

Evaluation of endometrial histopathological patterns in abnormal uterine bleeding: A study of 1545 cases

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ABSTRACT


Background: Abnormal uterine bleeding (AUB) is quite common gynecological complaint associated with considerable morbidity and significantly affects the patient's family, personal, and social life. The aim of the study was to analyze the histomorphological patterns of endometrium in patients presenting with AUB and their frequencies. **Objectives:** Our study aimed at determining the types and frequencies of endometrial pathologies in patients presenting with AUB at our hospital which caters largely to women of low socioeconomic status. **Materials and Methods:** This is a retrospective study conducted in the Department of Pathology, in a Tertiary Care Teaching Hospital, Indore from January 2012 to December 2016. All cases of AUB with a probable endometrial cause were included in the study. Data were entered in Microsoft Excel and analysis was done in the form of percentage, proportion, and represented as tables where necessary. **Results:** A total of 1545 cases were analyzed. Patients' age ranged from 23 to 78 years. AUB was most the prevalent in the perimenopausal age group. The most common presenting complaint was menorrhagia (45.5%). Endometrial hyperplasia was the most common histopathological finding and was seen in 25.3% patients with simple hyperplasia without atypia being the predominant pattern (22.6%), followed by secretory endometrium in 24.1% patients, irregular ripening of endometrium in 19.5% patients, and proliferative phase pattern in 7.6% patients. Malignancy was detected in 2.0% of cases, and endometrial carcinoma with 1.8% was the most common lesion. **Conclusion:** Histopathological evaluation of endometrial samples is, especially, indicated in women with AUB to rule out malignancy and preneoplasia. Among the patients with no organic pathology, normal physiological patterns with proliferative, secretory, and menstrual changes were observed. The most common endometrial pathology was endometrial hyperplasia. The rise in cases of irregular ripening of endometrium is associated with abnormal hormonal effects.

KEY WORDS: Abnormal Uterine Bleeding; Dilatation and Curettage; Endometrium; Histological Pattern

INTRODUCTION

Endometrial diseases are prevalent across all age groups and to a great extent are a leading cause of increased maternal morbidity and mortality. The majority of females with

endometrial diseases present with abnormal uterine bleeding (AUB).^[1,2] Thus, AUB calls for the need of urgent diagnosis. AUB - a term used to describe any bleeding that does not fall within the normal ranges for amount, frequency, duration, or cyclicity. The most common presentations are menorrhagia, polymenorrhea, metrorrhagia, and intermenstrual bleeding. Dilatation and curettage^[3] (D and C) is the mainstay of endometrial sampling for a long time. D and C also let for a fractional curettage with separate sampling of both endometrial and endocervical tissue. The underlying disease can be detected by histological variations of endometrium taking into account the age of the woman, the phase of her menstrual cycle, and use of any exogenous hormones.

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Pregnancy-related and dysfunctional uterine bleeding are the more common in younger patients, whereas atrophy and organic lesions become more frequent in older individuals. Hyperplasia is found in up to 16% and endometrial carcinoma in fewer than 10% of postmenopausal patients undergoing biopsy.^[4,5] Patients with a history of anovulation, obesity, hypertension, diabetes, and exogenous estrogen use are at an increased risk for hyperplasia and adenocarcinoma. The earlier studies indicate the frequencies of AUB too, but we did a more detailed study of 1545 cases encountered over a period of 5 years. Our study aimed at determining the types and frequencies of endometrial pathologies in patients presenting with AUB at our hospital which caters largely to women of low socioeconomic status. Timely evaluation in the perimenopausal and postmenopausal women is mainstay to confirm the exact nature of the lesion and to rule out malignancy.

MATERIALS AND METHODS

Study Setting and Design

All patients who presented in M.Y. Hospital, Indore with a history of AUB between January 2012 and December 2016 and who underwent D and C or hysterectomy were included in the study. Patients with a gestational cause, hemostatic disorders, and isolated cervical or vaginal pathology were excluded in the study. Relevant clinical data regarding age, pattern, and duration of abnormal bleeding, menstrual history, and obstetric history, use of exogenous hormones, physical, and gynecological examination findings, laboratory investigation results, and sonological and hysteroscopic findings were obtained from case records from Medical Records Department. All data were recorded in a carefully structured pro forma.

Specimen Sampling and Laboratory Procedure

All specimens sent for histology were fixed in 10% formalin solution, processed with Histokinette automated tissue processor, paraffin embedded, and sectioned at 3-5 μ using the microtome. Sections were stained with hematoxylin and eosin stain. The results obtained were analyzed with respect to histopathological pattern of the endometrial lesion.

Statistics/Data Management

A total of 1545 cases were analyzed and histological diagnosis was made. Data were entered in Microsoft Excel, and analysis was done in the form of percentage, proportion, and represented as tables where necessary.

RESULTS

During this 5-year period, a total of 1545 endometrial specimens submitted with a clinical diagnosis of AUB were

studied. Patients' age ranged from 21 to 78 years and most of them were seen in the age group of 46-55 years, followed by 36-45 years.

The most common complaint was menorrhagia in 703 patients (45.5%).

The most common pathology observed in the study was endometrial hyperplasia in 392 (25.3%) patients. Secretory endometrium was the next commonly observed pattern seen.

In 372 (24.1%) patients, irregular ripening of endometrium in 301 (19.5%) patients, followed by proliferative endometrium in 117 (7.6%) patients. Endometrial carcinoma was seen in 28 (1.8%) cases (Table 1).

