Original Research Article

Study of endometrial pathology in abnormal uterine bleeding

M.Vijayasree[1], B.Sreedhar[2*], T.Dhanamjayarao[3], C.Padmavathi Devi[4], T.Aruna Prabhavathi Devi[5], Arshiya Firdous[6]

[1]Professor, Department of Pathology, Guntur Medical College, Guntur, Andhra Pradesh, India
[2]Associate Professor, Department of Pathology, Guntur Medical College, Guntur, Andhra Pradesh, India
[3]Associate Professor, Department of Pathology, Guntur Medical College, Guntur, Andhra Pradesh, India
[4]Professor and HOD, Department of Pathology, Guntur Medical College, Guntur, Andhra Pradesh, India
[5]Post graduates, Guntur Medical College, Guntur, Andhra Pradesh, India
[6]Post graduates, Guntur Medical College, Guntur, Andhra Pradesh, India

Received: 25-11-2021 / Revised: 18-12-2021 / Accepted: 07-01-2022

Abstract

Background: The histopathological diagnosis of abnormal uterine bleeding (AUB) shows spectrum of patterns and pathologist plays a vital role in the reporting of endometrium and differentiating non neoplastic lesion from neoplastic lesions, early diagnosis of precursor lesions and exclusion of malignancy. The aim of the study is to study the spectrum of endometrial patterns in women with AUB and to correlate with different age groups. **Materials and methods:** 780 samples of endometrium in women with AUB were received from gynecology department, processed and stained with hematoxylin and eosin, subjected to histopathological examination. **Results:** The peak incidence was observed in the age group 31-40 years. The common histological pattern was proliferative pattern 428(54.87%),secretory phase 174(22.30%),endometrial hyperplasia without atypia 49(6.28%),pill endometrium 34(4.35%),atrophic endometrium 32(4.10%),endometrial carcinoma 28(3.58%),inadequate sample 17(2.17%),endometrial polyps 13(1.66%),endometrial hyperplasia with atypia 3(0.38%) and tuberculous endometritis 2(0.24%).**Conclusion:** AUB significantly affects the quality life of women and leads to anemia. Hence histopathological examination should be considered which plays a critical role in the early diagnosis of endometrial pathology and to provide appropriate gynecological management.

Key words: Abnormal uterine bleeding, AUB, Biopsy of endometrium, Histopathology.

Introduction

Abnormal Uterine Bleeding (AUB) is one of the commonest presenting symptoms in gynecology clinics. Prevalence of AUB in women between menarche and menopause is around 9 – 14%. The reported prevalence of AUB in India is around 17.9%[1]. AUB is defined as change in frequency of menstruation, duration of flow and amount of blood loss. The mean duration of menstruation is 4 to 7 days and average blood loss per cycle is 35mL. It includes both organic and non-organic causes of uterine bleeding. Endometrial biopsy or curettage is a safe and effective diagnostic modality in evaluation of abnormal uterine bleeding after ruling out medical causes[2]. The underlying disease can be detected by histological patterns of endometrium considering the age,menstrual cycle phase and use of any exogenous hormones. Pregnancy related and dysfunctional uterine bleeding is more common in younger patients,whereas atrophy and organic lesions became more frequent in older individuals[3]. A new nomenclature system known by the acronym PALM-COIEN (Polyp; Adenomyosis; Coagulopathy; ovulatory disorders; endometrial factors; iatrogenic; and not classified) was introduced in 2011 by the International Federation of Gynecology and Obstetrics (FIGO) to standardize the terminologies of AUB.

The PALM-COIEN system is etiopathogenesis based with PALM describing structural causes and COIEN denoting nonstructural causes of AUB. Hence, FIGO nomenclature system will allow the standardization and uniformity while conducting future studies and can rectify the problem of inconsistency in AUB management[4]. This study was done to evaluate the endometrial causes of AUB and to determine the specific pathology in different age groups.

