African Journal of Medicine and Pharma Research
E-ISSN: 2992-4197; P-ISSN: 2992-4170
https://africanjmpr.com/
Volume-1, Issue-1, 2023: 16-25

Research Article

Histomorphological Study of Endometrium in Cases of Abnormal Uterine Bleeding in Endometrial Biopsies and Hysterectomy Specimens

Renu Rathore[1], Harmanpreet Singh[2], Parveen Rana Kundu[3], Sunita Siwach[4], Jashanpreet Singh[5], Parul[6], Monika Yadav[7], Amrita Kulhariya[8]

Author Affiliations: Presenting author: Dr. Renu Rathore
Co-authors: Dr. Harmanpreet Singh, Dr. Parveen Rana Kundu, Dr. Sunita Siwach, Dr. Jashanpreet Singh, Dr. Parul, Dr. Monika Yadav, Dr. Amrita Kulhariya
BPS GMC (W) Khanpur Kalan, Sonepat, Haryana
Corresponding Author: Dr. Parul

Received: March 29, 2023 **Accepted:** April 30, 2023 **Published:** May 12, 2023

Abstract: Introduction: Abnormal Uterine Bleeding (AUB) is any uterine bleeding that is more than the normal volume (50-80 ml) or duration. FIGO in 2011 formulated and classified AUB as "PALM-COEIN" which is Polyp; Adenomyosis; Leiomyomas; Malignancy and hyperplasia; Coagulopathy; Ovulatory disorders; Endometrial factors; Iatrogenic causes; and Not classified. The prevalence of AUB is 3% to 30%, commonly in menarche and perimenopausal and endometrial hyperplasia and carcinoma in peri and postmenopausal women. The most common presentation of AUB is menorrhagia; also known as heavy menstrual bleed (HMB). These are classified as nonorganic and organic. This study is being done to evaluate the various histomorphological findings of endometrium in patients of AUB and to observe the frequency of various pathology in perimenopausal and postmenopausal age group in endometrial biopsies and hysterectomy specimens. **Materials and Methods**: A total of 103 patients presenting with abnormal uterine bleeding over a period of 8 months from August 2020 to April 2021 were included in the study. Among which maximum 75 were endometrial curettings and 28 were of hysterectomy specimens. Females above age of 40 years who had complained of AUB were included in the study and categorized into the following age groups: perimenopausal and postmenopausal. Data were entered in Microsoft Excel and managed in SPSS version 16. Analysis was done in the form of percentages and proportions and represented as tables and figures where necessary. **Results:** A total of 103 cases of AUB were taken; were categorized in perimenopausal and postmenopausal age group. Patients 'age ranged from 40 to more than 70 years. 28 cases were obtained from hysterectomy specimens, rest 75 cases were obtained by endometrial curettage. Out of all cases of AUB non organic contributes maximum 52% followed by organic cause (48%) in patients presenting with AUB. Perimenopausal age group (80.9%) contributes maximum towards both nonorganic and organic cause (AUB) in 56.7% and 43.3% cases respectively followed by postmenopausal age group in 19.1% cases. Among functional cases of AUB, secretory endometrium and disordered proliferative endometrium were the most common patterns and were seen in 26 (25.8%) and 11 (10%) cases, respectively and among organic lesions causing AUB, leiomyoma and endometrial hyperplasia with or without atypia were the most common and seen in 16 (15.5%) and 18 (16.5%) cases. **Conclusion:** Endometrial sampling is now considered as first line diagnostic tool because of its diagnostic accuracy, safety, quickness and convenience. Histomorphological study of endometrium plays a important role in assisting in right treatment. The histopathological examination revealed significantly more cases of COEIN component of AUB. The PALM COEIN classification system helps us in understanding various etiological causes of AUB.
Keywords: Abnormal Uterine Bleeding (AUB), menorrhagia, peri-menopausal, post-menopausal, endometrial curetting 's, hysterectomy.

Introduction

Endometrium being a hormonally sensitive tissue continuously undergoes rhthymic changes during reproductive life. It undergoes cyclical change during the 28 days cycle and they are divided into three phases; which are proliferative phase, the secretory phase and menstrual phase. The proliferative phase of the endometrium occurs under the effect of oestrogen; while progesterone controls the secretory phase. Menstruation is the end point in the cascade of events starting at hypothalamus and ending in the uterus.[1]

Abnormal Uterine Bleeding (AUB) is defined as any uterine bleeding that is more than the normal volume (50-80 ml) or duration (three to five days) and varying in regularity or frequency[1]. FIGO (Federation of International of Gynecologists and Obstetricians) in 2011 formulated a new nomenclature of AUB instead of DUB. The classification is named ''PALM-COEIN ''system, describes PALM as the structural causes and COIEN as the non-structural causes of abnormal uterine bleeding.[1]

