ISSN- O: 2458 - 868X, ISSN–P: 2458 – 8687
National Library of Medicine - ID: 101731606

International Journal of Medical Science and Innovative Research (IJMSIR)
IJMSIR : A Medical Publication Hub
Available Online at: www.ijmsir.com
Volume – 8, Issue – 2, March – 2023 , Page No. : 44 – 50

Histopathological spectrum of endometrial biopsy in women of reproductive, perimenopausal and postmenopausal age presenting with abnormal uterine bleeding

[1]Dr. Saumya Katiyar, Pathology Resident, RUHS College of Medical Sciences, Jaipur
[2]Dr. Chandrika Gupta, Associate Professor, RUHS College of Medical Sciences, Jaipur
[3]Dr. Virendra Vikram Singh Patel, Surgery Resident, RUHS College of Medical Sciences, Jaipur
[4]Dr. Hema Udawat, Professor, RUHS College of Medical Sciences, Jaipur
Corresponding Author: Dr. Saumya Katiyar, Pathology Resident, RUHS College of Medical Sciences, Jaipur

Citation this Article: Dr. Saumya Katiyar, Dr. Chandrika Gupta, Dr. Virendra Vikram Singh Patel, Dr. Hema Udawat, "Histopathological spectrum of endometrial biopsy in women of reproductive, perimenopausal and postmenopausal age presenting with abnormal uterine bleeding", IJMSIR- March - 2023, Vol – 8, Issue - 2, P. No. 44 – 50.
Type of Publication: Original Research Article
Conflicts of Interest: Nil

Abstract

Introduction: Abnormal uterine bleeding is the commonest presenting symptom and major gynecological problem responsible for as many as one-third of all outpatient's gynecologic visit. Abnormal Uterine Bleeding (AUB) is defined as any bleeding that does not correspond with the frequency, duration or amount of blood flow of a normal menstrual cycle. The various methods of determining the endometrial pathology is dilatation and curettage, fractional curettage, endometrial biopsy and Hysterectomy specimen. The endometrial sampling is chosen to evaluate abnormal uterine bleeding because it has several advantages over other diagnostic methods[1].The histopathological examination of endometrium in perimenopausal and postmenopausal women will pin point the underlying disease and helps in proper management of these patients.

Methodology: In the present study 200cases of endometrial biopsy specimens collected as per inclusion criteria were subjected to the fixation with 10% buffered formalin, grossing, tissue processing and staining with Harris haematoxylin and eosin stain.

Microscopic evaluation was done of each specimen along with the clinical data on hand.

Results: The present study included endometrial biopsies referred to department of pathology, RUHS College of medical sciences, Jaipur from various outpatient departments of attached hospital. We included a total of 200 cases as per the inclusion and exclusion criteria. The mean age of study group was 41.22±10.85 years. The minimum age was 23 years and maximum age was 73 years. Maximum number of cases were in 3rd decade of life with 86 (43%) cases followed by 4th decade with 52 (26%) cases. Least number of cases was observed in 7h decade with 2 cases (1%). Majority of the patients were in reproductive age group i.e. between 18 - 39 years (56%) followed by perimenopausal age group i.e, 40 - 50 years. (26%).

Keywords: Abnormal Uterine Bleeding (AUB), Endometrium, Histopathology, Reproductive, Premenopausal, Postmenopausal.

Introduction

This study will evaluate spectrum of endometrial patterns in women with AUB and to correlate with different age groups i.e. reproductive, perimenopausal and postmenopausal age groups. Abnormal Uterine Bleeding (AUB) is defined as any bleeding that does not correspond with the frequency, duration or amount of blood flow of a normal menstrual cycle. A normal menstrual cycle has a frequency of 24 to 38 days and lasts 2 to 7 days, with 5 to 80 milliliters of blood loss[2]. Variations in any of these 4 parameters constitute abnormal uterine bleeding.2 The most common presentations are menorrhagia, polymenorrhoea, metrorrhagia, and intermenstrual bleeding. It is not a disease in itself; it is an outcome of various endometrial pathologies. This condition necessitates aggressive treatment including a major surgical procedure.

