A Study of Palm-Coein Classification of Abnormal Uterine Bleeding & its Clinical-Histopathological Correlation in Perimenopausal Women at Umaid Hospital

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Abstract: _Background: Abnormal uterine bleeding (AUB) is a commonest menstrual problem affecting the women of reproductive age group especially during perimenopausal period. It significantly impacts women's personal, social, physical and quality of life. The International Federation of Gynecology and Obstetrics (FIGO) developed a new universally acceptable system of nomenclature and classification, namely PALM–COEIN classification. Aims and Objectives: [1] Categorize perimenopausal woman with abnormal uterine bleeding according to PALM-COEIN classification system. [2] Correlate the clinical diagnosis and histological feature of various causes of AUB. Materials and Method: The present study was conducted at Umaid Hospital, Jodhpur from June 2019 to Nov. 2019. Total 364 women (aged 40 years & above till 1 year beyond menopause) who were admitted with chief complain of AUB were included in our study. Results: Majority of women included in study were between 45-50 years (44.24%). 65.38% women presented with heavy menstrual bleeding and 34.61% presented with inter -menstrual bleeding. 209 women categorized in PALM system and 155 women in COEIN system. Most common cause of AUB according to clinical findings was leiomyoma in 38.73% women followed by ovarian dysfunction in 30.21% women. Conclusion: Histopathological examination contribute major role in accurate diagnosis which has a profound impact on the management of patients._

Keywords: Abnormal uterine bleeding, FIGO, PALM-COEIN, perimenopausal, histopathological

1. Introduction

AUB is the commonest menstrual problem during perimenopause. It is defined as bleeding from uterine corpus that is abnormal in regularity, volume, frequency, duration & occur in absence of pregnancy [1, 2].

Abnormal uterine bleeding is the cause for one-third of gynecologic consultations and nearly two- thirds of hysterectomies. It is also associated with social and physical morbidities and may be a reflection of serious underlying pathology [3].

The International Federation of Gynecology & Obstetrics working group on menstrual disorder developed a classification system for cause of AUB in non gravid uterus. The classification has been categorized into nine categories PALM-COEIN where PALM comprising of structural cause and stands for Polyp, Adenomyosis, Leiomyoma, Malignancy and Hyperplasia respectively. The COEIN is related to nonstructural causes and stands for Coagulopathy, Ovulatory disorders, Endometrial, Iatrogenic, and Not otherwise classified [4] .

Assessing a correlation between clinical and histological classification can ascertain the degree of accuracy of clinical assignment to the category of AUB and may provide an insight as to when one must go for a pathological correlation particularly that of the PALM aspect of PALM–COEIN, whereas for COEIN (functional) aspect, the same is done

using other investigations namely haematological and endocrinological work up. FIGO recommends endometrial tissue testing as a first line management in women of perimenopausal age group who have AUB [5]. Histopathological examination is necessary for accurate diagnosis and further management as it rule out premalignant lesion.

So we planned to correlate the clinical diagnosis and histological feature of various causes of AUB in perimenopausal women for accurate diagnosis and further management at appropriate time.

Aims and Objectives

- Categorize perimenopausal woman with abnormal uterine bleeding according to PALM-COEIN classification system.
- Correlate the clinical diagnosis and histological feature of various causes of AUB.

2. Material & Methods

The present study was conducted at Umaid Hospital, Jodhpur from June 2019 to Nov. 2019 in six months period. Total 364 women (aged 40 years & above till 1 year beyond menopause) who were admitted with chief complain of AUB were included in our study. Women who were <40 years of age and those beyond 1 year of menopause were excluded from the study.

The demographic details, obstetrics history, previous & present menstrual history, duration of AUB, h/o contraception use, medical or surgical history f/b general physical, systemic & gynecological examination were noted. Ultrasound and other specific investigations were conducted wherever necessary. On gynecological examination, cervix (any erythematous lesion, mobility, hypertrophy, presence of polyp), uterus(size, position, consistency,mobility) & adnexa (any palpable enlarged lump, tenderness, mobility) were assessed. Each case was assigned to individual category according to PALM-COEIN classification once the diagnosis was made. Endometrial biopsy/ hysterectomy (whichever indicated) was performed. As per the histopathological findings, possible underlying cause was categorized. Clinical diagnosis was then correlated with histopathology based final diagnosis.

For COEIN aspect; ovulatory dysfunction generally manifest as unpredictable timing of bleeding & variable amount of flow while endometrial disorder manifest as predictable & cyclic menstrual bleeding. In cases of Iatrogenic AUB causes h/o steroidal hormone intake or contraceptive usage was noted. A complete blood count, thyroid function test, blood sugar estimation done wherever applicable. Endometrial histology was correlated in cases of AUB-O & AUB-E with the clinical assignments.

3. Results and Observations

364 women with age 40 years till 1 year menopause included in study during six months period.

Majority of women included in study were between 45-50 years (44.24%).

Table 1: Distribution of cases based on symptoms

Symptoms	No. of cases	%
Heavy menstrual bleeding	238	65.38%
Intermenstrual bleeding	126	34.61%

In this study 65.38% women presented with heavy menstrual bleeding and 34.61% presented with inter -menstrual bleeding.