Perimenopause is a period three to four years before menopause followed by one year of amenorrhea. Normally a one year period of amenorrhea after age of 40 is considered as menopause. Postmenopause is any time after six months amenorrhea in a menopausal women.[1] The incidence of endometrial hyperplasia and carcinoma were more common in perimenopausal and postmenopausal women. [2] The prevalence of abnormal uterine bleeding among reproductive aged women internationally is estimated to be between 3% to 30%, with a higher incidence occurring around menarche and perimenopause[3]. The most common presentation of abnormal uterine bleeding is menorrhagia followed by polymenorrhea, metrorrhagia.[4] AUB includes both DUB where no demonstrable pathology is seen and bleeding from causes like polyp, leiomyoma, hyperplasia and carcinoma. Age and menstrual history are particularly important, because the aetiologies of AUB differ according to the age and menstrual pattern.[5] In women more than 45 years of age[6] and postmenopausal age group adenocarcinoma of endometrium is most common genital cancer often preceded by proliferative precursor lesion like endometrial hyperplasia.[4]

Abnormal uterine bleeding is a collective terminology that includes both inorganic and organic cause.[5] Inorganic cause includes normal cyclical phase like proliferative pattern/secretory pattern and other abnormal physiological changes in endometrium like disordered proliferative endometrium, atrophic endometrium and hormonal change. Organic cause includes simple hyperplasia, complex hyperplasia, atypical hyperplasia, secretory hyperplasia, endometrial polyp, endometrial adenocarcinoma, chronic endometritis, endometrial metaplasia and granulomatous tuberculosis. Endometrial hyperplasia is classified into simple, complex and atypical on the basis of tissue architecture and each is further subdivided into typical and atypical based on cytology.[7] Organic cause of AUB diagnosed by histopathological examination of dilation and curettage.

Endometrial sampling by dilation and curettage is done to find out the etiology of AUB in perimenopausal women[2] and considered as first line diagnostic tool because of its diagnostic accuracy, safety, quickness and convenience.[7] Commonest type of endometrium in AUB are proliferative and secretory endometrium seen in all the normal subjects.[8] This study is being done to evaluate the various histomorphological findings of endometrium in patients of AUB and to observe the frequency of various pathology in perimenopausal and postmenopausal age group in endometrial biopsies and hysterectomy specimens.

Aims and Objectives

To study histomorphological profile of endometrium in cases of abnormal uterine bleeding in endometrial biopsies and hysterectomy specimens.

Materials and Methods

The present study "Histomorphological Study of Endometrium in cases of Abnormal Uterine Bleeding in Endometrial Biopsies and Hysterectomy Specimens." was a prospective study, which was carried out in the Department of Pathology, Bhagat Phool Singh, Government Medical College for Women, Khanpur Kalan, Sonepat, Haryana in India. A total of 103 patients presenting with abnormal uterine bleeding over a period of 8 months from August 2020 to April 2021 were included in the study. Among which maximum 75 were endometrial curettings and 28 were of hysterectomy specimens. The histopathological findings of AUB were categorized into functional or nonorganic and organic causes. The functional causes of AUB included in this study were normal cyclical phases (proliferative and secretory) of the endometrium and other abnormal physiological changes in the endometrium (atrophic endometrium, fragmented, irregular shedding and disordered proliferative endometrium). Organic intrauterine lesions which were the cause of AUB in this study include polyp, adenomyosis, granulomatous inflammation, leiomyoma, endometrial carcinoma and hyperplasia.

Females above age of 40 years who had complained of AUB were included in the study and categorized into the following age groups: perimenopausal and postmenopausal and various endometrial patterns were studied in these age groups. Patients with bleeding due to pregnancy related complications such as abortions, gestational trophoblastic diseases or ectopic pregnancy, inadequate samples and patients age below 40 years were excluded from the study. Endometrial specimens were obtained by either endometrial

biopsy or curettings and hysterectomy specimens which were fixed in 10% formalin, processed and embedded in paraffin. The specimens were processed routinely and stained with Haematoxylin and Eosin (H&E) stain. Data were entered in Microsoft Excel and managed in SPSS version 16. Analysis was done in the form of percentages and proportions and represented as tables and figures where necessary. Relevant clinical data regarding age, pattern and duration of abnormal bleeding, menstrual history, obstetric history, use of exogenous hormones, physical and gynecological examination findings, lab investigation results, and sonological and hysteroscopic findings were obtained from case records from Medical Records Department. All data were recorded in a carefully structured proforma.

Results

A total of 103 endometrial biopsies, curettings and hysterectomy specimens from patients with abnormal uterine bleeding (AUB) were analysed. Out of which 75 were endometrial curettings and 28 were of hysterectomy specimens. Total 103 cases, 53 cases (52%) were due to functional causes as no organic pathology was found, while the remaining 50 cases (48%) showed definite endometrial pathology (Table-1).

Out of the 53 functional cases of AUB, secretory endometrium and disordered proliferative endometrium were the most common patterns and were seen in 26 cases (25%) and 11 (10%) cases, respectively. This was followed by 09 (9%) cases of proliferative endometrium.

