Journal of Cardiovascular Disease Research
ISSN: 0975 -3583, 0976-2833, VOL 15, ISSUE 11, 2024

CORRELATION OF PALM COIEN CLASSIFICATION WITH POSTOPERATIVE DIAGNOSIS AT A TERTIARY CARE HOSPITAL IN SOUTHERN INDIA

Dr. Suneetha Maddi [1], Dr. Tanuja Muthyala[2*]
[1]Associate Professor, Department of Obstetrics and Gynecology, Santhiram Medical College, Nandyal, AP.
[2*]Associate Professor, Department of Obstetrics and Gynecology, Santhiram Medical College, Nandyal, AP.
Corresponding Author: Dr. Tanuja Muthyala
Associate Professor, Department of Obstetrics and Gynecology, Santhiram Medical College, Nandyal, AP.

Abstract

Introduction: Abnormal uterine bleeding (AUB) being a common gynecologic problem occurs in reproductive-age females should thoroughly be studied and diagnosed. There are various causes of AUB, can be divided in to broad two groups, structural and functional group of AUB. Structural group (due to some uterine pathology) include fibroids, endometrial polyps, adenomyosis, neoplasia. Whereas functional group includes (due to non-uterine cause) ovulatory dysfunction, coagulopathy, iatrogenic, endometrial, not known. AUB can be defined as any variation in frequency, regularity, duration, or volume from normal uterine bleeding and also includes intermenstrual bleeding (IMB) and unscheduled bleeding. It significantly increases physical as well as social morbidity among all non-gravid females.

Materials and methods: A cross-sectional study was conducted in the Department of Obstetrics and Gynecology at Santhiram Medical College and Hospital, Nandyal, for 1 year from June 2021 to May 2022. A total of 302 perimenopausal women with complaints of AUB in the age group of 41-50 years were included in the study. Detailed history was taken from the case sheets with regard to age, parity, socioeconomic status, menstrual history, pattern of abnormal menstrual bleeding, duration of symptoms, contraception history, family history, obstetric history, and associated comorbidities such as hypertension, diabetes, thyroid disorder, and history of previous treatment.

Results: 302 perimenopausal AUB cases who underwent hysterectomy were included in this study. About 63% were in the age group 41-45 years and 37% were in the age group 46–50 years. A highest number of AUB cases were seen in para 4 (63%). 54 patients were obese with body mass index >30 kg/m2 (18%), 20 patients had diabetes mellitus (6.6%), 32 patients had hypertension (10.6%) and 36 were hypothyroid (12%). The most common clinical presentation was HMB seen in 192 cases (63.5%) followed by heavy and prolonged menstrual bleeding in 15.3%.

Conclusion: In the present study, we classified the causes of AUB in perimenopausal women who underwent hysterectomy according to PALM COEIN classification and evaluated the causes clinically, sonologically, and pathologically. Leiomyoma was the most common cause

clinically, sonologically, and pathologically. AUB-O was the second most common cause clinically, whereas AUB-A is the second most common cause by sonology and histopathology. We attempted to correlate the structural causes of AUB sonologically and pathologically. Correlation was good for leiomyoma. USG has good specificity for the diagnosis of AUB-A and AUB-P but low sensitivity. Hence, it is important not to rule them out based on ultrasound findings alone.

Key Words: Abnormal uterine bleeding, fibroids, endometrial polyps, adenomyosis, leiomyoma.

INTRODUCTION

Abnormal uterine bleeding (AUB) being a common gynecologic problem occurs in reproductive-age females should thoroughly be studied and diagnosed. There are various causes of AUB, can be divided in to broad two groups, structural and functional group of AUB. Structural group (due to some uterine pathology) include fibroids, endometrial polyps, adenomyosis, neoplasia.[1] Whereas functional group includes (due to non-uterine cause) ovulatory dysfunction, coagulopathy, iatrogenic, endometrial, not known. AUB can be defined as any variation in frequency, regularity, duration, or volume from normal uterine bleeding and also includes intermenstrual bleeding (IMB) and unscheduled bleeding. It significantly increases physical as well as social morbidity among all non-gravid females.[2]

International federation of gynecology and obstetrics (FIGO) has suggested a new classification system based on etiology, known by the acronym PALM-COEIN in 2010 which has been modified in 2018 to standardize the terminology, investigations, diagnosis and management of AUB in non-pregnant women of reproductive age group.[3]

PALM represents structural causes of AUB-Polyp, Adenomyosis, Leiomyoma, Malignancy, and Hyperplasia. COEIN represents non-structural causes such as Coagulopathy, Ovulatory dysfunction, Endometrial, Iatrogenic, and Not yet classified. The most common presentation of AUB is heavy menstrual bleeding (HMB), which is a major concern for many women, frequently resulting in referral for hysterectomy. The treatment of AUB includes medical management, endometrial ablative procedures, polypectomy, myomectomy, and hysterectomy as the last resort. Hysterectomy is one of the most commonly performed surgeries worldwide.[4]

The diagnosis of AUB can be done clinically, by imaging and by histopathology. There might be a variation between clinical, sonological, and histopathological diagnosis.[5]

The aim of this study is to analyze the demographic profile, risk factors of AUB in perimenopausal women, to classify the causes of AUB based on PALM-COEIN classification, and to correlate the clinical and sonological findings with post-operative histopathology findings.

