FIGO'S palm- coein classification of abnormal uterine bleeding: a clinico- histopathological correlation in rural setting

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Abstract

Background The International Federation of Gynecology and Obstetrics (FIGO) discovered a universally acceptable classification system PALM COEIN. This acronym PALM COEIN was introduced in 2011. PALM denoting structural causes and COEIN describing non structural causes of AUB. In reproductive age group and particularly during menopause AUB is very common.

Aim To study the clinico- histopathological correlation of abnormal uterine bleeding with the FIGO'S PALM-COEIN classification of abnormal uterine bleeding in rural setting.

Materials and Methods Patients in perimenopausal age (40 years and above till one year beyond menopause) with abnormal uterine bleeding who were willing to participate in study were included and patients who were not ready to get enrolled in study were excluded. Detailed history taken and clinical examination done after that clinical diagnosis was made as per PALM COEIN classification. All essential investigations, endometrial sampling and hysterectomy specimens were assessed by histology. A clinicopathological correlation was analyzed statistically.

Results 181 women with complaints of abnormal uterine bleeding were included in the study. 95% of the women were below 50 years of age. Majority of women presented with heavy menstrual bleeding (72.92%) and 27.7% presented with intermenstrual bleeding. Distribution of cases based on clinical diagnosis showed that 64.64% cases belonged to PALM and 35.35% cases belonged to COEIN group respectively. It was found that leiomyoma was the major cause 84/181 (46.41%) overall and 84/117 (71.79%) in the PALM group, whereas ovulatory disorders were the major cause from COEIN group, accounting for 52/64 (81.25%) in the COEIN group. Distribution of cases based on histopathological diagnosis, showed that 65.19% cases belonged to PALM and 34.8% cases belonged to COEIN group respectively.

Conclusion In our study, the most common pathology identified was leiomyoma (29.28%) histopathologically. The clinohistopathological correlation of the PALM

component was significant with a p value of 0.0001, which suggests the need of histopathological diagnosis for more accurate diagnosis with respect to PALM component.

Keywords: Abnormal uterine bleeding, PALMCOEIN classification ,Histopathology

Introduction

AUB is a frequent menstrual problem in 15 -25 % of women in reproductive age group and 50% in perimenopausal age group.(1,2,3).AUB is defined as bleeding from uterus which is abnormal in duration, frequency , volume and regularity occurring in absence of pregnancy . depending on duration of bleedingit is classified into acute and chronic .During Perimenopause most of the women have irregular menstrual cycles and defined as period of 2-5 years before menopause (4).The International Federation of Gynecology and Obstetrics working group on menstrual disorders has developed a classification system (PALM –COEIN) in 2011 for causes of AUB   in non-gravid women(5).This classification has nine groups arranged according to acronym PALM COEIN polyp, adenomyosis, leiomyoma, mal, malignancy and hyperplasia, coagulopathy, ovulatorydisfunction, endometrial , iatrogenic and not yet classified. PALM part of the classification indicates structural these may be assessed by imaging techniques and/or histopathology on the other hand COEIN part represents functional aspect (6).

 The terminologies like abnormal uterine bleeding, Menorrhagia, Metrorrhagia arenow replaced by abnormal uterine bleeding. (7)This PALM COEIN classification helps in correct diagnosis and proper management (8). FIGO suggest evaluation of endometrial tissue as a first line management in perimenopausal age group women with AUB. Endometrial testing on histology helps to identify exact cause of abnormal uterine bleeding, and to exclude malignancy. Clinical correlation and histopathological evaluation is essential as there is possibility of redistribution of category. (9,10,11). We conducted present study to establish a clinic-pathological correlation of various causes of AUB. In rural setting.

Material and methods

Prospective observational study was conducted in perimenopausal women (40 years and above till one year beyond menopause) with complaints of AUB admitted in the department of Obstetrics and Gynaecology, Acharya Vinobha Bhave Rural Hospital (AVBRH) Jawaharlal Nehru Medical College (J.N.M.C) Sawangi (Meghe), Wardha, Maharashtra for a period of one year after approval from the ethics committee .181patients with complaints of AUB who gave consent to participate in study were included in study. Patients who are not ready to get enrolled in study and who were below 40 years of age and beyond one year menopause. Were excluded from the study.

