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Original Article

Morphological Pattern of Endometrial Biopsy in Women with Clinical Diagnosis of Abnormal UterineBleeding

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Abstract

Objectives: This study was carried out to determine the underlying gynecological pathology with help of morphological pattern of the endometrial histology in women of different age groups with clinical diagnosis of abnormal uterine bleeding.

Methods: This is a retrospective study of a series of one hundred and twenty cases of women with presenting complaint of abnormal uterine bleeding. This study was done in the Department of Pathology, Rashid Latif Medical College, in collaboration with Gynecology departments of Arif Memorial Hospital and Hameed Latif Hospital over period of one year. (July 2018 to June 2019).

One hundred and twenty cases of endometrial curettage, with clinical impression of abnormal uterine bleeding were analyzed and reported by two histopathologists. Patients with complications of pregnancy were excluded from present study.

Results: Histopathological examination of endometrial curetting revealed spectrum of morphology from physiological changes to malignancy. Endometrium with normal cyclical changes were seen in 64 (53.33%) cases, followed by endometrial polyp 18 (15%) cases, endometrial hyperplasia 15 (12.5%), and disordered proliferative of endometrium 10 (8.33%) cases. Malignancy was noticed in 3 (2.5%) cases. Malignancy was diagnosed mostly in the postmenopausal age group.

Conclusion: The present study proves that on routine basis endometrial histopathological evaluation is a useful diagnostic measure to determine the underlying cause of abnormal uterine bleeding which ultimately help in accurate treatment.

Key Words: Abnormal uterine bleeding, polyp, hyperplasia, disordered proliferation, malignancy

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Introduction

The term abnormal uterine bleeding is related to any irregularity in the menstrual cycle including volume of blood flow, duration, or frequency. An average menstrual cycle is of 24-38 days and bleeding lasts 7 to 9 days.[1] Endometrial tissue sampling is not requirement of all women with presenting complaint of AUB but should be done on women who at risk of developing hyperplasia and malignancy. An endometrial biopsy is thought to be the preferred test in women with AUB who are above the age of 45 years. Endometrial biopsy sohuld also be done in women of 45 years of age or even younger with unopposed estrogen exposure, obesity, diagnosed cases of polycystic ovarian syndrome (PCOS), and in cases of treatment failure or persistent bleeding.[2] Internationally, the women of reproductive age group show the prevalence of abnormal uterine bleeding from 3% to 30% of cases, with a higher occurrence at time of menarche and perimenopause. Results of many studies are confined to heavy menstrual bleeding (HMB), but when irregular and intermenstrual bleeding are also incorporated, the prevalence even rises up to 35% or even greater.[3] Overall prognosis of abnormal uterine bleeding is good, but it varies with the underlying pathology. The core purpose of endometrial evaluation and treatment of chronic AUB is to exclude malignancy and to improve the patient's quality of life along with personalized current and future fertility goals. Prognosis also varies and it is established on bases of medical versus

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surgical treatment. Medical treatment with anti-fibrinolytic and non-steroidal anti-inflammatory medicine has shown very good results to reduce blood loss during menstruation.[4] In surgical options dilatation and curettage of the endometrial tissue is extremely helpful to determine various forms of AUB and exclusion of any organic pathology.[5]

Methods

This is a retrospective study of all cases of endometrial biopsies with clinical impression of abnormal uterine bleeding received during period of one year from July 2018 to June 2019 at Department of pathology, Rashid Latif Medical College, Lahore. Ages of the patients were from 20 to 70 years. Those patients who were either on hormonal therapy, had bleeding due to complications of pregnancy or having cervical pathology were excluded from present study. Endometrial tissue was sampled by dilatation and curettage (D&C). Fixation was done with 10% formalin and sent to pathology laboratory for assessment. The gross morphology was noted, and the total tissue submitted was further processed in automated processor overnight. Paraffin block were prepared, and tissue section (4-6µ) were prepared. The sections were stained with hematoxylin and eosin stain (H&E) and microscopic examination was carried out by the pathologist.[6] The histopathological results by microscopy were noted and causes of AUB were grouped into functional and organic reasons. Normal menstrual phases (proliferative and secretory) of the endometrium and other physiological variations in the endometrium related to disturbance in hormonal level (atrophic endometrium and disordered proliferative endometrium) were included in functional causes while endometrial polyp, chronic endometritis, hyperplasia, and endometrial carcinoma were part of organic causes. Results were calculated by using SPSS 25.