Amongst the 50 organic lesions causing AUB, leiomyoma and endometrial hyperplasia with or without atypia were the most common and seen in 16 (15.5%) and 18 (16.5%) cases. The other organic causes of AUB observed in this study include endometrial carcinoma, polyp and adenomyosis 5 cases each (5%) (as shown in Table-2).

The patients were categorized into the following age groups: perimenopausal; 83 cases (80.5%) and postmenopausal; 20 cases (19.5%).

The patient age ranges from 40 years to 70 years onwards; they were subdivided into seven groups. Maximum numbers of patients were in 40-44 years representing 41.7 % which was followed by 45-49 years group 29.3 % (Table-3).

Of different varieties of bleeding patterns, menorrhagia (Heavy Menstrual Bleed [HMB]) was the most prominent (57%) presenting symptom. Others were postmenopausal bleeding (18.5%), intermenstrual bleed (15.5%), irregular and prolonged and heavy bleed (4%), frequent (2%) and infrequent bleed (2%) and post coital bleed (1%) (Table –4).

Cases with no obvious gross pathology were observed by the surgeons, were labelled as DUB and were sent for histological assessment. It was the single largest group (50.2%) as regards the clinical diagnosis is concerned., BPV with pain constituted the second largest group (16.5%), 8.8% cases of uterine prolapse and fibroid in 6.8%. 5.4% cases each of endometrial polyp and endometrial carcinoma, 1% as ovarian carcinoma and 0.5% as cervical carcinoma (Figure-1). Histopathological examination of the endometrium showed various histological patterns in AUB in peri and post-menopausal age group (Table 5). Patterns of normal cyclical endometrium (proliferative and secretory phases) were the most common and seen in 35 (33.9%) cases presenting with AUB. They were also the predominant patterns seen in perimenopausal age groups.

Endometrial hyperplasia were the next common histological patterns which were seen in 18 (17.5%) cases followed by 16 (15.6%) cases of leiomyoma. Both these patterns were commonly seen in the perimenopausal age group; 14 and 13 cases respectively. Adenomyosis and polyp were equally seen in 5 (4.8%) cases as a cause of AUB in peri-menopausal age group. Atrophic endometrium comprised of 2 (2%) cases; all cases were seen in postmenopausal age groups. 1 (1%) case of granulomatous inflammation were also diagnosed in post-menopausal age group. Malignancy was a cause of AUB in only 5 (4.8%) cases, all of which were diagnosed after menopause (Table-5). Distribution of cases according to endometrial histopathology in different clinical bleeding patterns in both organic and non organic causes (Table-6,7).

Table-1: Distribution of total number of cases according to causes of AUB

Causes	**Total**	**Percentage (100%)**
Non Organic Cause	53	52%
Organic Cause	50	48%
Total	**103**	**100%**

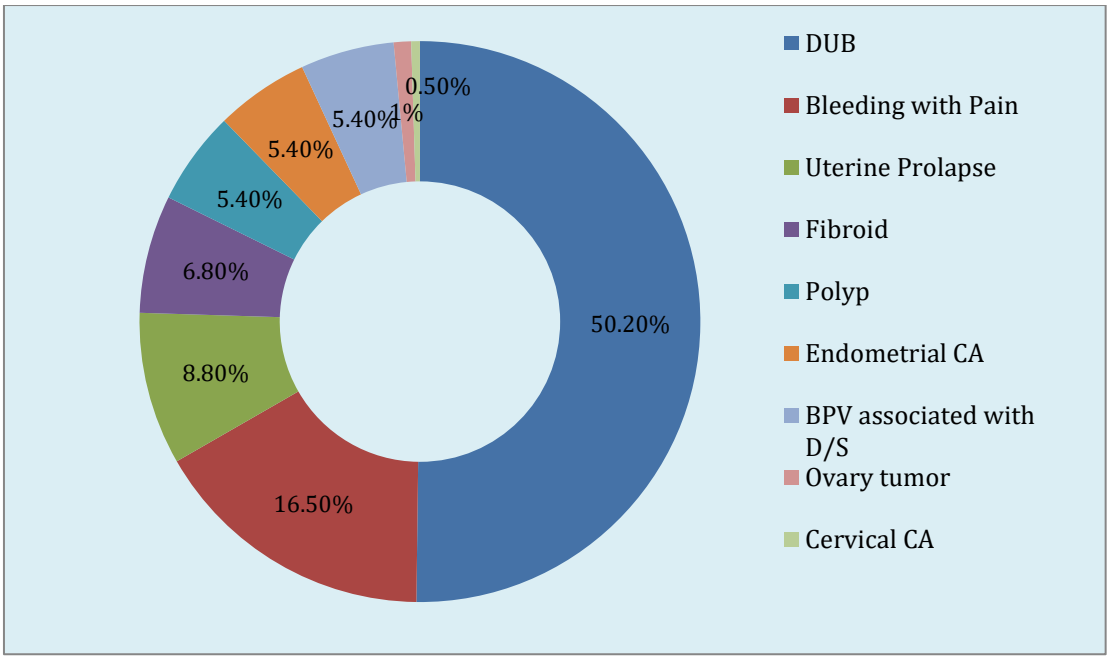


Figure-1: Distribution of total number of cases according to clinical diagnosis

Table-2: Distribution of total number of cases according to various endometrial patterns of AUB

