

Clinical and Histopathological Correlation of Hysterectomy Specimen in Abnormal Uterine Bleeding according to PALM-COEIN Classification

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Abstract

Background: Abnormal Uterine Bleeding (AUB) defined as “bleeding that is abnormal in volume, regularity or timing for past 6 months.” It accounts for two thirds of Hysterectomies in premenopausal women. Hysterectomy is indicated when patient symptoms are not improving with medical management. According to FIGO, Causes of AUB is classified as structural and nonstructural causes under PALM – COEIN classification (Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia, Coagulopathy, ovulatory dysfunction, Endometrial, Iatrogenic, Not otherwise classified).

Aims: (1) To analyze the clinical causes of AUB. (2) To correlate clinical and histopathological findings in AUB patients undergoing hysterectomy.

Methodology: This study is a retrospective observational study. Women who underwent hysterectomy in view of AUB at Trichy SRM Medical college and Hospital over a period of six months from September 2021 to February 2022 were included in the study. About 50 women who underwent hysterectomy in view of AUB during that study period were included in the study. Details like demographic details, duration of AUB, menstrual abnormalities, parity, comorbidities, clinical findings, ultrasound findings, histopathological findings were collected from Medical Records Department (M.R.D) and entered in proforma. The causes of AUB were analyzed, their clinical findings were correlated with post-hysterectomy histopathological findings. Statistical analysis done using SPSS software version 22. Clinical and histopathological correlation was done, p value of <0.05 was considered significant.

Results: Majority of the study participants were in the age group of 41-50 years (46%). Dysmenorrhea was reported in 30% of study population. 80% of the women were multiparous. About 54% of cases had anemia. Fibroid was the most common clinical diagnosis(AUB-L) about 48% for which hysterectomy was done. The most common endometrial histopathology was secretory endometrium seen in 46% of cases. There was significant correlation between clinical diagnosis and hysterectomy histopathology findings.

Conclusion: Histopathology is mandatory for confirming diagnosis and for further optimal management.

Keywords: Abnormal Uterine Bleeding (AUB), Hysterectomy, PALM-COEIN.

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Introduction

Abnormal Uterine Bleeding (AUB) is defined as “bleeding per vaginum that is abnormal in volume, regularity or timing for a minimum period of 6 months.” In post-menopausal women, AUB is defined as “any episode of vaginal bleeding that occurs after 1 year of cessation of menses.” AUB is shown to affect 60–70% of women in the reproductive age group which increases during the perimenopausal age [1]. About one third of the women in the reproductive age group attending OPD, present with the complaints of abnormal uterine bleeding [2]. AUB accounts for 2/3rd of hysterectomies done in premenopausal women.

According to the International Federation of Gynecology and Obstetrics (FIGO), acute AUB could be classified as “an episode of bleeding in a woman of reproductive age, who is not pregnant, that is of sufficient quantity to require immediate intervention to prevent further blood loss [3]. The International Federation of Gynecology and Obstetrics working group on menstrual disorders has developed a classification system-PALM COEIN for causes of AUB in non-pregnant women of reproductive age [4].

PALM abbreviates the local structural aetiologies in the genital tract and stands for polyp, adenomyosis, leiomyoma, malignancies and hyperplasia. The term COEIN abbreviates non- structural causes of AUB such as coagulopathy, ovulatory pathologies, endometrial pathologies, iatrogenic reasons (intra uterine devices, certain drugs, etc) and un-classified diseases. Heavy menstrual bleeding (HMB) includes menometrorrhagia, metrorrhagia and polymenorrhoea.

Abnormal uterine bleeding is initially managed medically. A number of minimally invasive surgical alternatives for hysterectomy do exist now, such as endometrial ablation, thermal balloon therapy and uterine artery embolization [5]. Despite all these methods, hysterectomy still remains the widely accepted and practiced treatment, in a developing country when medical management is refractory [6,7]. Histological assessment is mandatory in the current practice in patients of AUB as it determines the diagnosis and guides the correct management plan [3].

In the present study, we aimed to classify the samples according to PALM–COEIN classification and also try to establish a clinicopathological correlation in a tertiary care hospital, Trichy.

Methodology

This study is a retrospective observational study, conducted in the Department of Obstetrics and Gynecology at Trichy SRM Medical College Hospital and Research Centre. After getting approval from Institutional Ethics committee, the study was conducted. About 50 Women who underwent hysterectomy in view of AUB at Trichy SRM Medical college and Hospital over a period of six months from September 2021 to February 2022 were included in the study.