Abnormal uterine bleeding is a major gynecological problem, accounting for 33% of outpatient referrals, including 69% of referrals in peri-menopausal and postmenopausal age group.4 One third of patients attending gynaecology OPD present with complaints of abnormal uterine bleeding.5 AUB leads to loss of productivity and may result in surgical interventions. AUB is reported to occur in 9 to 14% women between menarche and menopause[3]. The prevalence varies in each country. In India, the reported prevalence of AUB is around 17.9%.

The various methods of determining the endometrial pathology is dilatation and curettage, fractional curettage, endometrial biopsy and Hysterectomy specimen. The endometrial sampling is chosen to evaluate abnormal uterine bleeding because it has several advantages over other diagnostic methods. The term ‘menstruation’ is derived from the latin word ‘menstruus’ which means monthly. Sir John William stated that menstruation is a cyclical process. Noyes gave the first detailed description on how to date the endometrium from histological criteria. Ariel Revel and Asher Shushan in their study, stated that hysteroscopy with endometrial biopsy is the gold standard investigation for abnormal uterine bleeding[4].

Methodology

The procedure was explained to patient in complete detail and after explanation, informed and valid written consent was taken. All Endometrial biopsy specimens collected as per inclusion criteria were subjected to the fixation with 10% buffered formalin, grossing, tissue processing and staining with Harris haematoxylin and eosin stain.

Microscopic evaluation was done of each specimen along with the clinical data on hand.

Results

The study comprised of 200 patients presenting with AUB.

Table 1: Age group wise distribution of cases

Age Group	No. of Cases	Percent
21 – 30	26	13.0
31 – 40	86	43.0
41 – 50	52	26.0
51 – 60	18	9.0
61 – 70	16	8.0
71 – 80	2	1.0
Total	200	100.0

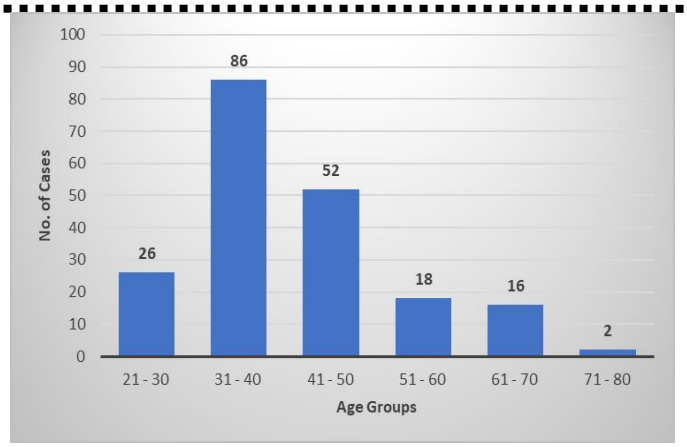

Chart 1: Age group wise distribution of cases

In the present study, maximum number of cases were in 3rd decade of life with 86 (43%) cases followed by 4th decade with 52 (26%) cases. Least number of cases was observed in 7h decade with 2 cases (1%).

Table 2: Distribution of cases according to age category

Age Group according to menstrual cycle	No. of Cases	Percent
Reproductive (18 years to 39 years)	112	56.0
Perimenopausal (40 years to 50 years)	52	26.0
Menopausal (> 50 years)	36	18.0
Total	200	100.0

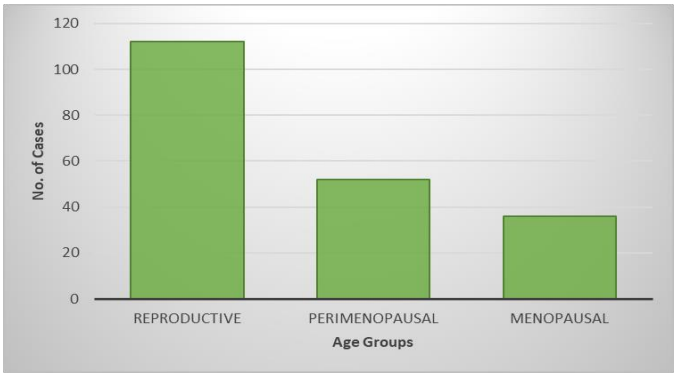

Chart 2: Distribution of cases according to age category

In our present study, patients were categorized as reproductive, perimenopausal group and postmen opausal group. Majority of the patients were in reproductive age group i.e. between 18 - 39 years (56%) followed by perimenopausal age group i.e. 40 - 50 years. (26%)