Histopathological Diagnosis	Total Number of Cases	Percentage (100%)
Non Organic (DUB)		
Secretory	26	25.0%
Disordered Proliferative Endometrium (DPE)	11	10.0%
Proliferative	09	09%
Fragmented	04	04%
Atrophic	02	2.0%
Irregular shedding	01	01%
Organic		
Leiomyoma	16	15.5%
Simple Hyperplasia with or without Atypia	16	15.5%
Polyp	05	5.0%
Adenomyosis	05	5.0%
Endometrial Carcinoma	05	5.0%
Complex Hyperplasia with or without Atypia	02	2.0%
Granulomatous Inflammation	01	01%
Total	**103**	**100%**

Table-3: Distribution of total number of cases according to the age

Age group (Years)	Perimenopausal (% in group)	Postmenopausal (% in group)	Percentage (100%)
40-44	42 (97.6%)	01 (2.4%)	43 (41.7%)
45-49	29 (96.7%)	01 (3.3%)	30 (29.3%)
50-54	08 (66.6%)	04 (33.4%)	12 (11.6%)
55-59	03 (60%)	02 (40%)	05 (4.8%)
60-64	01 (16.7%)	05 (83.3%)	06 (5.8%)
65-69	00%	05 (100%)	05 (4.8%)
≥70	00%	02 (100%)	02 (2.0%)
Total	**83 (80.5%)**	**20 (19.5%)**	**103 (100%)**

Table-4: Distribution of total number of cases according to pattern of bleeding

Pattern of Bleeding	No. of Cases	Percentage (100%)
HMB (Menorrhagia)	59	57.0%
Postmenopausal Bleeding	19	18.5%
Irregular menstrual bleeding/Intermenstrual bleeding	16	15.5%
Prolonged and HMB	04	4.0%
Frequent menstrual bleeding	02	2.0%
Infrequent menstrual bleeding	02	2.0%
Postcoital bleed	01	1.0%
Total	**103**	**100 %**

Table-5: Distribution of total cases for histopathological patterns according to age group (peri and post-menopausal)

Histopathology	Perimenopausal (% in group)	Postmenopausal (% in group)	Total (Percentage %)
Secretory	25 (96.2%)	01 (3.8%)	26(25.8%)
Disordered Proliferative Endometrium (DPE)	10 (91%)	01 (09%)	11 (10.7%)
Proliferative	07 (77.8%)	02 (22.2%)	09 (8.1%)
Fragmented	03 (75%)	01 (25%)	04 (3.9%)
Atrophic	00	02 (100%)	02 (2.0%)
Irregular shedding	01 (100%)	00	01 (01%)
Leiomyoma	13 (81.3%)	03 (18.7%)	16 (15.6%)
Endometrial Hyperplasia	14 (77.7%)	04 (22.3%)	18 (17.5%)
Adenomyosis	05 (100%)	00	05 (4.8%)
Polyp	05 (100%)	00	05 (4.8%)
Endometrial Carcinoma (Ca)	00	05 (100%)	05 (4.8%)
Granulomatous Inflammation (Inf)	00	01 (100%)	01 (01%)
Total	**83 (80.5%)**	**20 (19.5%)**	**103 (100%)**

Table-6: Distribution of cases according to endometrial histopathology in different clinical bleeding patterns-non organic causes (53 cases)

Histopathology / Bleeding Pattern	Proliferative (%)	Secretory (%)	Disordered Proliferative (%)	Atrophic (%)	Irregular Shedding (%)	Fragmented (%)	Total (%)
HMB	05 (16.9%)	19 (58.4%)	05 (15.3%)	00	01 (1.5%)	03 (11.3%)	33 (61.3%)
Irregular Bleed/ Intermenstrual Bleed	01 (11.7%)	03 (35.3%)	03 (41.2%)	00	01 (5.9%)	00 (0%)	08 (16%)
PMB	02 (33.4%)	01 (16.6%)	00 (0%)	0 2 (25%)	00	02 (16.7%)	05 (11.3%)
Prolonged and HMB	01 (20%)	01 (60%)	01 (20%)	00	00	00	03 (4.7%)
Frequent Bleed	00	01 (100%)	00	00	00	00	01 (2.8%)
Infrequent Bleed	00	01 (33.3%)	01 (66.7%)	00	00	00	02 (2.8%)
Postcoital Bleed	00	00	01 (100%)	00	00	00	01 (0.9%)
Total	**09 (17%)**	**26 (49.2%)**	**11 (20.7%)**	**02 (3.8%)**	**01 (1.8%)**	**04 (7.5%)**	**53 (100%)**