Results

The age of the patients ranged from 20 to 70 years. Maximum number of patients were in the age group of 41 to 50 years, 45 cases (37%) followed by 31 to 40 years, 38 cases (32 %). Only 14 cases (12%) were above the age of 50 years. Out of 120 cases, 112 (93.33%) were premenopausal whereas 8 (6.66%) were post-menopausal. **(Figure 1)** The predominant pattern of bleeding was menorrhagia 44 cases (36.66%) followed by metrorrhagia 38 cases (31.66%), polymenorrhea 30 cases (25%) and post-menopausal bleeding 8 cases (6.66%). **(Table 1)** Histological examination showed proliferative endometrium **(Figure 2)** as the predominant finding 34 cases (28.33%) followed by secretory endometrium 30 cases (25%), endometrial polyp 18 cases (15%), hyperplasia 15 cases (12.5%), disordered proliferation 10 cases (8.33%), endometritis 6 cases (5%) and atrophic endometrium 4 cases (3.33%). Malignant lesions comprised of 3 (2.5%) of the cases. **(Table 2)**. In women 30 years or under, out of 23 cases, proliferative endometrium (47.82%) was main morphological pattern while in women 31 to 40 years, out of 38 cases secretory endometrium (34.21%) is the foremost pattern on histopathology. Out of 18 cases of endometrial polyp **(Figure 3)**, 13 cases were found in patients of up to 40 years of age and out of 15 cases of endometrial hyperplasia **(Figure 4)**, 9 cases were between age group of 41 to 50 years. All 3 cases of malignancy **(Figure 5)** were seen in patients of 60 years of age or above and all of them presented with post-menopausal bleeding. There was statistically significant age difference of females with malignancy as underlying cause of bleeding from females with Proliferative endometrium (p-value 0.008), Secretory endometrium (p-value 0.009), Polyp (p-value 0.018), Hyperplasia (p-value) and Disordered proliferation (p-value 0.010) whereas age difference of female with malignancy was not statistically significantly different from atrophic endometrium (p-value 0810). This showed that atrophic endometrium and malignancy is the main reason of abnormal uterine bleeding in older women with peri and post-menopausal period of their life.

