Role of hysteroscopy in categorization of abnormal uterine bleeding in a multispecialty hospital in Bahrain

Anita Huparikar,[1] Silky Kothiwal,[1] Sai Ashrita Kanala,[2] Halah Saeed Ahmed Habib,[1] Butchi Raju Akondi[3]

[1]Department of Obstetrics and Gynecology, Bahrain Specialist Hospital, Manama, Kingdom of Bahrain; [2]Department of Obstetrics and Gynecology, Gandhi Medical College, Secunderabad, India; [3]Department of Clinical Pharmacy and Pharmacology, Ibn Sina National College for Medical Studies, Jeddah, Saudi Arabia

ABSTRACT

Abnormal uterine bleeding is a broad term involving various irregularities of the menstrual cycle. Previously, various terms were used to define abnormalities in menstrual bleeding. To create a universally accepted system of nomenclature, the Federation of Obstetrics and Gynecology proposed the new terminology PALM-COIEN. The current study aims to classify cases of abnormal uterine bleeding as per PALM-COIEN. It is a retrospective, observational study using the data from 110 patients, who underwent hysteroscopic evaluation and endometrial biopsy and were categorized based on PALM-COIEN. Patients were grouped under these categories after detailed history, examination, investigations, hysteroscopic findings, and histopathology. Results showed that polyp was the commonest group (n=45, 40.9%) in our study, which was followed by leiomyoma (n=30, 27.27%), ovulatory disturbances (n=28, 25.45%), adenomyosis (n=5, 4.54%), malignancy (n=2, 1.81%) respectively. In conclusion, hysteroscopic evaluation is a simple and useful tool to find out the structural pathologies of PALM-COIEN classification. Further histopathological confirmation of clinical diagnosis can enhance the diagnosis and treatment modalities.

Correspondence: Sai Ashrita Kanala, Department of Obstetrics and Gynecology, Gandhi Medical College, Secunderabad, India.
E-mail: anitakanala.ak@gmail.com

Key words: abnormal uterine bleeding; hysteroscopy; PALM-COIEN; polyp; leiomyoma.

Conflict of interest: the authors declare no potential conflict of interest.

Funding: none.

Ethical approval and consent to participate: since the research was a retrospective study, ethical approval was not needed.

Availability of data and material: data and materials are available by the authors.

Informed consent: the manuscript does not contain any individual person's data in any form.

Received: 11 January 2024.
Accepted: 15 January 2024.

Publisher's note: all claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article or claim that may be made by its manufacturer is not guaranteed or endorsed by the publisher.

©Copyright: the Author(s), 2024
Licensee PAGEPress, Italy
Italian Journal of Medicine 2024; 18:1692
doi:10.4081/itjm.2024.1692

This work is licensed under a Creative Commons Attribution NonCommercial 4.0 License (CC BY-NC 4.0).

Introduction

Abnormal uterine bleeding (AUB) is a broad term that involves irregularities in the menstrual cycle. It is defined as bleeding from the uterine corpus that is abnormal in regularity, volume, frequency, or duration and occurs in the absence of pregnancy.[1,2] A normal menstrual cycle has a frequency of every 24-38 days lasting 2-7 days with an amount of 5-80 milliliters of blood loss.[2] Almost 1/3 of women experience AUB in their lifetime. It is more common at menarche and years preceding menopause.

Previously various terms like oligomenorrhoea, polymenorrhoea, metrorrhagia, dysfunctional uterine bleeding, *etc*., were used. The Federation of Obstetrics and Gynecology proposed the new terminology formed by the acronym PALM-COIEN after consensus with clinicians-investigators from 6 continents over 17 countries.[1] This classification comprises 9 different etiologies commonly causing AUB. Among them, the first four represent structural abnormalities (PALM, polyp, adenomyosis, leiomyoma & malignancy) and the last 5 are non-structural entities (COIEN, coagulation disturbances, ovulatory bleeding, iatrogenic, endometrial, and not-yet classified).[1]

AUB can also be classified depending on the duration as acute and chronic. Acute AUB excessive bleeding requires immediate intervention to prevent further blood loss. Acute abnormal uterine bleeding can occur on its own or superimposed on chronic AUB. Chronic AUB refers to menstrual irregularities for more than 6 months.[3] The current study aims to classify cases of AUB as per PALM-COEIN. The two main objectives of the study are to find the role of hysteroscopy in the diagnosis and classification of abnormal uterine bleeding and to compare clinical, ul-

Non-commercial use only

trasound, and hysteroscopic findings with histopathological diagnosis of AUB.

Materials and Methods

This is a retrospective, observational study that was carried out in Bahrain Specialist Hospital, Kingdom of Bahrain, for the past three years (from 1st September 2021 to 31st August 2023) after analyzing medical records of women who had hysteroscopy for irregular uterine bleeding in Bahrain Specialist Hospital.

The outcomes were assessed using many criteria, including presenting complaints, age, concomitant medical disorders, obesity, hysteroscopic findings, and histology of the sample.