MATERIALS AND METHODS

A cross-sectional study was conducted in the Department of Obstetrics and Gynecology at Santhiram Medical College and Hospital, Nandyal, for 1 year from June 2021 to May 2022.

A total of 302 perimenopausal women with complaints of AUB in the age group of 41-50 years were included in the study. Detailed history was taken from the case sheets with regard to age, parity, socioeconomic status, menstrual history, pattern of abnormal menstrual bleeding, duration of symptoms, contraception history, family history, obstetric history, and associated comorbidities such as hypertension, diabetes, thyroid disorder, and history of previous treatment.

General, systemic, and gynecological examinations were performed and a provisional diagnosis was made. Ultrasonography was performed and structural causes of AUB (PALM) were excluded from the study.

The findings of laboratory investigations and ultrasonography were recorded. All structural causes (PALM) were excluded by clinical examination and sonology. COEIN group is suspected after excluding the PALM group. Endometrial biopsy was performed for all the patients above 45 years and some patients between 41 and 45 years with risk factors by endometrial sampling with pipelle's curette or Dilatation and curettage or under hysteroscopic guidance and the reports were collected. Hysterectomy was performed and operative findings were noted in the study. Report of hysterectomy specimens was collected and the final diagnosis was made. Clinical findings, sonological findings, and histopathology reports were evaluated and correlated.

Inclusion criteria

Women in the age group 41–50 years with AUB who underwent hysterectomy.

Exclusion criteria

Women who did not require a hysterectomy, post-menopausal women, and women with cervical lesions, and adnexal tumors were excluded from the study.

Statistical analysis: Qualitative variables were represented with frequency and percentage. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) were calculated.

RESULTS

302 perimenopausal AUB cases who underwent hysterectomy were included in this study. About 63% were in the age group 41–45 years and 37% were in the age group 46–50 years. A highest number of AUB cases were seen in para 4 (63%) as shown in Table 1.

54 patients were obese with body mass index >30 kg/m2 (18%), 20 patients had diabetes mellitus (6.6%), 32 patients had hypertension (10.6%) and 36 were hypothyroid (12%). The most

common clinical presentation was HMB seen in 192 cases (63.5%) followed by heavy and prolonged menstrual bleeding in 15.3% (Table 2)

The most common clinical presentation was HMB seen in192 cases (63.5%) followed by heavy and prolonged menstrual bleeding in 15.3% (Table 2).

Parity	No of cases	Percentage
Nulliparous	20	6.6
Para 1	44	14.5
Para 2	190	63
≥ Para 3	48	15.9

Table 1: Parity distribution

Menstrual pattern	No of cases	Percentage
Heavy menstrual bleeding	192	63.5
Heavy and prolonged menstrual bleeding	46	15.3
Inter menstrual bleeding	40	13.3
Frequent bleeding	24	8

Table 2: Distribution of cases based on menstrual pattern

Diagnosis	No of cases	Percentage
AUB--P	10	3.3
AUB-A	44	14.6
AUB-L	130	43
AUB-O	80	26.5
AUB-E	38	12.6

Table 3: Distribution of cases as per clinical diagnosis

Diagnosis	No of cases	Percentage
AUB-P	16	5.3
AUB-A	54	17.9
AUB-L	144	47.6
AUB-M	18	6
Normal uterus	20	6.6
Bulky uterus	50	16.6

Table 4: Distribution of cases as per ultrasound findings

Endometrial pattern	No of cases	Percentage
Proliferative	66	55
Secretory	28	23.33
Disordered proliferative	4	5
Hyperplasia without atypia	6	5
Hyperplasia with atypia	4	3.33

Endometrial polyp	8	6.67
Inadequate sample	4	3.33

Table 5: Distribution of cases as per endometrial biopsy (n=60)

Diagnosis	No of cases	Percentage
AUB-P	24	7.95
AUB-A	66	21.85
AUB-L	146	48.34
AUB-M	12	3.98
AUB-O	42	13.9
AUB-E	12	3.98

Table 6: Distribution of cases as per post-hysterectomy histopathology report

Clinically PALM component accounted for 61% of cases and the COEIN component accounted for 39% of cases as shown in Table 3. Over all AUB-L accounted for the highest number of cases (43%), followed by AUB-O in 26.5% of cases. AUB-P accounted for the least number of cases (3.3%).

As shown in Table 4, Ultrasonographically, PALM component was detected in 76.8% of cases (Table 4). 144 (47.6%) cases were leiomyoma, 54 (17.9%) cases were Adenomyosis, 16 (5.3%) cases were endometrial polyp, 18 (6%) cases were endometrial hyperplasia and 50 (16.6%) cases were diagnosed as a bulky uterus. The uterus is normal in 20 cases (6.6%).

