 (6)	2 (4)	1 (2)	6 (12)
Endometrial carcinoma	1 (2)	1 (2)	-	2 (4)
Total	13 (26)	22 (44)	15 (30)	50 (100)

The most common symptom was menorrhagia (40%) and the other symptoms encountered were metrorrhagia, menometrorrhagia, polymenorrhagia, polymenorrhea, and

post-menopausal bleeding; women in the age group of 41-50 presented with the greatest number of symptoms. (Table 4)

Table 4: Clinical presentation of AUB (n=50)

Pattern of bleeding	21-30 n (%)	31-40 n (%)	41-50 n (%)	51-60 n (%)	>60 n (%)	Total
Menorrhagia	2 (4)	5 (10)	3 (6)	1 (2)	1 (2)	20 (40)
Metrorrhagia	2 (4)	4 (8)	2 (4)	2 (4)	-	10(20)
Menometrorrhagia	-	-	2 (4)	2 (4)	-	4(8)
polymenorrhagia	-	2 (4)	1(2)	-	-	3(6)
Polymenorrhoea	-	2(4)	2 (4)	2 (4)	-	6(12)
Post-menopausal bleeding	-	-	2 (4)	2 (4)	3 (6)	7(14)
TOTAL	4(8)	13(26)	17(34)	12(24)	4(8)	50 (100)

DISCUSSION

AUB accounts for almost 25% of gynecological operations and 20% of outpatient visits.² Histopathologic study of endometrial samples is vital in identifying the different conditions causing AUB, and arriving at a diagnosis, since the endometrium may show signs of a serious underlying condition, in which case aggressive treatment may be necessary, including a major surgical procedure.¹¹

In the present study, we evaluated endometrial samples of 50 women with complaints of AUB. The commonest age group involved was 31-40 years. This is in line with the studies of Jairajpuri et al.⁹ and Bhoomika et al.¹², who observed that most of the abnormal uterine bleeding occurred at the ages of 30 and 49 years (79.7% and 80.66% respectively).

The proliferative phase was endometrium was commonly observed in the present study. This is similar to the studies of Jairajpuri et al.⁹, Khare et al.², and Abdullah et al.¹³, who have reported the same- 24.92%, 26.8%, and 21.7%, respectively.

Simple cystic hyperplasia was the commonest endometrial pattern in the present study; Pilli et al.¹⁴ and Vakiani et al.¹⁵ report Simple hyperplasia without atypia of endometrium to be the most common type. Menorrhagia was the commonest presenting symptom in the present study; Archana et al.¹⁶, in their study, encountered menorrhagia in 43.85% of cases.

The majority of women had endometrial hyperplasia in the present study. This is corroborated by the findings of Shah R et al.¹⁷ and Sajitha K et al.¹⁸, who reported a high number of hyperplasia cases- 42.9% and 25.0%, respectively.

Malignancy is a major differential diagnosis in women of the perimenopausal age group presenting with AUB. In the present study, 2 cases were found to have endometrial carcinoma. Similar findings are reported by Sarwar A and Haque A³.

Endometrial samples of women presenting with AUB show variable histopathologic patterns. These range from simple physiological to much more complex pathological lesions. The D&C method of endometrial sampling is an effective and reliable diagnostic test. Therefore, a histological study of the endometrium, along with a detailed clinical history and thorough physical examination, needs to be promptly done for every case of abnormal uterine bleeding.

CONCLUSIONS

AUB occurring as heavy cyclical or acyclical flow requires prompt intervention, otherwise, it may lead to dangerous complications. Histopathologic evaluation of the endometrium samples is vital for choosing appropriate therapy. Therefore, histopathologic examination should be carried out to arrive at a conclusive diagnosis, to understand the nature of the underlying condition, to provide early treatment, and to avoid complications.

Conflict of Interest: None

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