We had 143 women in our research who had hysteroscopies for varied reasons between September 2021 and August 2023.

The inclusion criteria for abnormal uterine bleeding were met by 110 women. Finally, the results were calculated and tabulated by parameter.

Inclusion criteria

The inclusion criteria were the following: i) women age group 20-55 years of age; ii) all women presenting to clinic with complaints of AUB for more than 3 episodes – undergoing endometrial evaluation by hysteroscopy; iii) women with diagnosed structural pathologies who came for hysteroscopy procedures.

Exclusion criteria

The exclusion criteria were the following: i) women with AUB less than 20 years age and more than 55 years of age; ii) bleeding associated with pregnancy or its complications; iii) postmenopausal bleeding; iv) hysteroscopy is done for evaluation of female infertility; v) cervical causes of abnormal bleeding.

Statistical analysis

Data was analyzed and descriptive statistics were presented as frequencies and percentages.

Results

In our study, a total of 143 women were posted for hysteroscopy out of which 110 women met the inclusion criteria. All these were placed in the categories of PALM-COEIN after confirming the hysteroscopic and histopathological findings.

Age

As per our study, most of the women suffering from AUB were associated with the age group 40-50 (n=74), and the least were in the younger age group (20-30) (n=4). We had set a cut-off age of 55 years or cessation of menstruation for more than 1 year as menopause. We did not include puberty menorrhagia in our study as the causes and management are different for this group. Hence, we included only women with more than 20 years in our study (Table 1).

Presenting complaint

It was observed that most of the women presented with heavy menstrual bleeding, which was defined as excessive bleeding (more than 80 ml) or duration (more than 5 days) as per definition (Figure 1).[4] This was followed by women complaining of pain during menstruation (dysmenorrhea). The above two symptoms were commonly seen in women suffering from leiomyomas and adenomyosis.

In a few women with polyps, prolonged bleeding or bleeding in between periods, called intermenstrual bleeding,[4] was observed. Postcoital bleeding was noted in a minority of women where polyps extended to the external os. Cervical lesions were excluded as they are not a part of AUB.

It was noted that the 2 or 3 symptoms often co-existed in more than 50% of women and hence, they were all grouped under the nomenclature AUB (Table 2).

Obesity

Obesity is a major contributory factor for heavy menstrual bleeding. In our study, the majority of women had normal body mass index (BMI) (21-24.9%), followed by overweight women (25-29.9%), and the least were underweight (Table 3, Figure 2).

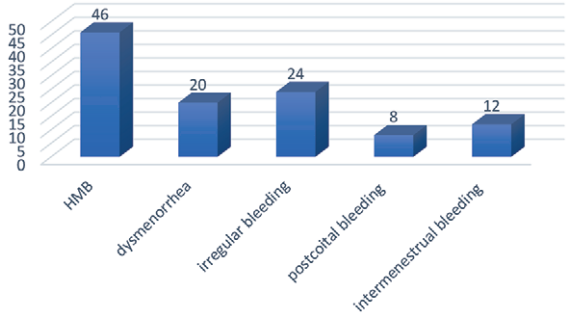

Figure 1. Bleeding pattern among the patients.

Table 1. Age of women subject of the study.

Serial number	Age group	Number of patients	Percentage
1	20-30	4	3.63
2	30-40	20	18.18
3	40-50	74	67.27
4	50-55	12	10.90
Total		110	100

Non-commercial use only

Comorbid conditions

High BMI was the major factor associated with up to 40% of women. Diabetes Mellitus (Type II) and hypertension were seen in equal numbers. Most of these women had 2 or 3 of these conditions which further raised their risk for Endometrial malignancies and hence they were subjected to hysteroscopic endometrial biopsies. Hypothyroidism was also seen in up to 40% of women.

After hysteroscopic evaluation, endometrial samples were taken from suspicious areas. Wherever we found polyps or sub-mucous myomas (grade 0 and 1), operative hysteroscopy was done and samples were sent for histopathological evaluation (Table 4).

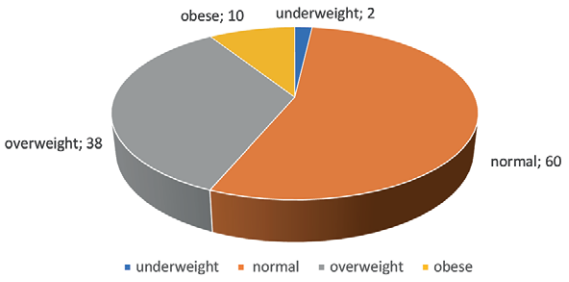

Figure 2. Classification of patients based on their body weight.

Histopathology report

After receiving histopathology reports, a correlation was made between clinical diagnosis, hysteroscopic findings, and histopathology (Table 5).

In women with secretory endometrium with no structural abnormality and no systemic diseases, a diagnosis of ovulatory disturbance was made and they were classified accordingly.