Endometrial biopsy was done in 120 cases and Table 5 shows the different endometrial patterns as per pre-operative endometrial biopsy report.

DISCUSSION

In this study, 302 peri-menopausal hysterectomized women were analyzed. Most of them are between 41 and 45 years of age (63%) which was coherent with the study conducted by Daga and Phatak and the highest number of women were para 2 (63%). This finding was comparable to the study of Daga and Phatak and Mohammed and Prejisha. The most common bleeding pattern was HMB in 63.5% of women similar to the study done by Jain *et al*. (62%) and Singh (67.8%).[6]

Clinically PALM component accounted for 61% of all the cases. AUB-L was the most common diagnosis in 43% of cases followed by ovulatory dysfunction (AUB-O) in 26.5% of cases and AUB-A in 14.6% of cases. Ovulatory disorders were the most common cause of AUB in the COEIN component which was similar to the study by Mishra and Sultan.[7] In perimenopause, ovulatory disorders are common as chronic anovulation due to derangement of hypothalamo-pituitary-ovarian axis causes heavy and irregular menstrual bleeding. AUB-E is considered diagnosis of exclusion where AUB presents as cyclical HMB without any identifiable cause. AUB-O is the second most common diagnosis clinically. However, less number of cases were diagnosed by histopathology as AUB-O and AUB-E similar to the study done by Singh *et al*.[8]

Bulky uterus was the sole finding in 50 cases on ultrasound which were clinically diagnosed as AUB-O and AUB-E. Out of these, histopathology revealed normal myometrium in 34 cases, Adenomyosis in five cases, fibromyoma changes in three cases, endometrial hyperplasia in one case, and endometrial polyp in one case. HPE of endometrium showed proliferative endometrium in 166 cases (55%), secretory endometrium in 100 cases (33%), endometrial polyp in 24 cases, and endometrial hyperplasia in six cases. A higher incidence of proliferative endometrium was observed in our study which is compatible with the study of Khan *et al*. (46.6%).[9]

Hyperplasia without atypia was the dominant finding in four out of six cases and two were hyperplasia with atypia. Sonologically nine cases were identified as thickened endometrium out of which two turned out as endometrial polyp and five were confirmed by histopathology. All the eight cases of endometrial polyp on USG were confirmed histologically. USG was able to suggest endometrial polyp with a sensitivity of 66%, specificity of 100%, PPV of 100%, NPV of 97.2%, and AUB-M with a sensitivity of 83.3%, and specificity of 97.2%. Uhasai *et al*. reported a sensitivity of 66% for endometrial polyp which is similar to our study and a higher sensitivity for AUB-M (100%).[10]

CONCLUSION

In the present study, we classified the causes of AUB in perimenopausal women who underwent hysterectomy according to PALM COEIN classification and evaluated the causes clinically, sonologically, and pathologically. Leiomyoma was the most common cause clinically, sonologically, and pathologically. AUB-O was the second most common cause clinically, whereas AUB-A is the second most common cause by sonology and histopathology. We attempted to correlate the structural causes of AUB sonologically and pathologically. Correlation was good for leiomyoma. USG has good specificity for the diagnosis of AUB-A and AUB-P but low sensitivity. Hence, it is important not to rule them out based on ultrasound findings alone.

REFERENCES

1. Palwade JM, Borole CS. A study of causes of abnormal uterine bleeding with respect to FIGO classification in the patients at perimenopausal age.Int Med J. 2016;3(11):5.
2. Sun Y, Wang Y, Mao L, Wen J, Bai W. Prevalence of abnormal uterine bleeding according to new International Federation of Gynecology and Obstetrics classification in Chinese women of reproductive age: a cross-sectional study. Medicine (Baltimore). 2018;97(31):e11457.
3. Prentice A. When does heavy flow merit treatment? Practitioner. 2000;244:174-9.
4. Jones HW, Rock JA, Te Linde's Operative gynecology, 11th ed. 2015:555.
5. Singh S, Yadav P, Rani R, Verma U. Diagnostic approach in perimenopausal women with abnormal uterine bleeding. J SAFOMS. 2014;2(1):12-4.

6. Mishra D, Sultan S. FIGO's PALM-COEIN Classification of abnormal uterine bleeding: a clinico-histopathological correlation in Indian setting. J Obstet Gynecol India. 2017;67(2):119-25.
7. Sethi B, Dhaded AV, Mathur PR. Dysfunctional uterine bleeding. J Obstet Gynecol India.2002;52(3):87-9.
8. Munro MG, Critchley HOD, Broder. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynecol Obstet. 2011;113:3.
9. Verma U, Garg R, Singh S, Yadav P, Rani R. Diagnostic Approach in Perimenopausal Women with Abnormal Uterine Bleeding. J South Asian Fed Menopause Soc. 2014 Jan 1;2:12-4.
10. Kumar S. Clinicopathological study of abnormal uterine bleeding in North Indian patients. Asian J Biomed Pharma Sci. 2016;6(53):50-1.