

Histopathology of Endometrium in Abnormal Uterine Bleeding and Ultrasonography Findings

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Abstract

Background: Abnormal uterine bleeding was defined as 'uterine bleeding that is abnormal in volume, regularity and/or timing that has been present for the majority of the last 3 months. Abnormal uterine bleeding has significant morbidity and interferes with personal life, family life, social life, and sexual life. Abnormal uterine bleeding could be due to a wide range of conditions like fibroids, endometrial hyperplasia, ectopic pregnancy, polyps, adenomyosis, and infection of the uterus or cervix.

Material & Methods: The present prospective study was conducted at department of radiodiagnosis and pathology and department of obstetrics and gynecology of our tertiary care hospital. The study duration was of one year from January 2019 to December 2019. 100 Patients patients presented with abnormal uterine bleeding such as heavy menstrual bleeding, intermenstrual bleeding, or breakthrough bleeding for more than 3 months. Clearance from Institutional Ethics Committee was taken before the start of the study.

Results: In the present study, based on histopathological findings of the endometrium, it was found that normal cyclical endometrium was found to be the commonest pattern among study participants on the histopathological examination. Out of the total cases, proliferative endometrium was seen in 48% cases which is followed by secretory endometrium in 33% cases. This was followed by disordered proliferative endometrium in 10% of cases which is followed by simple endometrial hyperplasia without atypia in 8% cases and atrophic endometrium was found in 1 case. Histopathological examination was found to be very helpful in differentiating the different types of endometrial patterns among cases of abnormal uterine bleeding.

Conclusion: Histopathological examination of endometrial biopsy is a specific diagnostic tool for the evaluation of abnormal uterine bleeding. It helps the physician to plan a successful treatment of abnormal uterine bleeding. However, transvaginal sonography can detect endometrial intracavitary abnormalities but its accuracy can enhance in correlation with tissue diagnosis.

Keywords: Endometrium, Uterine bleeding, Transvaginal ultrasound.

Introduction

Abnormal uterine bleeding describes as bleeding that is in excess amount or occurs outside of normal menstruation cycle criteria. Abnormal uterine bleeding is caused by a number of gynecological conditions, systemic disorders, or some medications [1]. Abnormal uterine bleeding was defined as 'uterine bleeding that is abnormal in volume, regularity and/or timing that has been present for the majority of the last 3 months' [2]. Abnormal uterine bleeding has significant morbidity and interferes with personal life, family life, social life, and sexual life. Abnormal uterine bleeding could be due to a wide range of conditions like fibroids, endometrial hyperplasia, ectopic pregnancy, polyps, adenomyosis, and infection of the uterus or cervix [3]. Patients with abnormal uterine bleeding can present with menorrhagia, polymenorrhea, metrorrhagia, menometrorrhagia, or postmenopausal bleeding [4]. However, the most common presenting symptom is menorrhagia. Abnormal uterine bleeding can be evaluated by different methods such as ultrasound method, endometrial biopsy, or hysteroscopy [5]. Endometrial sampling is considered the gold standard for the evaluation of endometrial neoplasias, metaplasias, hyperplasias, and functional endometrial abnormalities [6]. On the other hand, Transvaginal sonography is useful in the evaluation of endometrial thickness and pattern, organic causes like leiomyomas or endometrial malignancies [7]. Hence, the present study was conducted to evaluate the histopathology of endometrium in abnormal uterine bleeding and ultrasonography findings at a tertiary care hospital.

Materials & Methods

The present prospective study was conducted at department of radiodiagnosis and pathology and department of obstetrics and gynecology of our tertiary care hospital. The study duration was of one year from January 2019 to December 2019. A sample size of 100 was calculated at a 95% confidence interval at a 5% acceptable margin of error. Patients in the age group of 18 to 45 years were enrolled in this study. All these patients presented with abnormal uterine bleeding such as heavy menstrual bleeding, intermenstrual bleeding, or breakthrough bleeding for more than 3 months. Clearance from Institutional Ethics Committee was taken before the start of the study. Written and informed consent for the procedure was obtained from all the patients. Strict confidentiality was maintained with patient identity and data and not revealed, at any point in time.

Patients with acute abnormal uterine bleeding or uterine bleeding due to gestational causes like tubal pregnancies, molar pregnancies, abortions, and rupture uterus were excluded from the present study. The data were collected by predesigned performa along with general physical and clinical examination. A systematic approach was used for both histopathology and transvaginal ultrasound. . We recorded all findings from sonographic analysis and histopathological analysis. Data analysis was carried out using SPSS v22. All tests were done at an alpha (level significance) of 5%; means a significant association was present if the p-value was less than 0.05.