*Correspondence
Dr. B.Sreedhar
Associate Professor, Department of Pathology, Guntur Medical College, Guntur, Andhra Pradesh, India.
E-mail: sreedhar930@gmail.com

Materials and methods

This was a retrospective study done on patients presenting with AUB from January 2019 to December 2019 in the department of pathology. Patients were selected based on the clinical details. Patients with isolated endometrial causes of abnormal uterine bleeding were included for the study and those with leiomyoma,cervical,vaginal pathology and hemostatic disorders were excluded. All the specimens were transported in 10% formalin to the pathology laboratory. The gross morphology was recorded. The tissue bits were processed in LEICA automatic tissue processor and paraffin blocks were prepared. Tissue sections were cut (4-6 microns) and stained with hematoxylin and eosin stain and evaluated under light microscope. Histopathological examination of endometrial samplings were done and clinical correlation made.

Results

This study comprised 780 endometrial samples from AUB. The predominant histological pattern observed was proliferative pattern 428(54.87%) followed by secretory phase 174(22.30%),endometrial hyperplasia without atypia 49(6.28%),pill endometrium 34(4.35%),atrophic endometrium 32(4.10%),endometrial carcinoma 28(3.58%),inadequate sample 17(2.17%), Polyp 13(1.66%), endometrial hyperplasia with atypia 3(0.38%) and tuberculous endometritis 2(0.24%).

Table 1: Age wise distribution of endometrial samplings in AUB

Age in years	No. Of cases	Percentage
20-30	96	12.30%
31-40	316	40.51%
41-50	282	36.15%
51-60	62	7.94%
61-70	17	2.17%
>70	7	0.89%

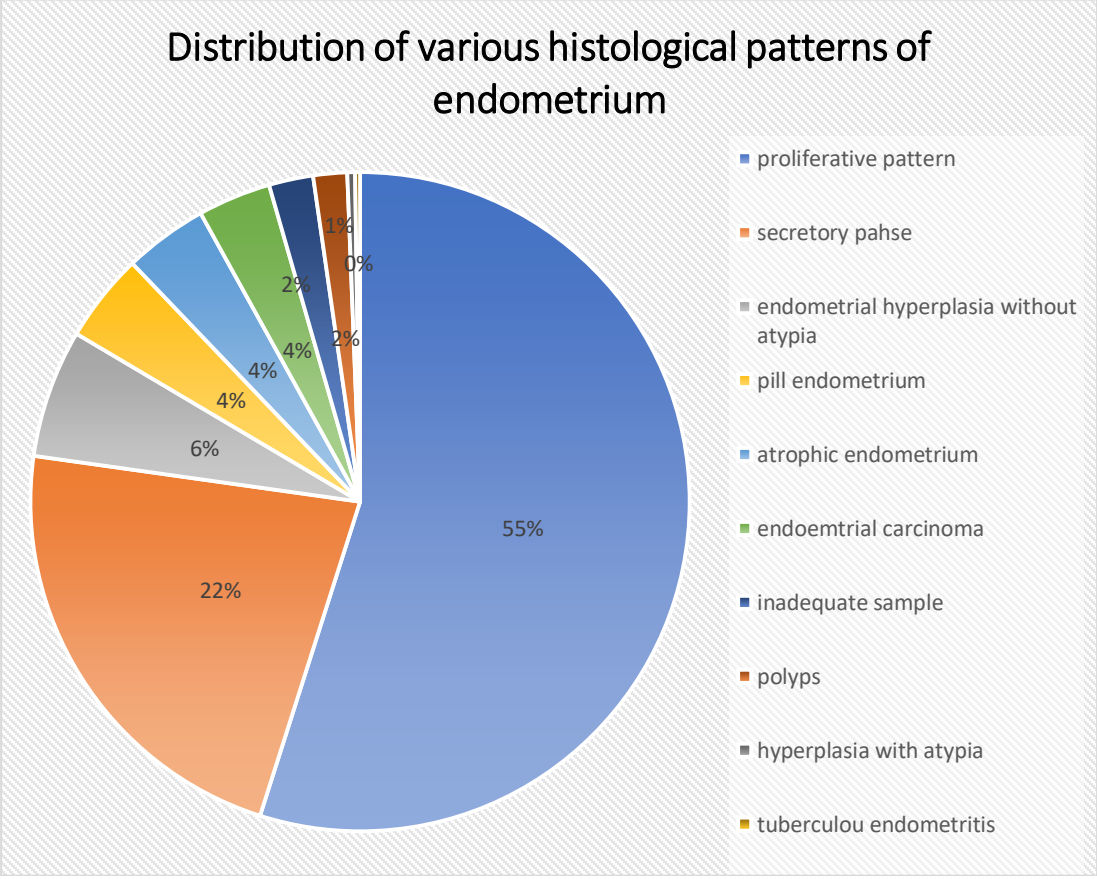
In our study most of the endometrial samples were between 31 – 40 years of age.

