

# Clinico-Pathological Study of Endometrial Biopsies Performed for Abnormal Uterine Bleeding: An Audit in a Tertiary Care Centre in Karachi, Sindh, Pakistan

Endometrial Biopsies Performed for Abnormal Uterine Bleeding

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## ABSTRACT

**Objective:** The current study was conducted to estimate AUB in various age groups, to study histopathology of the endometrium in cases of AUB and to assay the clinicopathological patterns.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the Pathology Department of BMSI, JPMC Karachi Sindh Pakistan from January 2020 to December 2022.

**Materials and Methods:** 81 cases of AUB were included in this study. All cases of Endometrial samples such as endometrial biopsy, dilatation and curettage material (D&C), were thoroughly reviewed and were included in this study, taking into account their age, patient's characteristics, clinical information and the histopathological findings obtained.

**Results:** The age group of patients in this study ranged from 22 to 64 years. The maximum number of cases 50 (61.8%) were in the age group of 20 to 39 years. The endometrial polyp (37%) was found to be the most common histopathological pattern followed by endometritis (18.5%) and secretory phase endometrium (18.5%). It was found that 12.4% of cases were due to proliferative phase epithelium, 4.9% were malignancies, and 7.5% were hyperplastic.

**Conclusion:** In conclusion, abnormal uterine bleeding has different histo-morphological findings among different age groups, and non-structural causes are more common than structural ones. All three age groups are susceptible to Endometrial Polyps, which are the most prevalent. All cases of malignancies were present in postmenopausal women. Therefore, it is imperative to evaluate the endometrial biopsies of postmenopausal women.

**Key Words:** AUB abnormal uterine bleeding, D&C dilatation and curettage.

**Citation of article:** Jalbani A, Rahat N, Shazad H, Bashir P, Siraj F. Clinico-Pathological Study of Endometrial Biopsies Performed for Abnormal Uterine Bleeding: An Audit in a Tertiary Care Centre in Karachi, Sindh, Pakistan. Med Forum 2023;34(7):154-157. doi:10.60110/medforum.340736.

## INTRODUCTION

The endometrium undergoes cyclic changes during the reproductive period under the influence of hormones. The term Abnormal Uterine Bleeding (AUB) is defined as bleeding from the uterus that does not meet the criteria for normal uterine bleeding in terms of frequency, duration, and volume.

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Received: February, 2023

Accepted: April, 2023

Printed: July, 2023

When AUB happens during the reproductive period and is not associated with detectable uterine abnormalities excluding a non-secretory pattern, eliminating atypical hyperplasia and carcinoma, it is termed dysfunctional uterine bleeding. (DUB).<sup>1,2</sup> AUB is one of the most common complaints in gynaecological OPDs caused by endometrial sampling. The social and economic charge of menorrhagia is considerable.<sup>1</sup> The histopathology of endometrial samples is one of the key diagnostic tools in the workup of patients with AUB. The current study was conducted to estimate AUB in various age groups, to study histopathology of the endometrium in cases of AUB and to assay the clinicopathological patterns.

## MATERIALS AND METHODS

The present study was conducted in the Pathology department of BMSI, JPMC Karachi Sindh Pakistan from January 2020 to December 2022. All cases of Endometrial samples such as endometrial biopsy, dilatation and curettage material (D&C), were thoroughly reviewed and were included in this study,

taking into account their age, patient’s characteristics, clinical information and the histopathological findings were obtained. All cases were stratified into age groups 20-39 (reproductive), 40-50 (perimenopausal) and >50 years (postmenopausal). Medical records were used to collect the relevant data, figures, and facts for the investigation. Patients on hormonal therapy, patients with an intrauterine contraceptive device, pregnant females with a history of bleeding, isolated cervical and vaginal pathology, leiomyoma, bleeding due to previously diagnosed gynaecological malignancy, homeostatic disorders and autolyzed specimens were excluded from the study. The functional causes of AUB included in this study were normal cyclic phases of the endometrium and other abnormal physiological changes in the endometrium (atrophic endometrium, proliferative endometrium). Organic lesions which were included as the cause of AUB in this study include chronic endometritis, hyperplasia and endometrial carcinoma. The data collected for the study were statistically analysed and presented in simple percentages.