Inclusion criteria: All women of reproductive age group who presented with AUB to the gynecology OPD in whom endometrial biopsy and hysterectomy were performed were included in the study.

Exclusion criteria:

1. All AUB patients who didn't undergo hysterectomy.
2. Patients who underwent hysterectomy for causes other than AUB

Details like demographic details, clinical details, AUB duration, menstrual abnormalities, parity, comorbidities were recorded in the proforma. Detailed gynecological findings like position of cervix, presence or absence of erosion of cervix, size and position of uterus, any adnexal mass were also recorded in the proforma. After making clinical diagnosis, participants were categorized based on the PALM-COEIN classification. Ultrasound,

endometrial histopathology, post-hysterectomy histopathology findings were also recorded. Post-hysterectomy histopathology findings were also categorized based on the PALM-COEIN classification. Finally clinical and histopathological correlation was done.

Statistical Analysis

Data was entered into Microsoft excel data sheet and were analyzed using SPSS software version 22 and results were expressed as percentages, bar diagrams, and pie charts. Clinical and histopathological correlation was done. P value of <0.05 was considered statistically significant.

Results

About 50 AUB cases who underwent hysterectomy were included in the study and following results were obtained.

Table 1: Age distribution

Age group	No of cases	Percentage (%)
<40 years	15	30
41-50 years	23	46
>50 years	12	24

[Table 1] shows Age distribution. Majority of the study participants were in the age group of 41-50 years (46%), followed by less than 40 years of age (30%) and remaining 24% were above 50 years.

Table 2: AUB duration(months)

AUB duration	No of cases	Percentage (%)
<5 months	10	20
6-10 months	20	40
11-15 months	14	28
16-20 months	2	4
>20 months	4	8

[Table 2] shows AUB duration where most of the study participants had AUB for 6-10 months (40%), followed by 11 -15 months (28%). Remaining (20%) of study participants had AUB less than 5 months. Dysmenorrhea was reported in 30% of study population.

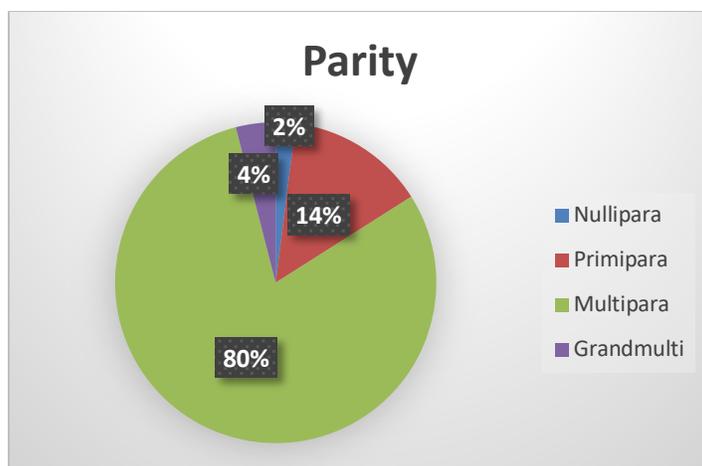


Figure 1: Parity distribution

[Figure 1] shows parity distribution, Majority of the study participants who underwent hysterectomy due to AUB were multiparous(80%). (14%) of women were primipara, Grand multi were 4%. Remaining 2% were nullipara.

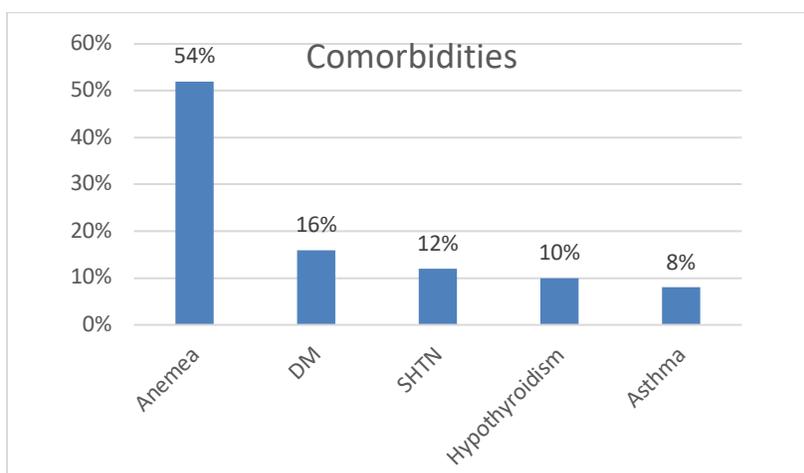


Figure 2: Associated comorbidities in AUB patients

[Figure 2] shows comorbidities. Majority of AUB patients had Anemia (54%). Diabetes mellitus were present in (16%) of cases. Systemic hypertension was seen in (12%) of cases. (10%) cases were hypothyroid. Remaining (8%) cases had bronchial asthma.