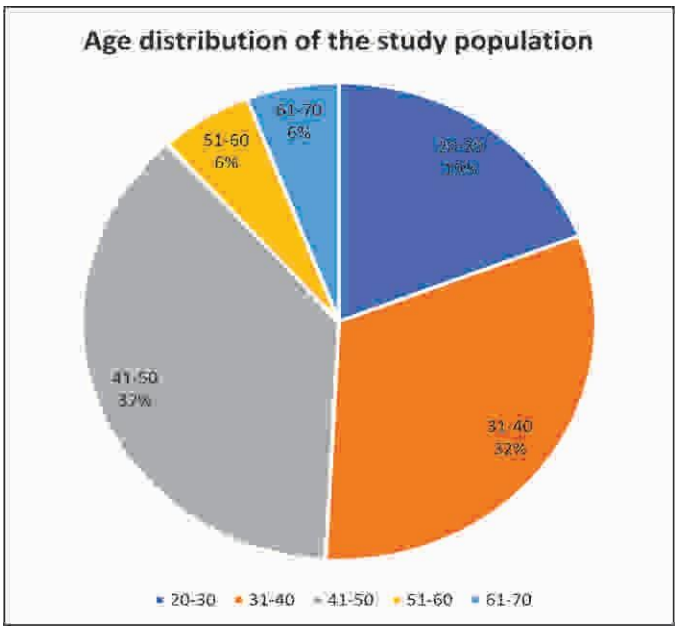

Figure 1: *Distribution of Cases According to Various Age Groups*

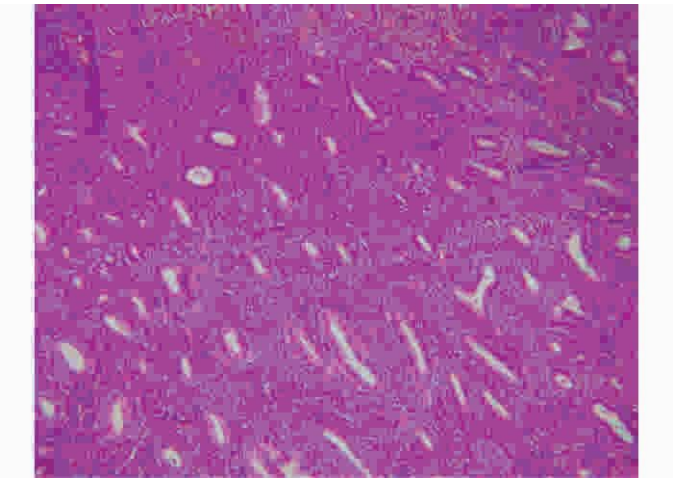

Figure 2: *Showing Proliferative Endometrium (H&E,10X)*

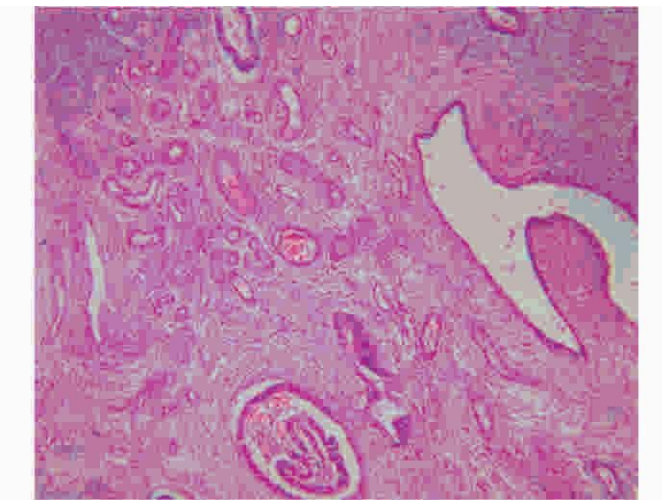

Figure 3: *Showing Endometrial Polyp (H&E,10X)*

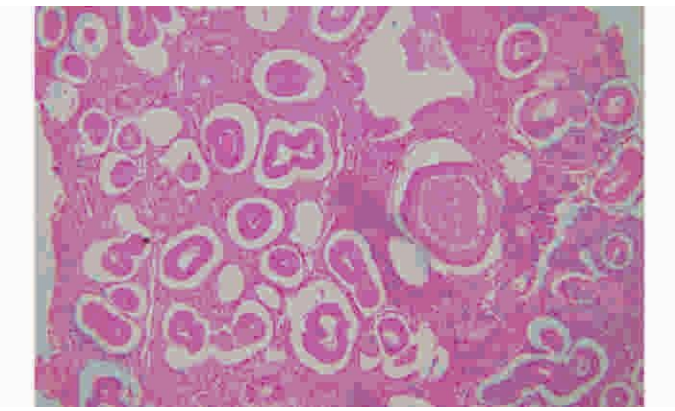

Figure 4: *Showing Endometrial Hyperplasia (H&E, 10X)*

Discussion

Abnormal uterine bleeding is one of the commonly faced problem in gynecology department of our hospitals. It needs to be treated properly as it intervenes significantly with the quality of life in otherwise healthy women because of troubling symptoms like menorrhagia, metrorrhagia and polymenorrhea.[7]