**RESULTS**

**Table No. 1: The frequency of endometrial biopsies among all biopsies during the period from 2020 to 2022**

Year	Total number of Biopsies received	Total Number of Endometrial Biopsies	%
2020	2255	22	0.97
2021	3671	32	0.87
2022	3608	27	0.74
Total	12904	81	0.62

Table-1 illustrates the prevalence of endometrial biopsies among all biopsies. From 2020 to 2022, there have been 12904 biopsies received. The percentage of endometrial biopsies received was 22 (0.97%) in 2020, 32 (0.87%) in 2021, 27 (0.74%) in 2022, and overall 81 (0.62%) from 2020 to 2022.

**Table No. 2: Age-Wise Distribution of Cases**

Age of the patient	Number of patients	%
20-39	50	61.8
40-49	22	27.1
>50	9	11.1

Table 2 illustrates the age-based distribution of endometrial biopsies. Three groups of patients were categorized according to their age. A total of 50 (61.8%) endometrial biopsies were performed in the age group 20-39, 22 (27.1%) in the age group 40-49, and 9 (11.1%) in the age group >50.

An illustration of the histopathological pattern of endometrial biopsies can be found in Table 3. Endometrial biopsies involved 30 (37%) polyps, 15 (18.5%) endometritis, 15 (18.5%) secretory phase, 10

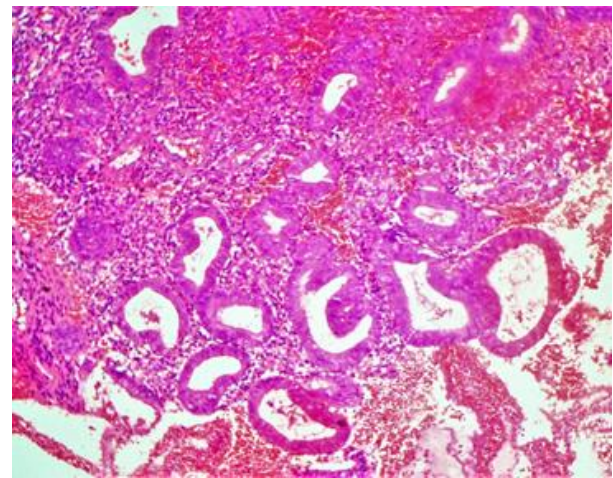
(12.4%) proliferative phase, 6 (7.5%) hyperplasia, 4 (4.9%) malignancy, and 1 (1.2%) benign inactive endometrium.

**Table No. 3: Histopathological Pattern of Endometrium**

Histopathology	Number of patients	%
Endometrial polyp	30	37
Endometritis	15	18.5
Secretory Phase	15	18.5
Proliferative Phase	10	12.4
Malignancy	4	4.9
Hyperplasia	6	7.5
Benign inactive Endometrium	1	1.2
Total	81	100

**Table No. 4: Correlation of Histopathological Findings with Age Group**

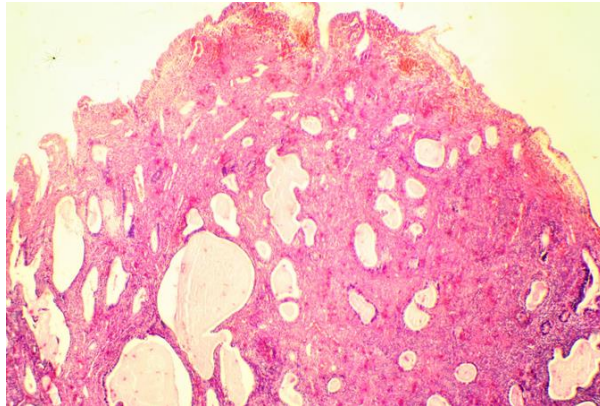
Histopathology	20-39	40-50	>50
Endometrial polyp	20(24.6%)	8(9.8%)	2 (2.4%)
Endometritis	11(13.5%)	3(3.7%)	1(1.2%)
Malignancy	0	0	4(4.9%)
Hyperplasia	1(1.2%)	4(4.9%)	1(1.2%)
Proliferative Phase	8(9.8%)	2(2.4)	0
Secretory Phase	10(12.3%)	5(6.2%)	0
Inactive Endometrium	0	0	1(1.2%)
Total	50(61.8%)	22(27.1%)	9(11.1%)