Results

In the present study, a total of 100 patients with abnormal uterine bleeding such as heavy menstrual bleeding, intermenstrual bleeding, or breakthrough bleeding for more than 3 months were enrolled in the present study irrespective of history and etiology. In our study the patients were aged from 18 to 45 years, the mean age of the enrolled patients was 39 ± 3.62 years. A majority (60%) of participants were in the age group of 35 to 45 years. The majority of the patients were multipara (88%), followed by primipara (9%), nullipara (2%), and grand multipara (1%). We recorded that the most common presenting symptom was heavy menstrual bleeding (72 patients) which was followed by intermenstrual bleeding (13 patients) followed by heavy menstrual bleeding with dysmenorrhoea (9 patients). Intermenstrual bleeding with dysmenorrhoea was present in 6 patients. (Table 1)

Table 1: Distribution of study participants according to presenting symptoms.

Symptoms	No. of cases
heavy menstrual bleeding	72
intermenstrual bleeding	13
heavy menstrual bleeding with dysmenorrhoea	9
Intermenstrual bleeding with dysmenorrhea	6

In the present study, based on histopathological findings of the endometrium, it was found that normal cyclical endometrium was found to be the commonest pattern among study participants on the histopathological examination. Out of the total cases, proliferative endometrium was seen in 48% cases which is followed by secretory endometrium in 33% cases. This was followed by disordered proliferative endometrium in 10% of cases which is followed by simple endometrial hyperplasia without atypia in 8% cases and atrophic endometrium was found in 1 case. Histopathological examination was found to be very helpful in differentiating the different types of endometrial patterns among cases of abnormal uterine bleeding. (Table 2)

Table 2: Distribution of study participants based upon histopathological findings of the endometrium.

Endometrial pattern	Number of patients
Proliferative endometrium	48
Secretory endometrium	33
Disordered proliferative endometrium	10
Simple endometrial hyperplasia without atypia	8
Atrophic endometrium	1

In the present study, based on transvaginal sonography findings of the endometrium, it was found that enlarged uterus was the most common finding (78%) on transvaginal sonography. A normal-sized uterus was seen in only 22% of cases. The assessment of the whole thickness of the endometrium was in the 4 to 10 mm range in 70% of cases. Among 18% of cases, it was in the range of 10.1 to 12 mm, which was followed by 11% of cases in the 12.1 to 24 mm thickness. Only 1 case was found in the thickness range of <4 mm.

The most common was the Type – II (three-line) endometrial pattern depicting the proliferative endometrium was seen in 37% of cases which was followed by type-IV (hyperechoic) endometrium, depicting the secretory endometrial pattern (35%). Type - III (atypical) endometrial pattern was seen in 16% of the cases and type – V (hyperechoic & thickened) endometrial pattern was seen in 11% of cases. Only 1 case was of type –I (single line/atrophic) group. (Table 3)

Table 3: Distribution of study participants based upon transvaginal sonography findings of the endometrium.

Transvaginal sonography findings		Number of patients
Whole thickness of endometrium (mm)	<4	1
	4 – 10	70
	10.1 – 12	18
	12.1 – 24	11
Endometrial pattern	TYPE - I (single line)	1
	TYPE - II (three line)	37
	TYPE - III (atypical)	16
	TYPE-IV (hyperechoic)	35

	TYPE-V (hyperechoic & thickened)	11
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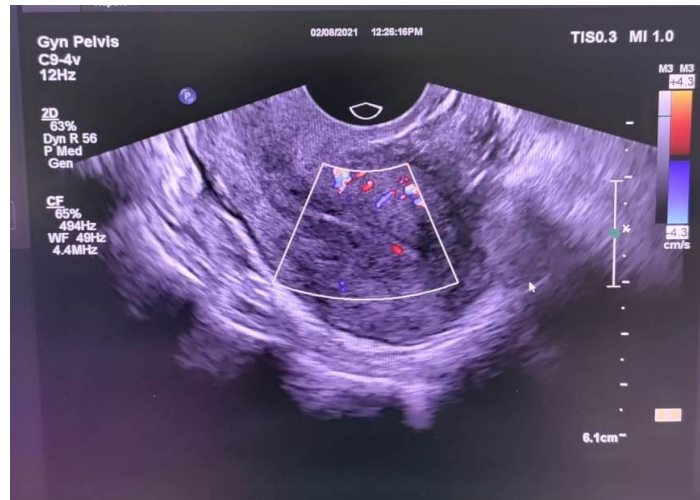


Figure 1: Ultrasonography findings of the endometrium.



Figure 2: Ultrasonography findings of the endometrium.