Discussion

In our study, we noticed that most of the women were between 40 and 50 years old (n=74, 67%) group which was comparable to the study done by Goel and Rathore (44%) and Tater *et al*. (92%).[5,6]

The most common presenting complaint was heavy menstrual bleeding (n=46,41.8%) followed by irregular bleeding (n=24,21.8%) which was similar to the study done by Goel and Rathore (67%) and (28%) and in Tater *et al*. (48% and 22%).[5,6]

Associated comorbidities – mainly obesity – were found in (43%) of women and thyroid disorders in (23.6%) of women as compared to the studies by Goel and Rathore (9.8% and 4.7%). These high figures could be due to geographical & and racial differences considering the differences in their food habits.[5,7]

In studies done by Gouri *et al.*,[8] and Tater *et al.*,[6] ovula-

Table 2. Women presenting complaints.

Serial number	Bleeding pattern	Number of cases	Percentage
1	Heavy menstrual bleeding	46	41.81
2	Dysmenorrhea	20	18.18
3	Irregular bleeding	24	21.81
4	Post-coital bleeding	8	7.27
5	Intermenstrual bleeding	12	10.9
Total		110	100

Table 3. Morphological distribution of disease. Correlation between body mass index and abnormal uterine bleeding.

Serial number	Body mass index	Number of cases	Percentage
1	Underweight	2	1.81
2	Normal	60	54.54
3	Overweight	38	34.54
4	Obese	10	9.09
Total		110	100

Table 4. Associated comorbidities.

Serial number	Associated comorbidity	Number of cases	Percentage
1	Diabetes mellitus	40	36.36
2	Obesity	40	36.36
3	Thyroid disorders	26	23.63
4	Hypertension	30	27.27
5	Others	16	14.54

Non-commercial use only

Table 5. Results of histopathology reports.

Serial number	Structural pathology	Number of cases	Percentage
1	Polyp	45	40.90
2	Adenomyosis	5	4.54
3	Leiomyoma	30	27.27
4	Malignancy	2	1.81
5	Ovulatory	28	25.4
Total		110	100

tory dysfunction was the leading cause of AUB (27% and 30% respectively). In a study done by Quereshi and Yousuf and Goel and Rathore,[7,9] leiomyoma was the commonest pathology (25% and 35% respectively). In contrast to our study, we found polyps (n=45, 40.9%) as the most common cause, followed by leiomyoma (n=30,27%) and ovulatory disturbance (n=28, 25.45%). Hyperplasia or malignancy was seen in only (n=2, 1.8%) of women in contrast to a study done by Goel and Rathore (8%).

Correlation between clinical (provisional) diagnosis, hysteroscopy finding, and histopathological diagnosis showed almost 100% correlation in polyps and myomas, comparable to the study of Goel and Rathore, but only 70% in ovulatory disorders, which was in contrast with the research made by Goel and Rathore (28%).[5,7] There were no cases of iatrogenic or coagulation disturbances in our study.

Conclusions

AUB comprising a set of bleeding disorders is a common clinical manifestation in women of the perimenopausal age group. A newer etiological classification of PALM-COIEN is useful to standardize definitions, diagnose, and treat women with acute and chronic AUB.

Hysteroscopy is an effective tool to study and treat the structural abnormalities causing AUB which comprises of PALM part. Whereas to diagnose COIEN, histopathology, and blood investigations are often needed.

PALM-COIEN classification, however, needs frequent modifications and constant research. A few categories presented under the "not yet classified" group need to find their suitable group by further research on this topic.

References

1. Munro MG, Critchley HOD, Broder MS, Fraser IS. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynecol Obstet 2011;113:3-13.
2. Committee on Practice Bulletins—Gynecology. Practice bulletin no. 128: diagnosis of abnormal uterine bleeding in reproductive-aged women. Obstet Gynecol 2012;120: 197-206.
3. Wouk N, Helton M. Abnormal Uterine Bleeding in Premenopausal Women. Am Fam Physician 2019;99:435-43.
4. ACOG Practice Bulletin No. 108: Polycystic ovary syndrome. Obstet Gynecol 2009;114:936.
5. Goel P, Rathore SB. PALM-COIEN FIGO classification for diagnosis of Abnormal Uterine Bleeding: Practical utility of same at a tertiary care center in North India. Sch J Appl Med Sci 2016;4:2771-3.
6. Tater A, Jain P, Sharma KN. Categorization of patients with abnormal uterine bleeding according to PALM-COIEN FIGO classification. Int J Reprod Contracept Obstet Gynecol 2019;8:4783-5.
7. Goel P, Rathore SB. Categorization of patients with abnormal uterine bleeding according to PALM-COIEN FIGO Classification. Sch J App Med Sci 2016;4:2771-3.
8. Gouri SR, Lakshmi PV, Rani NG, Kumar NA. Categorization of the causes of Abnormal Uterine Bleeding according to PALM-COIEN classification. Int J Sci Stud 2016;104-6.
9. Quereshi F, Yusuf AW. Distribution of causes of AUB using the new FIGO classification System. J Pak Med Assoc 2013;63:974.

Non-commercial use only