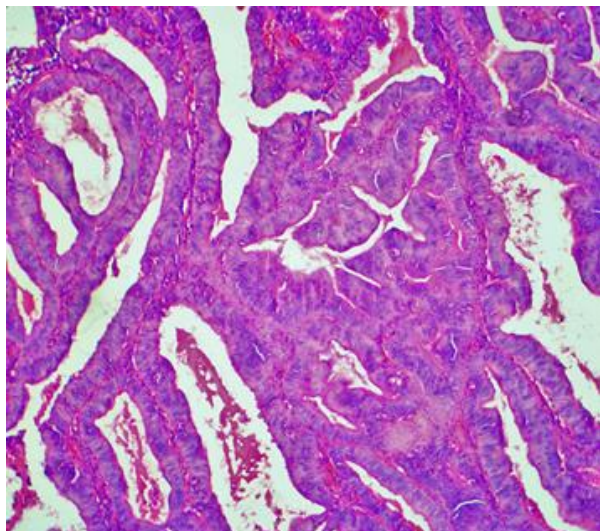
**Figure No. 1: Photomicrograph of Endometrial Hyperplasia. (HE stain, X40)**

Table 4 illustrates the histopathological pattern of endometrial biopsies according to age group, there were 30 cases of endometrial polyps, of which 20 (24.6%) were in the 20-39 age group, 8 (9.8%) were in the 40-50 age group, and 2 (2.4%) were in the >50 age group. Endometritis cases totalled 15; 11 (13.5%) were in the 20-39 age group, 3 (3.7%) were in the 40-50 age group, and 1 (1.2%) were over 50. There were four

malignancies (4.9%), all of which were seen in the >50 age group. There were 6 cases of hyperplasia, with 1 (1.2%) occurring in the 20-39 age group, 4 (4.9%) in the 40-50 age group, and 1 (1.2%) in the over 50 age group. There were 10 cases of proliferative phase endometrium in total, of which 8 (9.8%) were in the 20-39 age group, and 2 (2.4%) were in the 40-50 age group. There were 15 cases of secretory phase endometrium in total, of which 10 (12.3%) were in the 20-39 age group and 5 (6.2%) were in the 40-50 age group. There was 1 (1.2%) case of inactive endometrium among women >50 age group.



**Figure No. 2: Photomicrograph of Endometrial Polyp. (HE stain, X10)**



**Figure No. 3: Photomicrograph of endometrial carcinoma, villoglandular variant. (HE stain, X40).**

## DISCUSSION

The fact that it is a common and relatively simple procedure, endometrial biopsies provide valuable information regarding endometrial pathologies and their underlying causes. Additionally, it provides guidance and assistance in managing patients' follow up. It is helpful to document the likely pathologies encountered in such biopsies at different stages of life (i.e.,

reproductive, perimenopausal and postmenopausal) in the local setting. There was a wide range of ages among our patients, from 22 to 65. 61.8% of patients were between the ages of 20 and 39, followed by 27% between the ages of 40 and 50. This is in agreement with other studies<sup>3</sup> that reported 28-49 years as the most common age group. Similar observations were also made by<sup>1,2</sup> and<sup>4,5</sup>. The increased number of cases in this perimenopause age group may be due to a decrease in the number of Graafian follicles resulting in low levels of estrogen. This cannot maintain the healthy development of the endometrium<sup>1</sup>. 11.1% of patients were seen in >50 age –group.

Among the structural causes of abnormal uterine bleeding observed in the present study, endometrial polyps accounted for the majority (37%). An endometrial polyp is characterized by polypoidal fragments that are covered by epithelium on three sides, glandular abnormalities, fibrous stroma, and thick-walled stromal blood vessels. Due to its irregular glandular architecture and fibrous stroma, the endometrium of the lower uterine segment (LUS) can be mistaken for an Endometrial Polyp. There are no thick-walled stromal blood vessels in the LUS, however.

One study found a slightly lower incidence (32%) of Endometrial Polyps associated with malignancies in the over-65 year's age group, with its frequency increasing with age and reaching a statistically significant level in this age group<sup>3</sup>. The proportion of patients with endometrial hyperplasia was 7.5%. It accounted for 1.2%, 4.9% and 1.2% of the cases in the reproductive, perimenopausal and postmenopausal groups, respectively. In contrast, even higher incidences of 19.47%, 10% and 6% were reported in several studies<sup>6,7,8</sup>. Endometrial hyperplasia is manifested by the increased gland-to-stroma ratio with a corresponding Irregular size and shape of the glands Endometrial Hyperplasia should be identified promptly as it can progress to endometrial carcinoma of the endometrioid type. The percentage of patients with endometritis was 18.5%. This represented 13.5%, 3.7% and 1.2% of cases in the reproductive, perimenopausal and postmenopausal groups, respectively.