Table 3: Distribution of cases according to category of lesion

Category	No. of Cases	Percent
Benign	186	93.0
Premalignant	3	1.5
Malignant	11	5.5
Total	200	100.0

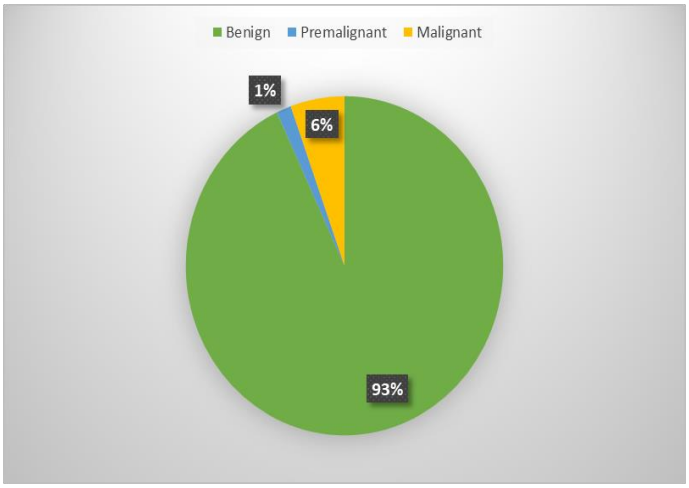

Chart 3: Distribution of cases according to category of lesion

In the present study benign lesions were the most common types of lesions with 186 (93%) cases followed by Malignant lesions with 11 (5.5%) cases. The premalignant lesions were only 3 (1.5%) cases.

Table 4: Distribution of benign lesions according to age category

	Age Category						
	Reproductive		Perimenopausal		Menopausal		Total
	No. of Cases	Percent	No. of Cases	Percent	No. of Cases	Percent	No. of Cases
Acute suppurative inflammation	0	0.0%	5	100.0%	0	0%	5
Disordered proliferation of endometrium	12	30.8%	13	33.3%	18	46.15%	39
Endometrial polyp	2	28.6%	3	42.9%	2	28.6%	7
Hydatidiform mole	9	100.0%	0	0.0%	0	0%	9
Pill Endometrium	10	100.0%	0	0.0%	0	0%	10
Proliferative Phase	16	55.2%	9	31.0%	0	0%	25
Retained product of conception	26	96.3%	1	3.7%	0	0%	27
Secretory Phase	26	74.3%	8	22.9%	0	0%	34
Simple endometrial hyperplasia	8	33.3%	10	41.7%	7	27.5%	24
Tubercular Endometritis	0	0.0%	0	0.0%	1	100.0%	1
Total	109	58.6%	49	26.3%	28	15.1%	186

In the present study out of 186 cases of benign endometrial lesions, maximum number of cases 109 (58.6%) were in reproductive age group, and minimum 28 (15.1%) cases were in postmenopausal age group. Hence benign lesions were predominant in younger population or in reproductive age. It may be due to normal shedding pattern of endometrium.

Table 5: Distribution of premalignant lesions according to age category

	Age Category						
	Reproductive		Perimenopausal		Menopausal		Total
	No. of Cases	Percent	No. of Cases	Percent	No. of Cases	Percent	No. of Cases
Complex endometrial Hyperplasia	1	33.3%	0	0.0%	2	66.7%	3
Total	1	33.3%	0	0%	2	66.7%	3

In the present study out of 3 cases of premalignant endometrial lesions, maximum number of cases 2 (66.6%) were in postmenopausal age group, and no case in perimenopausalage.

