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Original Research Article

Clinicopathological evaluation of abnormal uterine bleeding in peri menopausal women

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is a frequently encountered gynaecological complaint in perimenopausal women and also the most common cause of hysterectomy in their age group. The current study was carried out to evaluate various presentations of perimenopausal Abnormal uterine bleeding and to correlate with histopathological examination of the dilation and curettage (D&C) sample of endometrium.
Methods: A cross-sectional study was conducted from 2022 to 2024 at a tertiary care hospital in Imphal, among 190 abnormal uterine bleeding cases. Data were collected in a predesigned proforma and analysed using SPSS Version 21.0. Descriptive statistics were used to express the findings. Ethical approval was obtained and informed consent was taken.
Results: The mean age of the study subjects or participants was 45.67±5.58 years. The majority of the cases were aged 41-50 years, Hinduism dominated, educated up to 12th class, self-employed, and living in a joint family. Heavy uterine bleeding was the common presentation. The USG findings were 80.5% sensitive and 100% specific to diagnose leiomyomas; in adenomyosis, USG is more sensitive (100%) and specific (100%). Clinically, leiomyoma was the most common suspected cause of AUB; radiologically, 50% of leiomyomas and post-hysterectomy histopathological findings showed that 62.1% were leiomyoma, among which 98.9% were proliferative. Only 21% were adenomyosis. The endometrial pattern was 63.7% proliferative, 21.6% secretory, 14.7% disordered proliferative.
Conclusions: The abnormal uterine bleeding was common in middle-aged women and heavy bleeding was the common presentation. The proliferative leiomyomas are the major causes for AUB followed by adenomyosis.

Keywords: Abnormal uterine bleeding, Menopause, Leiomyoma, Adenomyosis

INTRODUCTION

Abnormal uterine bleeding (AUB) is any bleeding from the genital tract which is a deviation from normal menstrual cycle in quantity, frequency or cyclicity. It is a common disease in Gynaecology, accounting for 30-40% of cases outpatient department.[1,2] The endometrium is highly dynamic and normally undergoes cyclic rounds starting with proliferation, followed by differentiation, degradation, and rounding up by regeneration.[3,4] Perimenopause is the period 2-8 years preceding menopause and 1 year after the final menses according to the World Health Organisation (WHO).[4] However, a better practical definition is that perimenopause is the period of life beginning with menopausal transition and ending 12 months after the last menstrual period and may last for many years (2 to 8 years).[5] The International Federation of Gynaecology and Obstetrics (FIGO) defines the etiology of Abnormal uterine bleeding using the PALM-COEIN classification [Polyp, Adenomyosis, Leiomyoma,

Malignancy, Hyperplasia (structural causes); Coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic and Not yet classified (non-structural causes)] system.[1,6-9]

Abnormal uterine bleeding is responsible for about two third of all hysterectomies in the world. The most common cause of Abnormal Uterine Bleeding is Dysfunctional Uterine Bleeding (DUB) which has no organic cause.[7-9] An accurate method of determining whether AUB is functional or structural, one needs a minimally invasive accurate method. Dilation and curettage (D&C) under General Anaesthesia was once considered a gold standard investigation in the evaluation of AUB. It can, however, miss 2-6% of cases of cancer or hyperplasia.[5] Endometrial carcinoma, the most serious cause of uterine bleeding, is diagnosed in fewer than 10% of endometrial biopsies in women presenting with AUB, indicating that more than 90% of endometrial biopsies revealed benign findings.[6,10,11]

Abnormal uterine bleeding is a frequently encountered Gynaecological complaint in perimenopausal women and also the most common cause of hysterectomy in their age group. It is well accepted that various disease pathologies can be detected accurately by HPE. The current study was carried out to evaluate various presentations of perimenopausal Abnormal uterine bleeding and to correlate with histopathological examination of the D&C sample of endometrium.

METHODS

A cross-sectional study was conducted after obtaining ethical approval from the Institutional Research Board (IRB), Imphal, from December 2022 to May 2024 among the abnormal uterine bleeding cases in the Department of Obstetrics and Gynaecology, RIMS, Imphal.