Table 2: Distribution of cases of abnormal uterine bleeding with isolated endometrial causes according to age group

		Age group in years					
S. No.	**Histopathology**	**20-30**	**31-40**	**41-50**	**51-60**	**61-70**	**>70**
1.	Proliferative endometrium	64	192	153	17	2	-
2.	Secretory endometrium	27	76	63	8	-	-
3.	Endometrial hyperplasia without atypia	-	14	25	8	2	-
4.	Pill endometrium	5	15	13	1	-	-
5.	Non secretory atrophic endometrium	-	4	14	9	3	2
6.	Endometrial carcinoma	-	2	2	14	6	4
7.	Inadequate	5	33	41	28	12	7
8.	Polyp	-	4	4	3	2	-
9.	Endometrial hyperplasia with atypia	-	1	-	1	1	-
10.	Tuberculous endometritis	-	2	-	-	-	-

Uterine bleeding was commonly seen amongst 31 to 40 years of age group and predominant pattern noted was proliferative pattern followed by secretory endometrium.

Among the specimens obtained for histopathological examination of the endometrial samples ,629 samples were obtained from dilatation and curettage and rest of 151 samples were obtained from hysterectomy specimens.



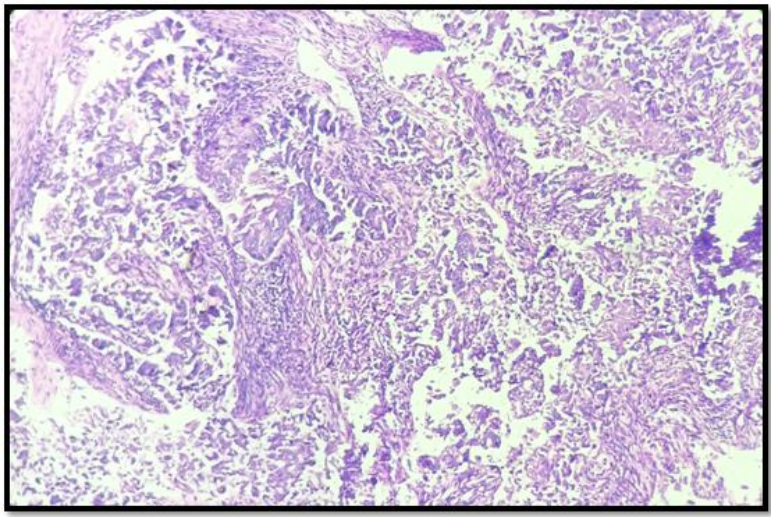


Fig. 1: H&E image of endometrial carcinoma(X100)

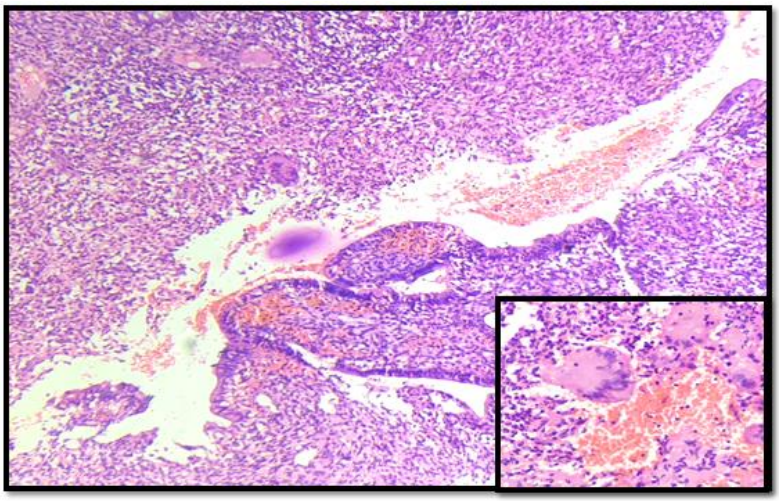


Fig. 2: H&E image of tuberculous endometritis showed langhans type of giant cells(X100)