In this study, malignancies were identified in 4.9% of cases, all occurring in postmenopausal women. The results of this study are similar to those of Garg et al. (2020), who detected four cases of malignancy in postmenopausal women.<sup>9</sup> Munasinghe et al. (2021) also observed malignancies in 3.39% of cases (28/778) with the majority being found in postmenopausal women (26/28)<sup>10-11</sup>. In the present study, proliferative endometrium and secretory endometrium were found in 12.4% and 18.5% of patients in the reproductive and premenopausal age groups respectively.

## CONCLUSION

In conclusion, abnormal uterine bleeding has different histo-morphological findings among different age groups, and non-structural causes are more common than structural ones. All three age groups are susceptible to Endometrial Polyps, which are the most prevalent. All the cases of malignancies were present in postmenopausal women. Currently, routine screening for endometrial carcinoma is not justified. There is a need to educate postmenopausal women about the importance of seeking medical attention if vaginal bleeding occurs. In all cases of postmenopausal bleeding, an appropriate investigation must be conducted.

### Author's Contribution:

Concept & Design of Study: Asma Jalbani  
 Drafting: Noshaba Rahat, Humera Shazad  
 Data Analysis: Prih Bashir, Farah Siraj  
 Revisiting Critically: Asma Jalbani, Noshaba Rahat  
 Final Approval of version: Asma Jalbani

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

## REFERENCES

1. Bindroo S, Garg M, Kaur T. Histopathological spectrum of endometrium in abnormal uterine bleeding. *Int J Reproduction, Contraception, Obstet Gynecol* 2018;7(9):3633-3638.
2. Bolde SA, Pudale SS, Pandit GA, Matkari PP. Histopathological study of endometrium in cases of abnormal uterine bleeding 2014;2:1378-8.
3. Hileeto D, Fadare O, Martel M, Zheng W. Age dependent association of endometrial polyps with increased risk of cancer involvement. *World J Surg Oncol* 2005;3(1):1-6.
4. Vaidya S, Lakhey M, Vaidya S, Sharma PK, Hirachand S, Lama S, Kc S. Histopathological pattern of abnormal uterine bleeding in endometrial biopsies. *Nepal Med Coll J* 2013;15(1):74-77.
5. Jairajpuri ZS, Rana S, Jetley S. Atypical uterine bleeding-Histopathological audit of endometrium A study of 638 cases. *Al Ameen J Med Sci* 2013;6(1):21-8.
6. Doraiswami S, Johnson T, Rao S, Rajkumar A, Vijayaraghavan J, Panicker VK. Study of endometrial pathology in abnormal uterine bleeding. *J Obstet Gynecol Ind* 2011;61:426-430.
7. Sajitha K, Padma SK, Shetty KJ, Kishan Prasad HL, Permi HS, Hegde P. Study of histopathological patterns of endometrium in abnormal uterine bleeding. *CHRISMED J Health Research* 2014;1(2):76.
8. Vani BS, Vani R, Jijiya BP. Histopathological evaluation of endometrial biopsies and curetting's in abnormal uterine bleeding. *Trop J Path Micro* 2019;5(4):190-7.
9. Garg S, Kalhan S, Saini N, Sharma P, Misra S. Study of spectrum of endometrial pathology in patients with abnormal uterine bleeding and its clinicopathological correlation. *Int J Clin Diag Pathol* 2020;3(1):88-91.
10. Khan R, Sherwani RK, Rana S, Hakim S, Jairajpuri ZS. Clinico-pathological patterns in women with dysfunctional uterine bleeding. *Iranian J Pathol* 2016;11(1):20.
11. Munasinghe MADN, Fernandopulle SM, Hewavisenthi SDS. The histopathology of endometrial biopsies performed for abnormal uterine bleeding: an audit in a tertiary care centre in Sri Lanka. *J Diagnostic Pathol* 2021;16(2):53.