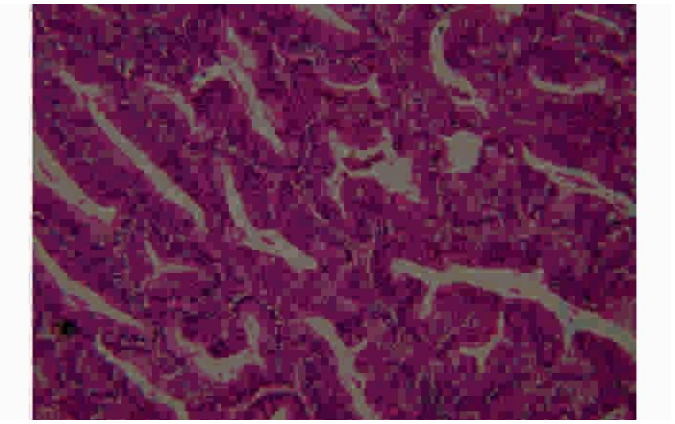

Figure 5: *Showing Endometrial Carcinoma (H&E, 10X)*

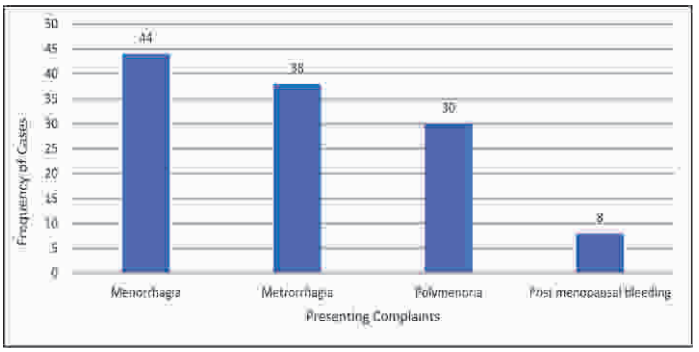

Table 1: *Breakup of Cases According to Presenting Complaint*

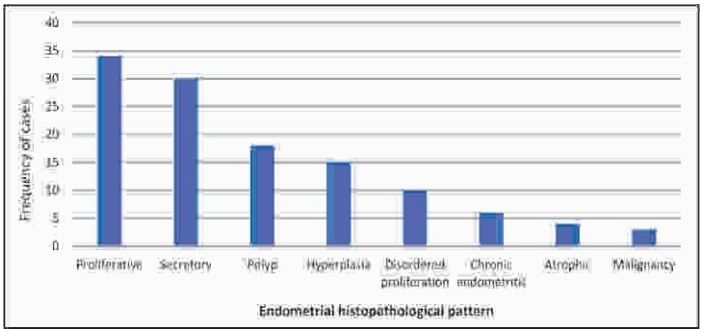

Table 2: *Distribution of Cases According to Endometrial Biopsy Findings*

AUB incorporates both dysfunctional uterine bleeding (DUB) and bleeding from operationally treatable causes like endometrial polyps, hyperplasia, fibroids and malignancy. But in most of the cases dysfunctional uterine bleeding is manifestation of anovulatory- cycle of menstruation.[8]

In present study, the commonly affected age group who presented with abnormal uterine bleeding was 41 to 50 years of age. This observation is comparable with many studies.[7,9-13] An increase in number of cases in this age group reveals that as women reach near their menopause age, the sum of ovarian follicles

decreases and gonadotrophic hormone resistance increases which ultimately leads to low level of estrogen which is basic requirement of normal endometrial cycle.[7] Lowest number of patients belonged to age group of 61 to 70 years.

In current study most common presenting complaint was menorrhagia (36.66%). It is compatible with many other studies done worldwide, 51%,[7] 42%,[9] 28%[10] and 55.8%.[14]

Histopathological diagnosis showed wide range of patterns, ranging from physiological to pathological lesions of endometrium. In this study commonest histological pattern seen was proliferative (28.33%) and secretory (25%) phase of endometrium. Many studies showed the presence of predominantly these two patterns.[7,9,12,15] The cause of bleeding in the proliferative phase of endometrium is due to anovulatory cycles while bleeding in secretory phase is due to defect in the process related to regulation of menstrual breakdown of the endometrium.

Endometrial polyp was reported in 15% of cases. Literature showed quiet variability in its incidence. Few studies revealed 9.9%[16] to 17.64%[17] of cases as underlying cause of abnormal uterine bleeding while others showed only 0.6%,[15] 1.24%[12] and 2.46%[11] of the cases. Endometrial polyp was found more common below age of 40 years of age. This finding can be related to excessive use of hormones in this age for management of infertility.[16]

In present study incidence of endometrial hyperplasia (12.5%) was second common underlying pathology and this finding is comparable with another study done in Pakistan (12.6%)[15] and India (10.91%).[12] The possible reason could be that in our part of world most of the patients belong to poor socioeconomic status and risk factors like diabetes, obesity and sedentary lifestyle is low. Other studies showed higher incidence, 16%,[7] 16.47%,[17] 18.03%,[11] 22.6%,[9] 26.7%.[10]

Results of cases with disordered proliferation of endometrium (8.3%) and chronic endometritis (5%) are like study done by Bhatta S and Sinha AK, 6.56% each. Endometrial atrophy is a consequence of absence of either exogenous or endogenous estrogen which is necessary for endometrial stimulation that leads to abnormal uterine bleeding whenever there is minor injury to thin atrophic endometrium. In present study atrophic endometrium was seen in 3.33% of cases. Many other studies showed almost same percentage.[10,12,14]

Endometrial biopsy is one of the significant requirements to ensure the presence of malignant and premalignant conditions. In present study incidence of endometrial carcinoma was 2.5%. This finding is almost the same as study done by Vaidya et al; (2.45%)[12]. In other studies, their finding were 0.4%,[15] 1.6%,[7] 3.3%,[10] 4.4%,[13] 5.74%,[11] and 5.88%.[17]

The prevalence of endometrial hyperplasia and endometrial cancer were more commonly present in the perimenopausal and post-menopausal females. Therefore, histopathological assessment of endometrium is especially advised in women of 40 to 50 years of age presenting with abnormal uterine bleeding to rule out any possibility of premalignant or malignant condition.[18] The sensitivity of endometrial biopsy for detection of endometrial abnormality is very high.[19]

A good clinic-radiological correlation is required in cases of abnormal uterine bleeding however histopathology remains the cornerstone to reach the actual underlying cause behind clinical diagnosis.[20]

Conclusion

Endometrial evaluation should generously be advised in females of perimenopausal and postmenopausal age groups with presentation of AUB, to exclude possibility of any preneoplastic condition or malignancy as it is more common in women of 40 years or above and it is considered gold standard for ultimately deciding treatment plans.

Conflict of Interest: None

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Authors Contribution

KN: Concept, Writing, Data Analysis

GAN: Data Compliation

YWN: Article Writing