Table 6: Distribution of malignant lesions according to age category

	Age Category						
	Reproductive		Perimenopausal		Menopausal		Total
	No. of Cases	Percent	No. of Cases	Percent	No. of Cases	Percent	No. of Cases
Adenocarcinoma	0	0.0%	3	42.9%	4	57.1%	7
Adenocarcinoma-clear cell type	0	0.0%	0	0.0%	1	100.0%	1
Adenocarcinoma-poorly differentiated	1	100.0%	0	0.0%	0	0.0%	1
Metastatic deposit p/o carcinoma cervix	1	50.0%	0	0.0%	1	50.0%	2
Total	2	18.2%	3	27.3%	6	54.5%	11

In the present study out of 11 cases of malignant endometrial lesions, maximum number of cases 6 (54.5%) were in postmenopausal age group, and minimum 2 (18.2%) cases were in reproductive age group. Hence malignant lesions were more predominant in older population or in postmenopausal age in the present study. It occurs because normal-appearing endometrial cells may be shed in the second half of the menstrual cycle but in the postmenopausal period physiologic shedding is not expected to take place.

Discussion

In the present study we included 200 cases. The mean age of study group was 41.22±10.85 years. The minimum age was 23 years and maximum age was 73 years. Asuzu IM et al.[64]reported the mean age of 33.53 yrs (SD=7.6) and Dwivedi S et. al.[5]reported the mean age of AUB cases as 39.6 years ±10.4 (19-77 years) which is comparable to our present study.

Table 7 : Comparison of Age Group Distribution

Age/ group distribution	Dwivedi S et. al.[5]	Prathipaa R et al.[6]	Present study	
Reproductive age group (18 to 39 years)	61/108 patients, 56.48%	115 (44.92%)	112	56.0
Perimenopausal group (40-49 years)	29/108 patients, 26.85%	108 (42.19%)	52	26.0
Postmenopausal group(>50years)	18/108 patients, 16.67%	33 (12.9%)	36	18.0

In our present study, patients were categorized as reproductive, perimenopausal group and postmenopausal group. Majority of the patients were in reproductive age group i.e. between 18 - 39 years (56%) followed by perimenopausal age group i.e, 40 - 50 years(26%) which was comparable with study conducted by Dwivedi S et. al.[5]and Prathipaa R et al.[6]as shown in above table where the maximum number of cases were in the reproductive age group.

In the present study, in reproductive age group, benign lesions were more common as comparedto malignant lesions. Most common lesions were retained product of

conception (26 cases, 23.2%) and menstrual phases of endometrium i.e. Proliferative (26 cases, 23.2%) and Secretory phase (16 cases, 14.3%). Similar previous studies also reported similar results. Dwivedi S et. Al[5] reported that in the reproductive age group, the most common histological finding was the normal menstrual pattern (36/61 cases, 59.02%) whereas the most common pathological finding was hormonal imbalance and pill effect (16/61 cases, 26.23%) followed by gestation products (4/61 cases, 6.56%), chronic endometritis (3/61 cases, 4.92%), and endometrial polyp (2/61 cases, 3.28%). Lata G[7] et alalso reported that patterns of normal cyclical endometrium (proliferative and secretory phases) were the most common and seen in 30% and 19% cases respectively among cases presenting with AUB. The results of our study are comparable with the previous studies.

In the present study, among the patients in perimenopausal age group, the cases are dominated by benign lesions however the percentage of malignancy increases as compared to reproductive age group. The most common lesion in perimenopausal age group was disordered proliferation of endometrium (13 cases, 25%) followed by simple endometrial hyperplasia (10 cases, 19.2%). Adenocarcinoma makes 5.8% cases of the total 52 cases in our study. The results are in concordance with results of Dwivedi S et. al.[5]and Prathipaa R et al.[6] Behera B[8] et al in their study reported that proliferative endometrium was the dominant histological finding in this age group accounting for 33.8% followed by 21.1% of disordered proliferative endometrium. There were 5 cases(2.1%) of complex hyperplasia with atypia and 1 case(0.4%) of endometrial adenocarcinoma in this age group. The results were comparable with our study.

Disordered proliferative endometrium differs from the normal proliferative endometrium in the absence of uniform glandular development but is not abnormal enough to be considered hyperplastic. It is an exaggeration of the normal proliferative phase without significant increase in the overall ratio of glands to stroma and is due to persistent oestrogen stimulation. We observed a rise in percentage of these cases as the age advances, with 10.7% cases in reproductive age group as compared to 25% cases in perimenopausal age. The disordered proliferative endometrium resembles normal proliferative tissue in consisting of glands lined by cytologically bland, pseudostratified, proliferative, mitotically active epithelium and in having a normal ratio of glands to stroma. Diagnosing the patients at the earliest stage of this spectrum will be of definitive help to the practicing gynaecologists to prevent the disease progression.