Methodology

Demographic details, menstrual history, obstetrics history and other history were noted. Then general, systemic and gynaecological examination done. per speculum and bimanual gynaecological evaluation done to know the size , consistency , position, of uterus and any pelvic mass .pelvic ultrasound to assess the uterus (uterine size, endometrial thickness, presence of endometrial polyp, adenomyosis or fibroids) and ovarian status (presence of any cyst, mass and its characteristics). Endometrial biopsy and hysterectomy specimens (wherever applicable) were inspected grossly and were sent for histopathology. After this, possible underlying causes were categorised Clinical diagnosis was then correlated with histopathology for final diagnosis. The category of

AUB may provide a vision to go for a pathological correlation particularly that of the PALM aspect of PALM–COEIN. In evaluation of COEIN aspect, ovulatory dysfunction is defined as unpredictable timing and variable amount of bleeding .on basis of predictable or cyclical pattern of bleeding endometrial disorders AUB E classified. Iatrogenic category is categorised by the identification of hormone steroid intake during the preceding 3 months. Following a thorough history and complete clinical examination, investigations including complete blood count, coagulation profile when applicable. Thyroid function test and blood sugar level estimations were done, and the result was correlated with the clinical details. Endometrimal histology was correlated in case of AUB-Oand AUB-Ewith the clinical assignments.

Statistical Analysis

Statistical analysis was done by using chi square test and students test to ascertain the clinical relevance of the present study. Conclusions will be drawn from the data collected after analyzing the results statistically

Results

181 women with complaints of abnormal uterine bleeding were included in the study. 95% of the women were below 50 years of age. Majority of women presented with heavy menstrual bleeding (72.92%) and 27.7% presented with inter menstrual bleeding

Table1: Distribution of cases based on symptoms

Symptoms	No of cases n=181	%
Heavy menstrual bleeding	132	72.92%
Intermenstrual bleeding	49	27.7%

Table 2: Distribution of cases based on endometrial pattern on histopathology

Endometrial Pattern	No of cases	%
Proliferative phase	87	48.06%
Secretory phase	69	38.12%
Hyperplasia	12	6.62%
Malignancy	09	4.97%
Atrophic	03	1.65%
Inflammatory	01	0.55%

The above table (table 2) shows the distribution of cases based on endometrial pattern on histopathology, it was found that maximum number of cases had proliferative phase on histopathology 87(48.06%), followed by secretory phase on histopathology 69(38.12%) and 12 women i.e 6.62% had hyperplasia on histopathology.

Table 3: Distribution of cases based on clinical diagnosis.

Diagnosis (PALM) n=117 (64.64%)	No of cases	%
AUB –P (Polyp)	09	4.97%
AUB –A(Adenomyosis)	15	8.29%
AUB -L (Leiomyoma)	84	46.41%
AUB- M(Malignancy and hyperplasia)	9	4.97%
COEIN n=64 (35.35%)		
AUB- C (Coagulopathy)	00	00
AUB-O(Ovulatory disorders)	52	28.73%
AUB-)I (Iatrogenic)	00	00
AUB –E(Endometrial)	12	6.63 %
AUB-N(Not yet classified)	00	00

The above table shows distribution of cases based on clinical diagnosis. It shows that 64.64% cases belonged to PALM and 35.35% cases belonged to COEIN group respectively. It was found that leiomyoma was the major cause 84/181 (46.41%) overall and 84/117 (71.79%) in the PALM group, whereas ovulatory disorders were the

major cause from COEIN group, accounting for 52/64 (81.25%) in the COEIN group.

Table 4: Distribution of cases based on histopathological diagnosis

Diagnosis(PALM) n=118	No of cases n=181	%
AUB –P (Polyp	07	3.87%
AUB –A(Adenomyosis)	30	16.57%
AUB -AL	7	3.87%
AUB -L (Leiomyoma)	53	29.28%
AUB- M(Malignancy and hyperplasia)	21	11.60%
COEIN n=63		
AUB-O(Ovarian)	48	26.52%
AUB -E	15	8.29%

Distribution of cases based on histopathological diagnosis (table 4), shows that 65.19% cases belonged to PALM and 34.8% cases belonged to COEIN group respectively.