Table 2: Distribution of cases as per clinical diagnosis

	No. of cases	%
AUB-P(Polyp)	30	8.24
AUB-A(Adenomyosis)	29	7.96
AUB-L(Leiomyoma)	141	38.73
AUB-M(Malignancy & Hyperplasia)	9	2.47
AUB-C(Coagulopathy)	0	0
AUB-O(Ovarian Dysfunction)	110	30.21
AUB-E(Endometrial Dysfunction)	43	11.81
AUB-I (Iatrogenic)	2	.54
AUB-N(Not yet classified)	0	0

In this study based on clinical findings – 209 women categorized in PALM system and 155 women in COEIN system. Most common cause of AUB according to clinical findings was leiomyoma in 38.73% women followed by ovarian dysfunction in 30.21% women.

Table 3: Distribution of cases based on histo-pathological diagnosis

	No.of cases	%
AUB-P	32	8.79
AUB-A	46	12.63
AUB-A,L	27	7.41
AUB-L	124	34.06
AUB-M	27	7.41
AUB-O	96	26.37
AUB-E	10	2.74

According to present study – based on histo -pathological findings 256 women (70.32%) categorized under PALM and 106 women (33.24%) under COEIN system.124 (34.06%) women had leiomyoma in histopathological findings**.**

Table 4: Correlation between clinical &histopathological diagnosis

Diagnosis	No. of cases diagnosed clinically	No. of cases Diagnosed histopathologically	p value
AUB-P	30	32	0.53 (NS)
AUB-A	29	46	0.04 (S)
AUB-A,L	0	27	<0.001 (HS)
AUB-L	141	124	0.09 (NS)
AUB-M	9	27	<0.001 (HS)
AUB-O	110	96	0.23 (NS)
AUB-E	43	10	<0.001 (HS)

Table 5: Associated risk factor

Risk factor	No. of cases	%
Obesity	52	14.28
Thyroid disease	40	10.98
Hypertension	39	10.71
Diabetes Mellitus	26	7.14
H/O PCOS	0	0.00
Family h/o endometrial cancer	0	0.00

In this study 52 women (14.28%) were obese, 40 women (10.98%) had thyroid disease, hypertension in 39 (10.71%) and diabetes in 26(7.14%).

4. Discussion

Abnormal uterine bleeding is a major public health issue that affects a large proportion of women seeking healthcare for gynecological reasons. To standardize nomenclature of AUB, FIGO developed PALM-COEIN classification system which is evidence based & helps in standardizing clinical practices[6]. Majority of women included in study were between 45-50 years (44.24%). Study done by archana et al also had 43.47% women of age group 45-50 years. [7]

Menopausal transition (perimenopause) is characterized by irregularity of menstrual cycle which may manifest as heavy menstrual bleeding, intermenstrual bleeding or post menopausal bleeding. In our study, PALM component (structural cause) contributed more to the casue of AUB than COEIN component with AUB-L being the major contributor in structural cause. Obesity contributes to increased risk of polyp, leiomyoma & endometrial cancer by peripheral conversion of adrenal derived androgens to weak estrogen i.e. estrone in adipose tissue. [8]

Leiomyoma as the leading cause of AUB in perimenopause which was similar with other researchers also [9,10,11]. Age is the most important risk factor, with life time risk in women over the age of 45 years to be >60% [12].

In perimenopausal women, ovulatory disorder are common due to hormonal imbalance & due to alteration of hypothalamus-pituatory-ovarian axis resulting in derangements of follicular maturation, ovulation or corpus luteum formation &anovulatory cycles are most frequent & chronic anovulation associated with unpredictable timing of bleeding & variable amount of flow[13]. In our study also ovulatory disorder major cause of abnormal uterine bleeding in non- structural causes & second common cause of AUB.

On analysis the clinical histopathological correlation we found that in AUB-P the difference in clinical &histopathological diagnosis was not significant. In present study ; the histopathology identify higher no. of polyps ; but not in significant proportions.

In AUB-A the difference in clinical & histopathological diagnosis was significant. It may be due to symptoms & signs of adenomyosis& leiomyoma can be similar that it can be impossible to differentiate them clinically. AUB A;L were noted in 7.69% of hysterectomy cases & almost all cases were diagnosed by histopathology which were missed clinically.

In our study, AUB-M accounted for 2.47% cases clinically but histopathologicaly found in 7.41% cases. The average age for women with endometrial carcinomas is 61 years, but 5-30% cases (9 cases) occur in premenopausal women. Premalignant potential of hyperplasia is influenced by age, underlying ovarian disease, endocrinopathy, obesity & exogenous hormone exposure. In the presented study endometrial hyperplasia with atypia found in 1.92% cases, endometrial hyperplasia without atypia found in 3.02% & adenocarcinoma found in 2.47% cases. Risk of co-existent invasive cancer in hyperplasia without atypia is <1% & in hyperplasia with atypia risk of coexisting invasive cancer is up to 33%.

In our study we found that difference in clinical &histopathological diagnosis in AUB-O was not significant, while in AUB-E difference was significant. AUB-E may represent a primary endometrial disorder particularly when no other definable cause are identified, in presence of ovulatory cycle. Retrospective evalution of women with chronic endometritis has failed to demonstrate a consistent relationship between histopathological diagnosis & presence of AUB because unavailability of specific routine tissue assays.

5. Conclusion

According to our study we found that the clinical pathological correlation was good when cases were classified under PALM-COEIN classification, however histopathology helped in accurate diagnosis of few cases missed clinically. In our study, AUB-M accounted for 2.47% cases clinically but histopathologicaly found in 7.41% cases. Thus we observed significant no. of AUB-M

cases found histopathologicaly which provides insight for management protocol accordingly. Histopathological examination contribute major role in accurate diagnosis which has a profound impact on the management of patients.

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