The institute caters to 15000 patients per year on an OPD basis and admits around 6000 patients per year, and 3200 patients in the emergency. The hospital receives referrals from different districts of Manipur and neighboring states. The women in perimenopausal age above 45 years with a history of bleeding and who underwent hysterectomy were included in the study. Women with known history of coagulopathy, malignancy, intrauterine devices, abortion, on hormonal therapy vaginal, vulval or cervical causes of bleeding were excluded. A total of 190 sample size was calculated as per formula 4PQ/L2 at 95% confidence interval, where the allowable margin of error was considered as 7.12 The cases were collected in an OPD setting in the Antenatal clinic as per our convenience and recorded in a predesigned proforma which includes demographic profiles, medical history and histopathological finding details.

Collected data were entered in Microsoft Excel and analysed using IBM SPSS 21.0. Descriptive data were presented using percentages and proportions for variables like age (in years), height, weight, BMI, education, religion, socioeconomic status, occupation, history of tobacco use, OCP or other contraceptive use, gravida, parity, history of STD. Chi-square and Fisher's exact tests were applied to see the association between the grading of scores with patient factors. Informed written consent was taken from all the participants.

RESULTS

Total 190 cases of abnormal uterine bleeding were included in the study, which 13.7% of the total OPD attendees aged of the perimenopausal age group. The mean age of the study subjects or participants was 45.67±5.58 years, ranging from 32 to 55 years. The majority age group is 41-50 years (67.4%) followed by >50 years (17.9%).

Table 1: Sociodemographic profile of study participants (n=190).

Sociodemographic profile	N (%)
Age group (in years)	
<= 40	28 (14.7)
41-50	128 (67.4)
>50	34 (17.9)
Religion	
Hinduism	151 (79.5)
Christianity	19 (10.0)
Muslim	20 (20.5)
Occupation	
Employed	20 (10.5)
Self-employed	170 (89.5)
Educational level	
Can't read and write	17 (9.0)
Upto 5th standard	19 (10.0)
Upto 10th	45 (23.7)
Upto 12th level	76 (40.0)
Graduate and above	33 (17.3)
Family type	
Joint	160 984.2)
Nuclear	30 (15.8)

Table 2: Menstrual bleeding pattern (n=190).

Menstrual bleeding pattern	Frequency	Percent
Heavy menstrual bleeding	119	62.6
Prolonged menstrual bleeding	49	25.8
Intermenstrual bleeding	19	10.0
Frequent bleeding	3	1.6

The distribution of the participants by religion, where Hinduism or Sanamahism was the majority (79.5%), followed by Muslim (10.5%) and Christianity (10.0%). Only 10.5% were employed. Only 19% of the cases were educated below primary level and the majority belonged to the joint family (84.2%) (Table 1). The study demonstrated

that among the presentations, heavy menstrual bleeding was the commonest form of symptoms (62.6%), followed by heavy and prolonged bleeding (25.8%), intermenstrual bleeding (10.0%) and the least was frequent bleeding (1.6%) (Table 2). Among AUB cases, leiomyoma was the commonest form of AUB in both clinical examination and USG findings (50.0% respectively) followed by adenomyosis (21.1%), polyp 16.9% and 12.1% were bulky uterus (Table 3). Among the tumor cells, proliferative in nature was the commonest pathology (63.7%) followed by secretory (21.6%) and the least was disordered proliferative (14.7%) (Figure 1).

Table 3: Abnormal uterine bleeding USG findings (n=190).

USG findings	Frequency	Percent
Adenomyosis	40	21.1
Leiomyoma	95	50.0
Polyp	32	16.9
Bulky uterus	23	12.1

The study also found that the secretory cells were more in adenomyosis tumor (75.0%) but proliferative cells were more in leiomyomas (98.9%) and polyp (50%) and 74% of disordered proliferative cells were seen in a bulky uterus. (Table 4). The diagnostic accuracy was studied in the form sensitivity, specificity of the USG findings in comparison to histopathological findings shows that USG is 80.5% sensitive and 100% specific for leiomyoma; for adenomyoma 100% sensitive and specific (Table 5).