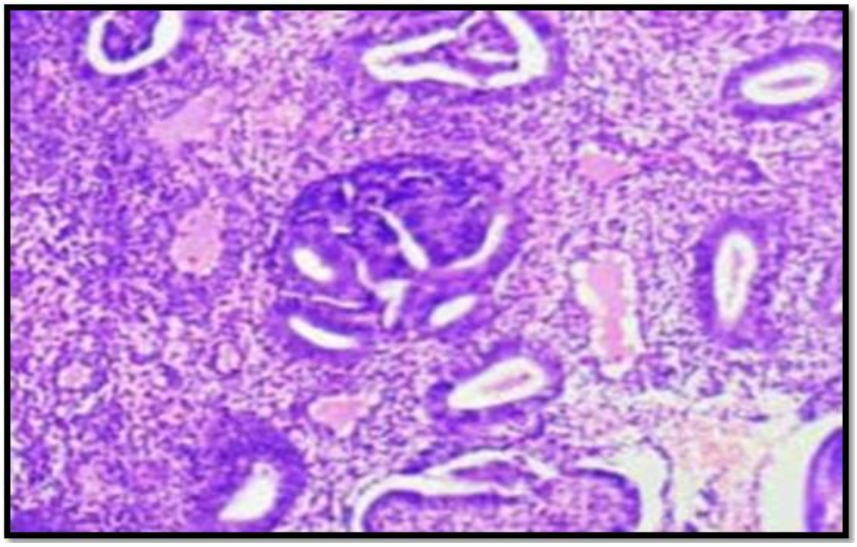


Fig. 3: H & E image of endometrial hyperplasia showed back to back arrangement of glands with scanty stroma (X400)

Discussion

AUB accounts for almost 25% gynecological operation and 20% of outpatient visits[5]. In the study we have studied the histopathology of endometrium to identify the endometrial causes and also observe the incidence of various pathologies in different age groups and their relation to parity.

In our study of 780 cases the peak incidence was seen among the age groups of 31-40 years(316 cases,40.51%)it is compared with studies done by Sharma K et al[6](37.26), Singh s et al[7](34%), Punitha R.D et al(48.70%),Samal R et al[8], Bindroo S et al[9](43.2%).Proliferative pattern is the dominant morphological pattern in our study and it is compared to the study by Singh s et al[6] but the incidence has been reported high 54.87% in our study.

In our study, the secretory phase was the next common histological pattern 174 (22.30%). Our incidence was compared to the study of Rajagopal et al[10]. In our study pill endometrium was in 34(4.35%) of cases. Our study was compared with the study of Rajagopal et al[10]. Majority of cases in the present study showed normal cycling patterns of endometrium comprising of proliferative,secretory and atrophic endometrium.

It is of critical importance for pathologists to diagnose endometrial hyperplasia and the precursors of endometrial carcinoma. The overall risk of progression of endometrial hyperplasia to malignancy is 5-10%.

In our study, endometrial hyperplasia without atypia was observed in 49(6.28%) and endometrial hyperplasia with atypia was observed in 3(0.38%) 90% of endometrial hyperplasia shows no atypia and 10% shows atypia as observed in the study by Sharma K et al[6]. Endometrial polyp is the benign outgrowth from the uterine cavity composed of glands, stroma and blood vessels[11]. In our study endometrial polyps was observed in 13(1.66%) was correlated with study by Sharma K et al[6] and was observed in perimenopausal age group. In our study atrophic endometrium was observed in 4.10%. The atrophic endometrium is due to estrogen deprival in the menopausal period and the rupture of dilated blood vessels beneath thin endometrium leads to abnormal uterine bleeding[12].The atrophic endometrium is commonly seen in post-menopausal age group and was correlated with study done by Prabha G et al[13].

In this study, endometrial carcinoma constituted only in 3.58% of cases. In our study endometrial carcinoma was seen in post-menopausal age group. Our study was correlated with study by Sajeetha et al[14] where endometrial carcinoma incidence was low.