Table-7: Distribution of cases according to endometrial histopathology in different clinical bleeding patterns-organic causes (50 cases)

Histopathology / Bleeding Pattern	Polyp (%)	Adenomyosis (%)	Leiomyoma (%)	Endometrial hyperplasia (%)	Endometrial carcinoma (%)	Granulomatou sinflammation (%)	Total (%)
HMB	03 (11.5%)	04 (19.5%)	08 (30.7%)	11 (38.3%)	00	00	26 (41.5%)
PMB	0	01 (7%)	03 (22%)	04 (22%)	05 (35%)	01 (7%)	14 (27.2%)
Irregular HMB/Intermenstrual Bleed	02 (25%)	00	04 (50%)	02 (25%)	00	00	08 (16%)
Prolonged and HMB	00	00	00	01 (100%)	00	00	01 (2.0%)
Frequent Bleed	00	00	01 (100%)	00	00	00	01 (1%)
Total	**05 (10%)**	**05 (10%)**	**16 (32%)**	**18 (36%)**	**05 (10%)**	**01 (2%)**	**50 (100%)**

Discussion

AUB becomes one of the most frequently encountered and significant morbidity in gynecological OPD[9]. As endometrium is dynamic and hormonally sensitive and responsive tissue which constantly undergoes changes throughout the reproductive life, therefore is vulnerable for pathological lesions.

Endometrial curettage becomes most common mean for assessing for the AUB patients. As in this procedure scrapping of endometrial lining and histopathological examination of tissue is done without injuring the nearby structures thus is well accepted by patients. While in hysterectomy whole uterus is removed and also there are chances of operative comorbidity therefore hysterectomy is reserved as final procedure. In younger age group the disturbance is most likely to be a functional one, in active reproductive life an organic cause for bleeding is more likely, pregnancy-related conditions being the most common. In late years of life, due to hormonal imbalance the functional disorders are common but the possibility of malignancy must be excluded. In post-menopausal age group, a local organic cause (the most common being cancer) is often present.

In our study, we received 75 endometrial curettage and 28 hysterectomy specimens. In the present study, we are dealing with abnormal uterine bleeding. In our study majority of patients were between 40-49 years (71%) age group which compared with other studies [10,11] were very much higher. The menstrual disorders increases with advancing age. The most common symptoms were menorrhagia (Heavy menstrual bleed) [57%] followed by postmenopausal bleeding [18.5%]. Similar findings were also noted by Singh et al [10] and Desai et al [12]. In the present study among causes of AUB; non organic cause contributes maximum 52% cases followed by organic cause in 48%. In concordance to our study, Devi et al [14] found maximum 70.4% were of nonorganic followed by 22.8% of organic cause.

Out of the 53 functional cases of AUB, secretory endometrium and disordered proliferative endometrium (DPE) were the most common patterns and were seen in 26 (25%) and 11 (10%) cases, respectively. This was followed by 9 (9%) cases of proliferative endometrium. All these pattern was more common in the perimenopausal age group and atrophic endometrium was in postmenopausal age group. Secretory endometrium was present max in 96.2% cases of perimenopausal age group. In concordance to our study Desai et al [12] found that this pattern was more common in perimenpausal age group (95%). In contrast to this study Vaidya et al [13] showed that maximum incidence of this pattern in reproductive (18-40years) followed by and peri and postmenopausal age group.

Amongst the 50 organic lesions causing AUB, leiomyoma and endometrial hyperplasia with or without atypia were the most common and seen in 16 (15.5%) and 18 (16.5%) cases respectively. The other organic causes of AUB observed in this study include endometrial carcinoma, polyp and adenomyosis 5 cases each (5%). No

cases of chronic nonspecific endometrities was seen in the present study. All these pattern were common in the perimenopausal age group. All cases of endometrial carcinoma and granulomatous inflammation (100%) were in postmenopausal age group.

Endometrial hyperplasia is common in perimenopausal women (13 out of 18 cases) causing symptom of irregular and prolonged bleeding due to anovulatory cycles in majority of cases. This was consistent with the study by Desai et al [12]. Simple hyperplasia without atypia was most (92%) in perimenopausal while simple hyperplasia with atypia (75%) were most common in postmenopausal whereas complex hyperplasia with or without atypia were common in perimenopausal age group.

In concordance to our study Shukla et al [15] and Desai et al [12] (31 out of total 39 cases) found that hyperplasia were common in perimenopausal age group. Shukla et al [15] also showed endometrial hyperplasia was most predominant pattern in contrast to our study which showed hyperplasia was second predominant pattern, first was secretory (25.8%). Similar observations (16% cases of hyperplasia) were made by Suneet et al [16].

In the present study endometrial carcinoma contributes 5% cases of AUB out of total 103 cases. Present study showed that all the cases of it was in postmenopausal age group; 5 (100%). In contrast to our study lower incidence of 2% of carcinomas were reported by Desai et al [12] and study also showed all were in postmenopausal age as similar to our study. Shukla et al [15] and Singh et al [10] also reported lower incidence of hyperplasia in 2.38% and 0.94% cases respectively.