Endometrial hyperplasia and polyps are the most common patterns seen in the age group of 35 years.

Between 36 and 45 years, secretory pattern was the most common followed by proliferative change.

In the 46-55 age groups, endometrial hyperplasia was the most common pattern. Most of the endometrial and other carcinomas were presented after age 55 years.

DISCUSSION

AUB accounts for almost 25% of gynecological operations and 20% of outpatient visits.^[3]

In this study, we have studied the histopathology of endometrium to identify the endometrial causes and also observe the incidence of various pathologies. Perimenopause is defined by the World Health Organization as the 2-8 years preceding menopause and the 1 year after the final menses.^[6] As women approach menopause, cycles shorten and often become intermittently an ovulatory due to a decline in the number of ovarian follicles and fluctuations in the estradiol level leading to various patterns of abnormal bleeding.^[7] Findings encountered are endometrial hyperplasia was encountered in 25.3% patients, secretory endometrium was the next commonly observed pattern seen in 24.1% patients, irregular ripening of endometrium in 19.5% patients, followed by proliferative endometrium in 7.6% patients and endometrial carcinoma was seen in 1.8% cases.

Our study and other studies found menorrhagia as the most common complaint.^[8-11]

Endometrial hyperplasia was the most common histological pattern observed in our study and was seen in 392 (25.3%) cases. A few studies have reported a similar incidence with 24.7% and 26%, respectively.^[9,12] However, most other studies have observed a lower incidence with 12.6%, 15%, and 4.33%.^[11,13,14] In the present study, the maximum incidence

Table 1: Distribution of cases of AUB according to histological pattern

Histological diagnosis	Total number of cases (N=1545) (%)
Proliferative phase	117 (7.6)
Secretory phase	372 (24.1)
Products of conception	62 (4.0)
Simple hyperplasia without atypia	350 (22.6)
Complex hyperplasia without atypia	42 (2.7)
Hyperplasia with atypia	03 (0.2)
Endometrial polyps	127 (8.2)
Atrophic endometrium	52 (3.4)
Hydatidiform mole	75 (4.9)
Irregular ripening of endometrium	301 (19.5)
Endometritis	13 (0.8)
Endometrial carcinoma	28 (1.8)
Choriocarcinoma	03 (0.2)
Total	1545 (100)

of hyperplasia was noted in the age group 46-55 years and was seen in 210 of 392 patients (53.5%). This was consistent with the findings in other studies.^[9,12,13,15,16] Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma. The overall risk of progression of hyperplasia to cancer is 5-10%.

In our study, predominant number of patients in the age group 36-45 years showed normal physiological changes such as proliferative and secretory phase patterns. Secretory endometrium was the second most common pattern observed in this study and was seen in 372 (24.1%) patients. A similar incidence of secretory pattern (22.2%) was noted in another study.^[17] The bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding and is characterized by regular episodes of heavy menstrual blood loss. The main defect is in the control of processes regulating the volume of blood lost during the menstrual breakdown of endometrium.^[18] In the present study, a proliferative pattern of endometrium was observed in 117 (7.6%) patients. Other studies reported incidences of 17.8%, 33%, 32.6%, and 32%.^[12,16,19,20] This pattern was commonly observed in the late reproductive and perimenopausal women in our study and other studies and may be due to the hormonal imbalance in this group leading to intermittent anovulatory cycles. Irregular ripening of endometrium is seen in 309 (20%) patients which is usually associated with abnormal hormonal effects.^[21] Other study reported the incidence of 14%.^[21]

Malignancy is a major differential diagnosis in women of perimenopausal age group presenting with AUB. In this present study, the frequency of endometrial malignancy was low. This constituted 2.0% with endometrial carcinoma as the majority accounting for 1.8%. Similar incidence of endometrial carcinoma was reported by Sarwa and Haque.^[1]

Nevertheless, much higher values of 4.4% for endometrial carcinoma have been documented by Saraswathi *et al.*^[22] On the contrary, a much lower value 0.5% has been documented for endometrial carcinoma by Jyotsana *et al.*^[8] with the majority in the perimenopausal age group. Choriocarcinomas were rare finding encountered in this study.

Study of atrophic endometrium constituted 3.4% with most cases presenting in the postmenopausal age group. This is similar to another report by other researchers.^[22] Conversely, this is in discordance with reports by Mirza *et al.*^[23] where it constituted 7% with most of the cases seen in postmenopausal age group.

CONCLUSION

Histopathological patterns of endometrial biopsy and curettage of women presenting with AUB is variable. These ranges from simple physiological to much more complex pathological lesions. D and C method of endometrial sampling is an effective and reliable diagnostic test. Among the patients with no organic pathology, normal physiological patterns with proliferative, secretory, and menstrual changes were observed. The present study shows that endometrial hyperplasia is the most common histopathological pattern of endometrium for AUB in perimenopausal women in our region. In addition, endometrial hyperplasia and carcinoma together also constitute a significant proportion of cases among the organic causes, thereby highlighting the importance of endometrial curetting and biopsy as a diagnostic procedure in the evaluation of AUB in perimenopausal and postmenopausal age group to exclude preneoplastic and neoplastic conditions. Thus, histopathological evaluation of endometrium is, especially, indicated in women over the age of 35 years presenting with AUB to rule out preneoplastic lesions and malignancies.

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