Table 3: Per abdomen Uterus Size

Uterus size	Frequency	Percentage (%)
Normal	18	36
12 weeks	12	24
14 weeks	15	30
16 weeks	3	6
20 weeks	2	4

[Table 3] shows per abdomen uterus size. Majority of the study participants had normal uterus size(36%). (24%) had 12 weeks size, (30%) had 14 weeks size. (6%) had 16 weeks uterus size, remaining (4 %) had more than 20 weeks uterus size.

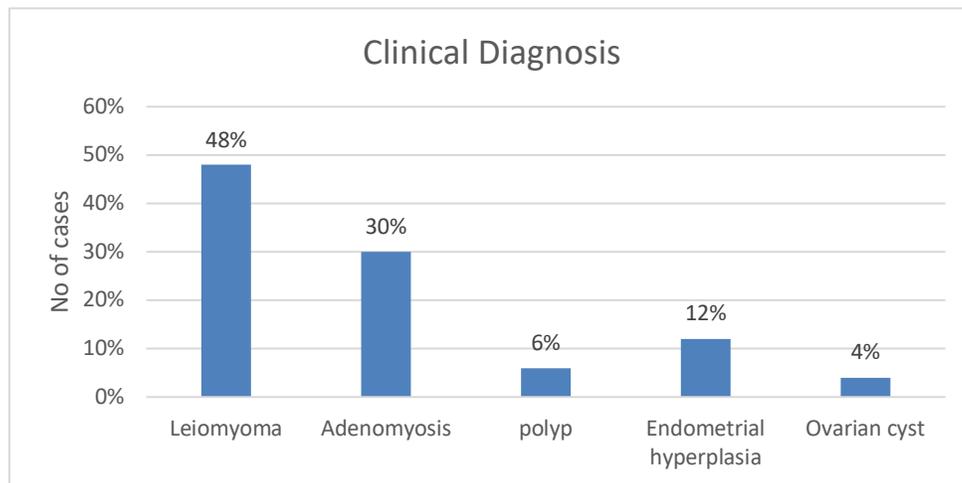


Figure 3: Clinical diagnosis

[Figure 3] shows clinical diagnosis. Based on diagnosis, fibroid uterus was present in (48%) of cases, Adenomyosis was seen in (30%) of cases, Endometrial hyperplasia in (12%) of cases, Endometrial Polyp was present in (6%) of cases, Ovarian cyst was seen in (4%) of cases.

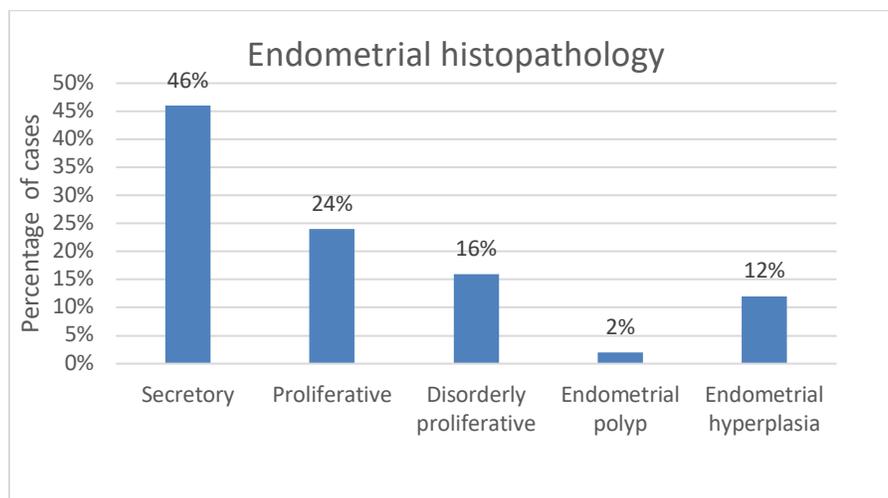


Figure 4: Endometrial histopathology

[Figure 4] shows Endometrial histopathology findings. Among which most common endometrial histopathology was secretory endometrium (46%), Proliferative endometrium was present in (24%) of cases, disorderly proliferative endometrium was present in (16%) of cases, Endometrial hyperplasia in (12%) of cases, remaining (2%) of cases had endometrial polyp.