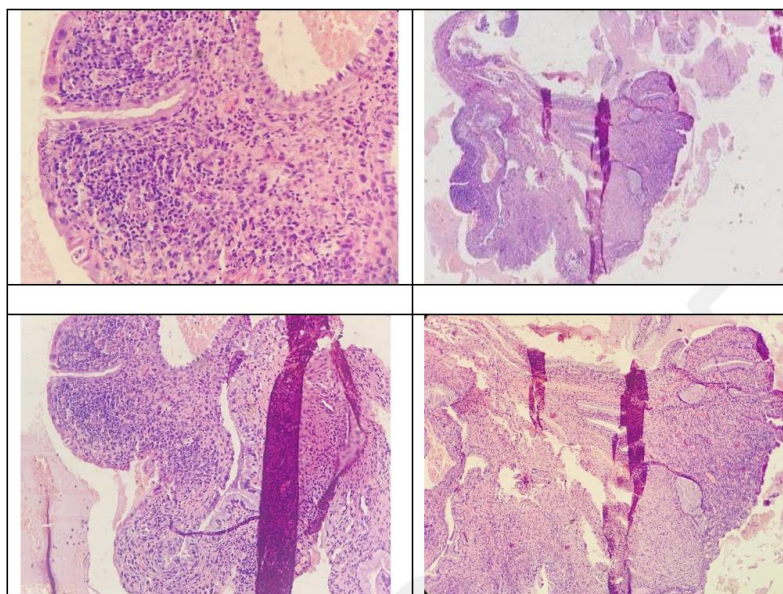


Figure 3: Histopathological findings of the endometrium.

Discussion

In the present study, a total of 100 patients with abnormal uterine bleeding such as heavy menstrual bleeding, intermenstrual bleeding, or breakthrough bleeding for more than 3 months were enrolled in the present study irrespective of history and etiology. In our study the patients were aged from 18 to 45 years, the mean age of the enrolled patients was 39 ± 3.62 years. A majority (60%) of participants were in the age group of 35 to 45 years. The majority of the patients were multipara (88%), followed by primipara (9%), nullipara (2%), and grand multipara (1%). We recorded that the most common presenting symptom was heavy menstrual bleeding (72 patients) which was followed by intermenstrual bleeding (13 patients) followed by heavy menstrual bleeding with dysmenorrhoea (9 patients). Intermenstrual bleeding with dysmenorrhoea was present in 6 patients. Similar results were obtained in a study conducted by Gorla P et al among 270 patients with abnormal uterine bleeding and reported similar findings to the present study among the majority of patients with abnormal uterine bleeding [8].

In the present study, based on histopathological findings of the endometrium, it was found that normal cyclical endometrium was found to be the commonest pattern among study participants on the histopathological examination. Out of the total cases, proliferative endometrium was seen in 48% cases which is followed by secretory endometrium in 33% cases. This was followed by disordered proliferative endometrium in 10% of cases which is followed by simple endometrial hyperplasia without atypia in 8% cases and atrophic endometrium was found in 1 case. Histopathological examination was found to be very helpful in differentiating the different types of endometrial patterns among cases of abnormal uterine bleeding. Similar results were obtained in a study conducted by Bhatiyani BR et al among 100 patients with abnormal uterine bleeding and reported similar findings to the present study among the majority of patients with abnormal uterine bleeding [9].

In the present study, based on transvaginal sonography findings of the endometrium, it was found that enlarged uterus was the most common finding (78%) on transvaginal sonography. A normal-sized uterus was seen in only 22% of cases. The assessment of the whole thickness of the endometrium was in the 4 to 10 mm range in 70% of cases. Among 18% of cases, it was in the range of 10.1 to 12 mm, which was followed by 11% of cases in the 12.1 to 24 mm thickness. Only 1 case was found in the thickness range of <4 mm. Similar results were obtained in a study conducted by Vempalli M et al among 114 patients with abnormal uterine bleeding and reported similar findings to the present study among the majority of patients with abnormal uterine bleeding [10].

In the present study, based on transvaginal sonography findings of the endometrium, it was found that the most common was Type – II (three-line) endometrial pattern depicting the proliferative endometrium was seen in 37% of cases which was followed by type-IV (hyperechoic) endometrium, depicting the secretory endometrial pattern (35%). Type - III (atypical) endometrial pattern was seen in 16% of the cases and type – V (hyperechoic & thickened) endometrial pattern was seen in 11% of cases. Only 1 case was of type –I (single line/atrophic) group. Similar results were obtained in a study conducted by Sima M et al among 114 patients with abnormal uterine bleeding and reported similar findings to the present study among the majority of patients with abnormal uterine bleeding [11]

Conclusion

We concluded from the present study that histopathological examination of endometrial biopsy is a specific diagnostic tool for the evaluation of abnormal uterine bleeding. It helps the physician to plan a successful treatment of abnormal uterine bleeding. However, transvaginal sonography can detect endometrial intracavitary abnormalities but its accuracy can enhance in correlation with tissue diagnosis.

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