In our study, inadequate sample constituted 2.17% of cases. This study was correlated with study by Sajeetha K et al[14]. In this study tuberculous endometritis incidence was very low 2(0.24%) of cases. There were presented with amenorrhea and common in reproductive age group. Correlated with study done by S.Gupta et al[15] and ElevarasanRPT et al[16].

Conclusion

Endometrial lesions vary according to the patient's age. Endometrial sampling by dilatation and curettage is an effective and reliable diagnostic test. Its interpretation can be quite challenging and also may show considerable interobserver variability. Dilatation and curettage reveal the endometrial patterns in various forms of AUB and also helps to exclude the presence of any organic pathology. Thus, histopathological evaluation of endometrium is especially indicated in women over the age of 35years to rule out preneoplastic lesions and malignancies. AUB significantly affects the quality of life of women and results in anemia.

Source of funding

No funding sources

Conflict of interest

None

References

1. Bhatta, S., & Sinha, A.. Histopathological study of endometrium in abnormal uterine bleeding. Journal of Pathology of Nepal, 2012;2(4), 297–300.
2. Sajitha K, Padma SK, Shetty K J, KishanPrasad H L, Permi HS, Hegde P. Study of histopathological patterns of endometrium in abnormal uterine bleeding. Chrismed J Health Res 2014;1:76-81
3. Munro MG, Critchley HO, Broder MS, Fraser IS; FIGO Working Group on Menstrual Disorders. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynaecol Obstet. 2011;113(1):3-13.
4. Sharma A, Dogra Y. Trends of AUB in tertiary centre of Shimla hills. J Midlife Health. 2013;4(1):67-68.
5. Goldstein SR. Menorrhagia and abnormal bleeding before the menopause. Best Pract Res Clin ObstetGynaecol. 2004; 18(1):59-69.
6. Sharma K,Rasania A, Clinicopathological Spectrum of Endometrial Biopsies In A Tertiary Care Center ,2019; 8(11): DOI : 10.36106/ijsr
7. Singh, S., Pandey, P., Agarwal, S., Swarn, K., & Singh, S. Spectrum of uterine lesions presenting as abnormal uterine bleeding in a rural north Indian population: a study from tertiary care center. International Journal of Research in Medical Sciences, 2017;4(8);3250-3254.
8. Samal R, Vaithy A, Shanmugasamy, Habeebullah S, Clinicopathological analysis of abnormal uterine bleeding in reproductive and post menopausal women in a tertiary care centre of south eastern part of India. Indian J ObstetGynecol Res 2020;7(1):66-70.
9. Bindroo, S., Garg, M., & Kaur, T. Histopathological spectrum of endometrium in abnormal uterine bleeding. International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 2018;7(9), 3633-3637.
10. Rajagopal, I., Thomas, B., & Rao, V. Endometrial pathology in abnormal uterine bleeding. International Journal of Research in Medical Sciences,2019; 7(10), 3762-3766.
11. Nijkang NP, Anderson L, Markham R, Manconi F. Endometrial polyps: Pathogenesis, sequelae and treatment. SAGE Open Med. 2019;7:2050312119848247.doi:10.1177/2050312119848247
12. Baral, R., &Pudasaini, S. Histopathological pattern of endometrial samples in abnormal uterine bleeding. Journal of Pathology of Nepal,2011; 1(1):13–16.
13. Prabha G,MurugesamM.Studyof histomorphological patterns of abnormal uterine bleeding on endometrial biopsies in a tertiary care center J Dent Med sci 2019:18(2):20-4.
14. R., Sajeetha, & Anuradha M. "Endometrial patterns in abnormal uterine bleeding: a retrospective study." International Journal of Reproduction, Contraception, Obstetrics and Gynecology 2017;6(11): 4966-4970.
15. Shalini gupta and pawangupta. Fronteers in immunology Review article front. Immunol, 2020.
16. ElevarasanRPT,ShruthiM,Shylaja S. Histopathological study of endometrium in abnormal uterine bleeding. An experience in a tertiary care center of rural south India, National journal of basic medical sciences. 2017;8(1):32-38.