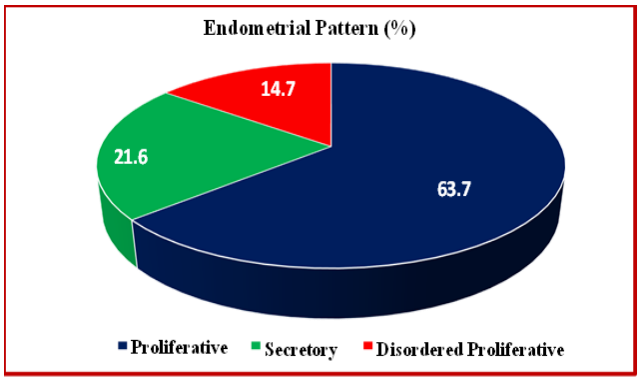

Figure 1: Distribution of the subjects by endometrial pattern (n=190).

Table 4: HPE findings in relation to ultrasonography findings (n=190).

USG findings	Frequency	Endometrial pattern		
		Proliferative	Secretory	Disordered proliferative
Adenomyosis	40	5 (12.5%)	30 (75%)	5 (12.5%)
Leiomyoma	95	94 (98.9%)	0 (0.0)	1 (1.1%)
Polyp	32	16 (50.0%)	11 (34.3%)	5 (13.7%)
Bulky uterus	23	6 (26%)	0 (0.0)	17 (74.0%)

Table 5: Diagnostic accuracy of USG diagnosis with HPE diagnosis of AUB (n=190).

USG findings	Histopathological examination report						
	Present	Absent	Total	Sensitivity	Specificity	PPV	NPV
Leiomyoma							
Present	95	0	95	80.5%	100%	100%	24.2%
Absent	23	72	95				
Adenomyosis							
Present	40	0	40	100%	100%	100%	100%
Absent	0	150	150				
Polyp							
Present	32	0	32	100%	100%	100%	100%
Absent	0	158	158				
Bulky uterus							
Present	0	23	23	0%	86.2%	100%	13.7%
Absent	23	144	167				

PPV: positive predictive value, NPV: Negative predictive value

DISCUSSION

The present study was conducted to evaluate clinical condition associated with peri menopausal bleeding of uterine origin and to evaluate histopathological changes in the endometrial biopsy, associated with these conditions.

In present study, the mean age was 45.67±5.58 years, age of participants ranges from (41-50 years: 67.4%), 79.5% are Hinduism, majority were educated up to 12th class, self-employed, living in joint family, obese (80.5%), parity of 3rd and 4th with majority of history of Heavy Menstrual Bleeding (62.6%). The above demographic findings are

similar to many previous studies. Jindal H et al found that the incidence of abnormal uterine bleeding between age groups 40-60 years is 81% and age group 50-60 years is 19%.[13] Similarly, Misra et al revealed that the mean age group of subjects was 44.05 years.[14] Pidugu et al also concluded that most common clinical presentation was heavy menstrual bleeding (HMB) seen in 96 cases (63.5%).[15] The mean age of the study population was 46.88±9.78 years as per Uhasai K et al.[16] Studies done by Gupta et al, Sinha et al and Jain et al support our study findings in terms demographics of the study participants.[17-19] In the present study, clinically leiomyoma was the most suspected cause of AUB (62.1%), radiologically 50.0% had leiomyomas, and post-hysterectomy histopathological findings show that 62.1% are leiomyoma only, followed by adenomyosis (21.0%), which were proliferative. The USG findings are 80.5% sensitive and 100% specific to diagnose leiomyomas; in the same way, adenomyosis is more sensitive (100%) and specific (100%). Kumari A et al[20] found that in 51.66% cases, the cause was non-organic (dysfunctional uterine bleeding) and among organic causes fibroid (28.88%) uterus was most common. Bulky uterus was found in 41.11% of cases and 43.33% had proliferative endometrium. As per Jindal H et al among the study population, USG reports showed two patients (4.10%) with polyps, seven patients (14.58%) with adenomyosis, 25 patients (52.08%) with leiomyomas, and 14 patients (29.16%) with malignancies.[13] However, Pidugu et al concluded that USG has good specificity for the diagnosis of AUB-Adenomyosis and AUB-Polyp but low sensitivity.[15] Ultrasound finding was leiomyoma in more than 73% subjects.[21] Proliferative pattern of endometrium remained the finding in most of the individuals.[20-21] Lotha L et al collaborated that ultrasonography (USG) is a highly sensitive tool for diagnosing intrauterine pathology.[22] The findings reveal that a fibroid uterus was the most common cause at 52.7%, followed by dysfunctional uterine bleeding (DUB) at 41.2%, adenomyosis at 4.7%, and uterine malignancy at 1.3%, consistent with our study results. As per Sudhamani S et al most of the patients were in the age group of 40-45 years (45%) with menorrhagia as the chief complaint and the bulk of the specimens were of total hysterectomy with bilateral salpingo-oophrectomy (43%).[23,24] Functional endometrial changes were the most common cause in 40-50 years age group but endometrial carcinoma was the main cause of bleeding in the 51-55 years group, indicating heightened occurrence of malignancy with increasing age.[22-24] Mishra J et al found that ultrasound identified leiomyomas in more than 73% of subjects. Sensitivity ranges from 67% to 100%.[18-25] and our findings are consistent with these results. Radhika K et al and Mirza et al showed in their studies that the diagnostic accuracy for fibroids using clinical and sonography methods was 85.7% and 92.3%, respectively.[26,27]