In the present study we observed that with increasing age, in post menopausal age group the incidence of malignant cases increased significantly. The most common findings in post-menopausal age group was Disordered proliferation of endometrium (18 cases, 50%) followed by simple hyperplasia and adenocarcinoma. Our results are in concordance with study done by Dwivedi S et al.[5] who also reported the most common histological finding was atrophic endometrium (11/18 cases, 61.11%) followed by hormonal imbalance and pill effect (2/18 cases 11.11%), endometrial hyperplasia with atypia (3/18 cases, 16.67%) and endometrial carcinoma (2/18 cases, 11.11%). However Prathipaa R et al.[6] reported proliferative endometrium as common finding in post menopausal age group also, which is in contrast with our study.Vaidya S[9] et al, also found in their study that endometrial hyperplasia and cancer were usually seen in the perimenopausal and postmenopausal age groups.

It is of vital importance to look for endometrial hyperplasia on histopathological examination as they are

considered to be precursors of endometrial carcinoma. The ultimate risk of progression of endometrial hyperplasia to cancer is 5-10%. Simple hyperplasia without atypia, complex hyperplasia without atypia, simple hyperplasia with atypia and complex hyperplasia with atypia have variable progression risks of 1%, 3%, 8%, and 29%, respectively, to malignancy.

Conclusion

In our study, abnormal uterine bleeding presented most as menorrhagia with or without pain abdomen and postmenopausal bleeding were the common symptoms. Lesser common presentation were metrorrhagia and menometrorrhagia.

The causes of abnormal uterine bleeding varied from non- neoplastic lesions to neoplastic lesions as seen in our study where non-neoplastic lesions constituted 93% and neoplastic lesions constituted 5.5%. The neoplastic lesions were more common in elder age groups as compared to younger age groups.

Histopathological examination of D&C and Hysterectomy specimens will pin point the exact cause of the abnormal uterine bleeding and helps not only in planning proper management of cases but also to predict prognosis.

References

1. Mutter G.L, Ferenczy A, Blaustein's Pathology of Female Genital Tract: Anatomy and Histology of the Uterine Corpus, Fifth Edition; Springer-verlag; 2002:383-419.
2. Davis E, Sparzak PB. Abnormal Uterine Bleeding. [Updated 2022 Sep 9]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing;2022:579-615.
3. Deka RR, Saikia T, Handique A, Sonowal B. Histopathological spectrum of endometrial changes in women presenting with abnormal uterine bleeding with special reference to endometrial malignancies: A two years hospital based study. Annals of Applied Bio-Sciences. 2016 May 12;3(2):A151-157.
4. MencogliaL,PerinoA,HamouJ.Hysteroscopyinperi menopausalandpostmenopausal women with abnormal uterine bleeding. J Reprod Med. 1987; 32: 577-582.
5. Dwivedi S, Bajpai M, Bhushan I &Satkirti A. Spectrum of endometrial lesions observed on histopathological examination of endometrial samples in women with abnormal uterine bleeding. Int J Res Med Sci 2019;7:4124-8.
6. Prathipaa R, Divya J. Histopathological study of endometrial samples in abnormal uterine bleeding. Indian J Pathol On col 2020;7(4):567-570.
7. Lata G, Sharma S, Kaur SP &Gulia SP. Histo-pathological pattern of endometrial biopsy in females with abnormal uterine bleeding: a retrospective study in tertiary care hospital of Haryana. Int J ReprodContraceptObstetGynecol2020;9:4068-73.
8. Behera B, Mohanty SR, Patro MK. Histopathological evaluation of endometrium in cases of abnormal uterine bleeding– an institutional experience in a tertiary care center. J. Evid. Based Med. Health. 2020;7(1),24-28.
9. Vaidya AP, Horowitz NS, Oliva E, Halpern EF, Duska LR. Uterine malignant mixed mullerian tumors should not be included in studies of endometrial carcinoma. Gynecologic oncology. 2006 Nov 1;103(2):684-7.