Out of total 5 cases, maximum 2 cases were of adenocarcinoma including 1 was of serous morphology followed by 1 case of squamous cell carcinoma, 1 suspicious for adenocarcinoma. 1 each of poorly differentiated and adenosquamous carcinoma.

Endometrial carcinoma most often occurs in women in the sixth and seventh decades of life at an average age of 60 years. Seventy five percent cases occur in women older than 50 years of age and 90% of women with endometrial carcinoma have vaginal bleeding or discharge as their only presenting complaint. Less than 5% of women diagnosed with endometrial cancer are asymptomatic. The incidence of adenocarcinoma is 0.1% per year in post-menopausal women but rises to 10% in presence of abnormal bleeding.

In our study there were 2 cases of adenocarcinoma amongst 17 patients with post-menopausal bleeding and none in perimenopausal group. In our study the histopathological examination revealed significantly more cases of COEIN compartment (51.7%) of AUB while PALM contributes 48.3% cases of AUB. In contrast to our study other studies by Mishra et al [17], Singh et al [18] and Singh et al [19] found maximum cases of AUB belonged to PALM group in 63.98%, 58.3% and 69.4% cases respectively while COEIN contributes 36.01%, 41.7% and 30.6% respectively.

Conclusion

According to our study, AUB is mainly the problem of women in perimenopausal age group and most susceptible age group is 40-49 yrs. Multiparity is also important risk factor for development of AUB. Commonest bleeding pattern found was to be menorrhagia or heavy menstrual bleed (HMB) followed by post-menopausal bleed (PMB). Histopathological study of endometrial biopsies and hysterectomy specimens in AUB patients shows a wide spectrum of changes ranging from normal endometrium in various hormonal cycles to malignancy.

AUB in older patients should always raise a suspicion of malignancy. Histopathological examination of AUB patient will prevent unnecessary hysterectomy. In our study, histopathological examination revealed significantly more cases of COEIN component of AUB. The PALM COEIN classification system helps us in understanding various etiological causes of AUB.

Declarations

Acknowledgments: Not Applicable.
Funding: Not Applicable.
Conflict of Interest: The Authors declare no conflict of Interest.
Informed Consent and Ethical Approval: Not applicable.
Author Contributions: All authors contributed equally in manuscript writing, proof reading as well as in data collection.

References

1. Padubidri VG, Daftary SN. Howkins & Bourne Shaw's Textbook of Gynaecology. 16th ed. New Delhi: Elsevier; 2011; p.29-34.
2. Verma D, Verma A. Histopathological correlation of abnormal uterine bleeding in perimenopausal women. Int J Reprod Contracep Obstet and Gynecol. 2016;5:2343-5.
3. Munro MG, Critchley HOD, Fraser IS, FIGO Menstrual Disorders Committee. The two FIGO systems for normal and abnormal uterine bleeding symptoms and classification of causes of abnormal uterine bleeding in the reproductive years: 2018 revisions. Int J Gynaecol Obstet. 2018;143:393-408.
4. Elmaoğulları S, Aycan Z. Abnormal Uterine Bleeding in Adolescents. J Clin Res Pediatr Endocrinol. 2018;10(3):191-197.
5. Chitra T, Manjani S, Madhumittha R, Harke AB, Saravanan E, Karthik S et al. Histopathology of endometrial curettings in perimenopausal women with abnormal uterine bleeding. J Eval Med Dent Sci. 2016;5:1285-90.
6. Riaz S, Ibrar F, Dawood NS, Jabeen A. Endometrial pathology by endometrial curettage in menorrhagia in premenopausal age group. J Ayub Med Coll Abbottabad. 2010;22:161-4.
7. Kurman RJ, Norris HJ. Evaluation of criteria for distinguishing atypical endometrial hyperplasia from well-differentiated carcinoma. Cancer. 1982;49(12):2547-59.
8. Panchal NS, Baxi SN. Importance of clinical history and endometrial histomorphology in treatment dysfunctional uterine bleeding. Int J Cur Res Rev. 2015;7:22-9.
9. Sarwar A, Haque A. Types and frequency of pathologies in endometrial curetting of abnormal uterine bleeding. Int J Pathol. 2005;3:65-70.
10. Singh P, Jaiswal VK, Garg P. Endometrial patterns in abnormal uterine bleeding. Int J Biomed Res. 2016;7(5):244-50.
11. Gogate B, Aphale V, Khandeparkar SGN. Study of endometrial biopsies in abnormal uterine bleeding at a tertiary care hospital. Int J Sci Res. 2019;12(8):27-8.
12. Desai K, Patole K, Kathaley M. Endometrial evaluation by histopathology in abnormal uterine bleeding in perimenopausal and postmenopausal patients. MVP J Med Sci. 2014;1(2):75-9.
13. Vaidya S, Lakhey M, Vaidya S, Sharma PK, Hirachand S, Lama S, et al. Histopathological pattern of abnormal uterine bleeding in endometrial biopsies. Nepal Med Coll J. 2013;15(1):74-7.
14. Devi J, Aziz N. Study of histopathological pattern of endometrium in abnormal uterine bleeding in the age group 40-60 Years–A study of 500 cases. Valley Int J 2014;1(10):579-85.
15. Shukla A, Panchonia A, Kulkarni CV, Agarwal P. Validation of endometrial curettage and histopathological examination in abnormal uterine bleeding: An tertiary centre study. J Med Sci Clin Res. 2018;6(3):1328-34.
16. Kumar S. Clinicopathological study of abnormal uterine bleeding in North Indian patients. Asian J Biomed Pharma Sci. 2016;6(53):50-1.
17. Mishra D, Sultan S. FIGO'S PALM–COEIN Classification of abnormal uterine bleeding: A clinico-histopathological correlation in Indian setting. J Obstet Gynaecol India. 2017;67(2):119-25.
18. Singh K, Agarwal C, Pujani M, Raychaudhuri S, Sharma N, Chauhan V, Chawla R, Ahuja R, Singh M. A clinicopathological correlation of international federation of gynecology and obstetrics's PALM–COEIN classification of abnormal uterine bleeding: Indian scenario. J Mid-Life Health. 2019;10(3):147.
19. Singh A, Choudhary A. A study of PALM-COEIN Classification of Abnormal Uterine Bleeding (AUB) in Perimenopausal Women at a Tertiary Care Teaching Hospital. J Med Sci Clin Res. 2018;6(6):287-92.