In the present study, participant enrolment was based on convenience sampling. Since only cases of abnormal uterine bleeding were included, the true incidence could not be calculated. There may be interobserver variation at the clinical diagnosis level and in the interpretation of ultrasound (USG) and histopathology (HPE) reports. The findings of the present study may not be generalizable due to the comparatively small sample size.

CONCLUSION

The present study concluded that the majority AUB cases among aged 41-50 years and heavy menstrual bleeding were the commonest presentation. The proliferative leiomyoma was the most common cause of AUB, followed by adenomyosis. The USG findings were 80.5% sensitive and 100% specific to diagnose leiomyomas; in adenomyosis, USG is more sensitive (100%) and specific (100%). Hence, there is an urgent need for all women to be educated regarding the basic signs and symptoms related to AUB so that they can interpret their symptoms and seek medical advice as early as possible. Awareness at the community level can not only reduce this time-lapse but also help in early management.

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REFERENCES

1. Elmaoğulları S, Aycan Z. Abnormal Uterine Bleeding in adolescents. Journal of clinical research in Paediatric Endocrinology. 2018;10(3):191.
2. Kumar P, Malhotra N. Abnormal and Excessive Uterine Bleeding. Jeffcoate's Principles of Gynaecology. 7th ed. Arnold. 2008:613-16.
3. Choudhary S, Berkley C, Warren M. Perimenopausal vaginal bleeding: Diagnostic evaluation and therapeutic options. Journal of women's health 2011;21(3):302-10.
4. McCluggage WG. My approach to the interpretation of endometrial biopsies and curettings, J Clin Pathol. 2006;59:801-12.
5. Verma D, Verma A. Histopathological correlation of abnormal uterine bleeding in perimenopausal women. International Journal of Reproduction, Contraception, Obstetrics and Gynaecology. 2016;5(7):2343-6.
6. Singh K, Agarwal C, Pujani M, Raychaudhuri S, Sharma N, Chauhan V, et al. A clinicopathological correlation of international federation of Gynaecology and Obstetrics's PALM–COEIN classification of abnormal uterine bleeding: Indian scenario. Journal of Mid-Life Health. 2019;10(3):147.
7. Mahapatra M, Mishra P. Clinicopathological evaluation of abnormal uterine bleeding. Journal of Health Research and Reviews. 2015;2(2):45.