Table 5 Correlation between clinical and histopathological diagnosis

Diagnosis	No of cases diagnosed clinically PALM n=117	No of cases diagnosed histo-pathologically PALM n=118	P value 0.0001, S
AUB –P (Polyp	09(4.97%)	07(3.87%)	0.26,p=0.60, NS
AUB – A(Adenomyosis)	15(8.29%)	30(16.57%)	5.71,p=0.016,S
AUB -AL	0(0%)	7(3.87%)	7.10,p=0.077,S
AUB -L (Leiomyoma)	84(46.41%)	53(29.28%)	5.69,p=0.001,S
AUB- M(Malignancy and hyperplasia)	9(4.97%)	21(11.60%)	5.10,p=0.023,S

	COEIN n=64	COEIN n=63	P value 0.48,NS
AUB-O(Ovarian)	52(28.73%)	48(26.52%)	0.20,p=0.65, NS
AUB -E	12(6.63%)	15(8.29%)	0.36,p=0.54, NS
p-value(above 5)			24.06,p=0.0001,S
p-value(below 2)			0.48,p=0.48, NS
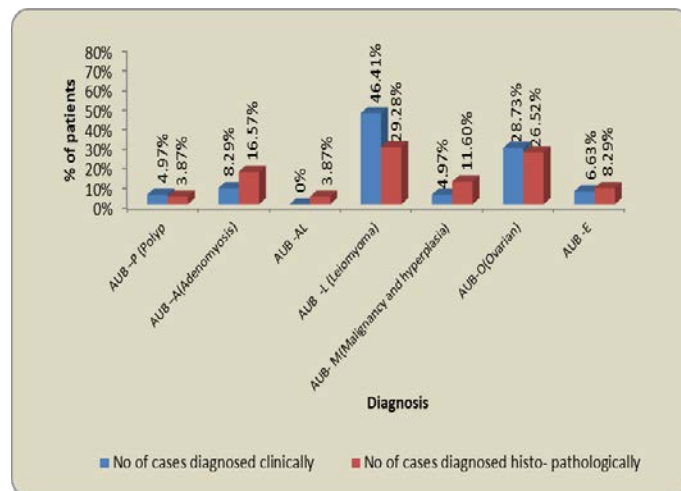
Discussion

AUB is common condition in women in perimenopausal age group. FIGO has described the PALM COEIN classification for AUB will help investigators to analyze patients with AUB and will aid in comparison of studies done by various researchers by avoiding complicated terminologies which were used previously. PALM COEIN classification considers the total range of possible etiologies . Investigations are done to conclude the diagnosis in perimenopausal group of women to rule out mainly the precancerous lesion and cancers. For accurate and correct diagnosis histopathological examination plays a important role and benefits in management of patients. This study is planned as per the new terminologies and classification given by the FIGO.(4, 12,13)

In our study, the most common cause of AUB was leiomyoma in perimenopausal age group. Other researchers i.e. Perveen S et al , Khan S et al also have similar findings.

The second most common cause of AUB in our study is ovulatory disorders, as also seen in other study by Mishra D et al.

Other important causes of AUB found in our study were Adenomyosis, Malignancy and hyperplasia and endometrial causes.

The correlation of PALM component i.e structural component clinically and histopathologically has p value of 0.0001 which is significant , as found in other study by Mishra D et al.

When analysis of various components was done, the clinohistopathological correlation of AUB-P (Polyp) was found to be non-significant (p value-0.60) as in a study done by Mishra D et al. As most of the cases were of cervical polyp which were diagnosed by per speculum examination.

The clinohistopathological correlation of AUB-A (Adenomyosis) was found to be significant (p value-0.016) as in a study done by Mishra D et al. This is because the clinical features of adenomyosis and leiomyoma resemble so closely to each other clinically, making it difficult to diagnose clinically, hence the need of histopathology in diagnosing PALM component. This also explains the clinohistopathological correlation of AUB-AL (Adenomyosis Leiomyoma) found to be significant (p value-0.077). Similar findings were observed by Ramachandran T et al.

The clinohistopathological correlation of AUB-L (Leiomyoma) was found to be significant (p value-0.001), whereas study done by Mishra D et al found it to be non significant.

The clinohistopathological correlation of AUB-M (Malignancy and Hyperplasia) was found to be significant (p value-0.023), this is because cases of Malignancy and hyperplasia present with non specific sympoms and on clinical examination also the uterine size is normal making it difficult to diagnose clinically, hence Histopathological diagnosis is important in diagnosing it. Similar findings were found by Devi J et al and Mishra d et al.

The clinohistopathological correlation of AUB-O (Ovulatory) was found to be non-significant (p value-0.065), similar findings observed by Mishra D et al. This is because most of the perimenopausal women have anovulatory cycles and it also possible to diagnose them clinically.

The clinohistopathological correlation of AUB-E (Endometrial) was found to be non-significant (p value-0.054), with slightly more number of cases being diagnosed histopathologically than clinically.

Conclusion

In our study, the most common pathology identified was leiomyoma (29.28%) histopathologically. The clinohistopathological correlation of the PALM component was significant with a p value of 0.0001, which suggests the need of histopathological diagnosis for more accurate diagnosis with respect to PALM component.

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