Figures

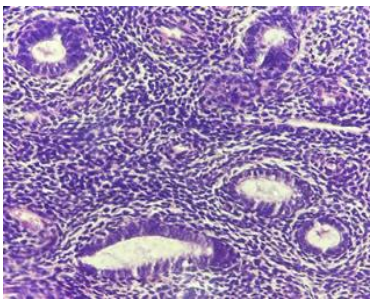


Figure 1a

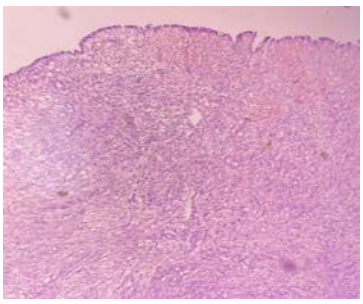


Figure 1b

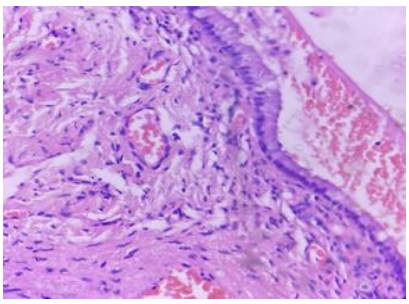


Figure 1c

Microphotomicrograph 1a: Proliferative phase endometrium: Tissue section showing proliferating glandular epithelium with basally located nuclei and cellular stroma (H&E 400X)

Microphotomicrograph 1b: Leiomyomatous endometrial polyp: Tissue section showing surface epithelium of polyp (H&E 40X)

Microphotomicrograph 1c: Endocervical polyp: Tissue section shows endocervical type epithelium; stroma shows proliferation of blood vessels and edema (H&E 400X)

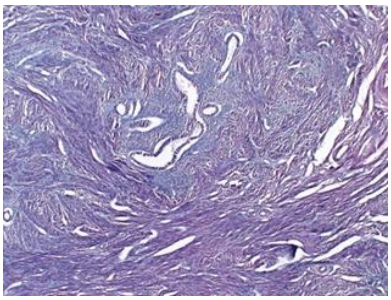


Figure 2a

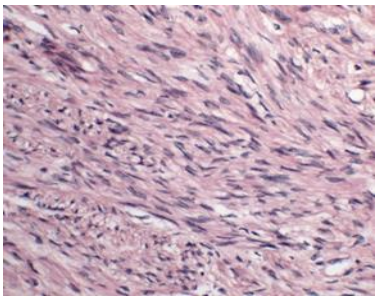


Figure 2b

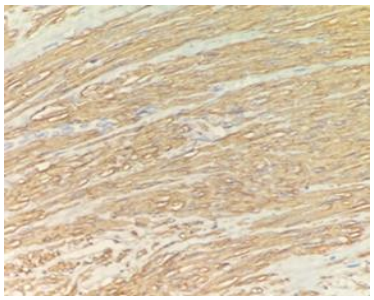


Figure 2c

Microphotomicrograph 2a: Adenomyosis: Tissue section showing foci of endometrial glands and stroma in myometrium (H&E 400X)

Microphotomicrograph 2b: Leiomyoma: Tissue section showing elongated cigar shaped smooth muscle nuclei arranged in form of interlacing fascilcles (H&E 400X)