8. Begum J, Samal R. A clinicopathological evaluation of postmenopausal bleeding and its correlation with risk factors for developing endometrial hyperplasia and cancer: A hospital-based prospective study. Journal of mid-life health. 2019;10(4):179.
9. Doddamani UG, Doddamani GB, Katageri G, Mallapur A. Clinicopathological correlation of endometrium in abnormal uterine bleeding. Sch J App Med Sci. 2014;2(1A):46-9.
10. Shukla S, Acharya N, Gadge A, Phatak S. Comparative study of transvaginal sonography and hysteroscopy for the detection of endometrial lesions in women with abnormal uterine bleeding in perimenopausal age group. Journal of South Asian Federation of Obstetrics and Gynaecology. 2018;10(3):155-60.
11. Samal R, Vaithy AS, Habeebullah S. Clinicopathological analysis of abnormal uterine bleeding in reproductive and post-menopausal women in a tertiary care center of South eastern part of India. Indian J Obstet Gynecol Res. 2020;7(1):66-70.
12. Bhosle A, Fonseca M. Evaluation and histopathological correlation of Abnormal Uterine Bleeding in perimenopausal women. Bombay Hosp J. 2010;52(1):69-72.
13. Jindal H, Bhandari S, Singh A, Raina A, Garg PK. Clinicopathological evaluation of abnormal uterine bleeding in perimenopausal female. International Journal of Clinical and Diagnostic Pathology 2024;7(1):18-21.
14. Mishra J, Nigam N, Rathod I. Study of histopathology of endometrium in perimenopausal women with abnormal uterine bleeding. International Journal of Reproduction, Contraception, Obstetrics and Gynaecology. 2023;12(9):2750-6.
15. Pidugu SS, Balla Sudha Rani. Clinicopathological Evaluation of Abnormal Uterine Bleeding In Perimenopausal Women. Asian Journal of Pharmaceutical and Clinical Research. 2023;16(12):260-3.
16. Uhasai K, Naik D, P R. Efficacy of MRI Over Ultrasound in Evaluation of Abnormal Uterine Bleeding with Histopathological Correlation. Cureus. 2023;15(5):e38560.
17. Gupta A, Rathore AM, Manaktala U, Rudingwa P. Evaluation and histopathological correlation of abnormal uterine bleeding in perimenopausal women. IJBAR. 2013;4(8):509-13.
18. Sinha K, Gurung P, Sinha HH, Bhadani PP. Study on abnormal uterine bleeding among adult women in a tertiary care hospital in Bihar, India. Int J Reprod Contracept Obstet Gynecol. 2018;7(8):3136-40.
19. Jain P, Arya SB, Pant H, Sinha M, Sah S, Goel R. To study the clinico- pathological correlation in abnormal uterine bleeding. Int J Clin Obstet Gynaecol. 2021:5:111-4.
20. Kumari A, Kumar R. Abnormal uterine bleeding in peri-menopausal age: An observational study. Indian J Obstet Gynecol Res. 2018;5(4):539-43.
21. Nair R, Mallikarjuna M. Clinical profile of patients with abnormal uterine bleeding at a tertiary care hospital. Int J Reprod Contracept Obstet Gynecol. 2015;4(6):175357.
22. Lotha L, Borah A. Clinicopathological evaluation of abnormal uterine bleeding in perimenopausal women. International Journal of Reproduction, Contraception, Obstetrics and Gynaecology. 2016;5(9):3072-5.
23. Sudhamani S, Sunila, Sirmukaddam S, Agrawal D. Clinicopathological study of abnormal uterine bleeding in perimenopausal women. J Sci Soc. 2015;42:3-6.
24. Padmaja VGJ, Quadri SSS, Kumar SO. Histomorphological Profile of Endometrium Perimenopausal Bleeding. IAIM, 2016; 3(7):255-9.
25. Mishra J, Nigam N, Rathod I. Study of histopathology of endometrium in perimenopausal women with abnormal uterine bleeding. Int J Reprod Contracep Obst Gynecol. 2023;12(9):2750-6.
26. Radhika K, Gomathy E. Clinico-pathological correlation of AUB patients undergoing hysterectomy in a rural tertiary care centre. Indian J Obstet Gynaecol Res. 2019;6(4):495-8.
27. Mirza T, Akram S, Mirza A, Aziz S, Mirza T, Mustansar T. Histpathological pattern of abnormal uterine bleeding in endometrial biopsies. J Basic Appl Sci. 2012;8(1):114–7.

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