Microphotomicrograph 2c: Leiomyoma: Tissue section, Leiomyoma shows SMA (smooth muscle actin) positivity (SMA 400X)

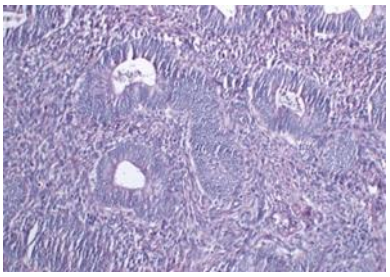


Figure 3a

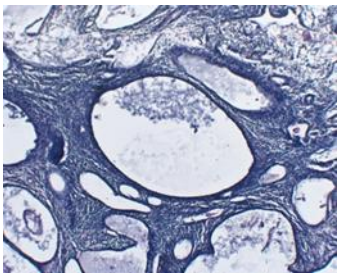


Figure 3b

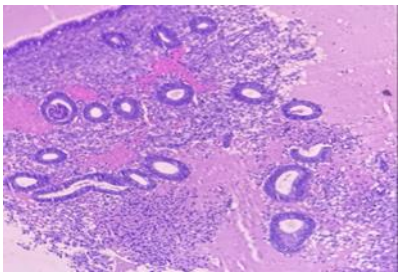


Figure 3c

Microphotomicrograph 3a: Simple hyperplasiawith atypia endometrium: Tissue section lining epithelium shows atypia (H&E 400X)

Microphotomicrograph 3b: Senile cystic atrophy of endometrium : Tissue section showing cystically dilated glands lined by cuboidal to low columnar or flattened epithelium with fibrous stroma (H&E 400X)

Microphotomicrograph 3c: Disordered proliferative endometrium: Tissue section shows endometrial glands in proliferative phase and stroma is secretory type (H&E 100X)

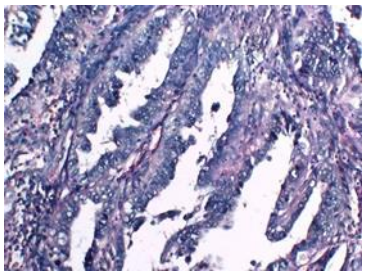


Figure 4a

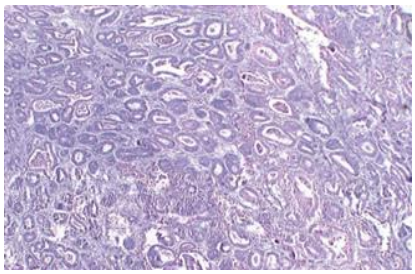


Figure 4b

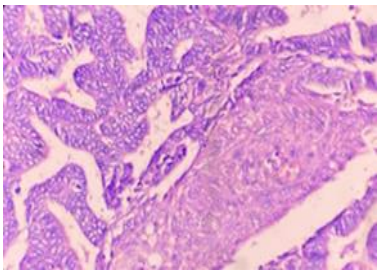
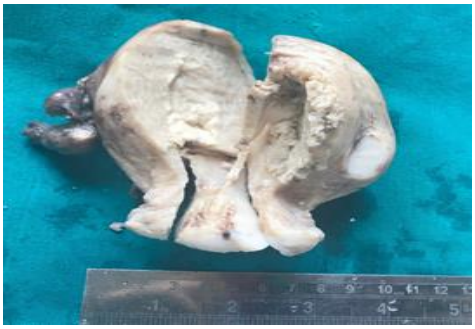


Figure 4c

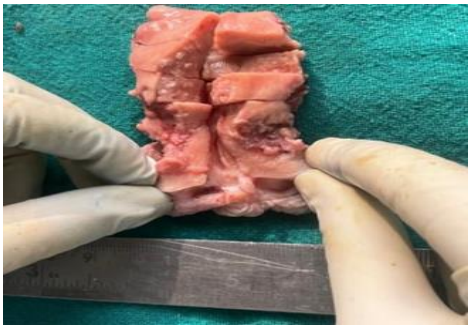
Microphotomicrograph 4a: Serous carcinoma endometrium: Tissue section showing papillary fronds with atypia (H&E 400X)

Microphotomicrograph 4b: Adeno carcinoma endometrium: Tissue section (H&E 200X)

Microphotomicrograph 4c: Adenosquamous carcinoma endometrium: Tissue section shows atypical squamous component (H&E 400X)



Gross 1



Gross 2

Gross 1: Endometrial adenocarcinoma: Cut section of uterus showing papillary excrescences arising from uterine cavity

Gross 2: Endocervical polyp: Cut section shows a greyish white small polypoidal tissue arising from endocervical canal

Citation: Rathore R, Singh H, Kundu PR, Siwach S, Singh J, Parul, Yadav M, Kulhariya A. Histomorphological Study of Endometrium in Cases of Abnormal Uterine Bleeding in Endometrial Biopsies and Hysterectomy Specimens. Afr J Med Pharm Res. 2023;1(1):16-25.