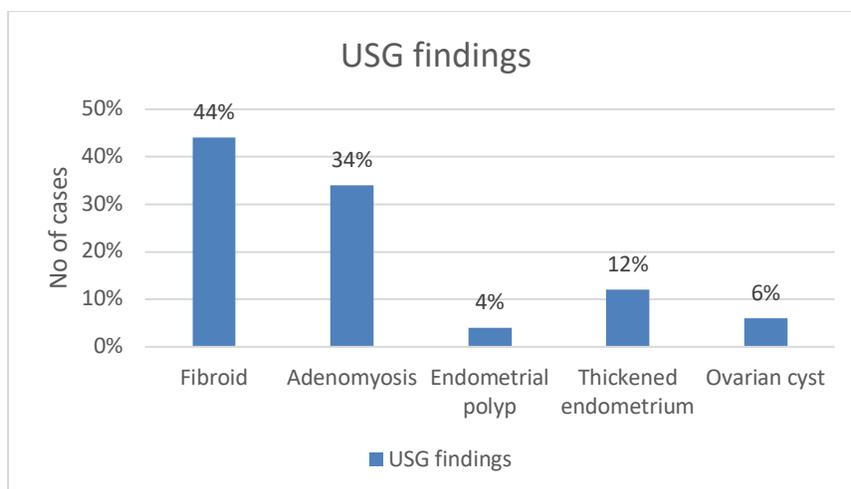


Figure 5: USG findings

[Figure 5] shows Ultrasound findings. Based on Ultrasound findings, majority of study participants had fibroid (44%), (34%) of AUB cases had adenomyosis, Endometrial polyp was seen in (4%) of cases, (12%) of study population had thickened endometrium. Ovarian cyst was seen in (6%) of cases.

Table 4: Post hysterectomy histopathology

Hysterectomy histopathology finding	No of cases	Percentage (%)
Fibroid	22	44
Adenomyosis	17	34
Endometrial polyp	3	6
Endometrial hyperplasia	5	10
Ovarian cyst	3	6

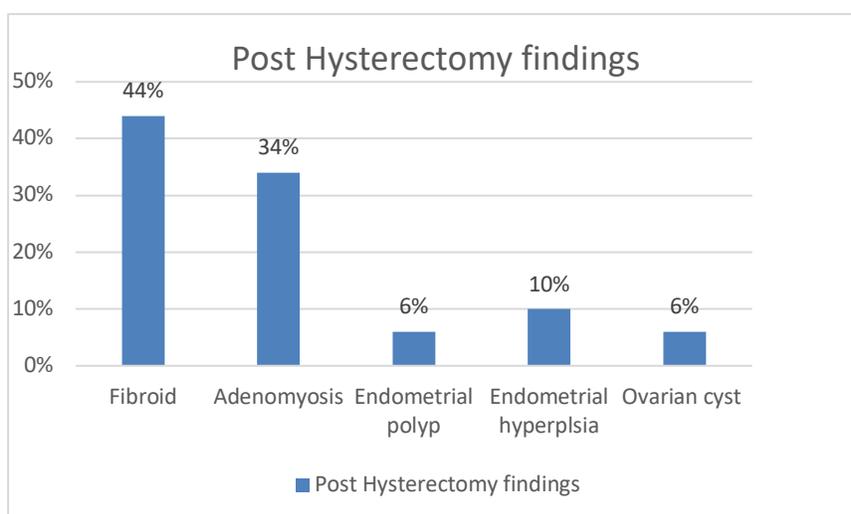


Figure 6: Post hysterectomy histopathology findings

[Figure 6] showing Post hysterectomy histopathology findings. Fibroid was present in 44% of cases, adenomyosis was present in 34% of cases, Endometrial polyp was seen in 6% of cases, Endometrial hyperplasia was seen in 10% of cases, Ovarian cyst was seen in 6% of cases.

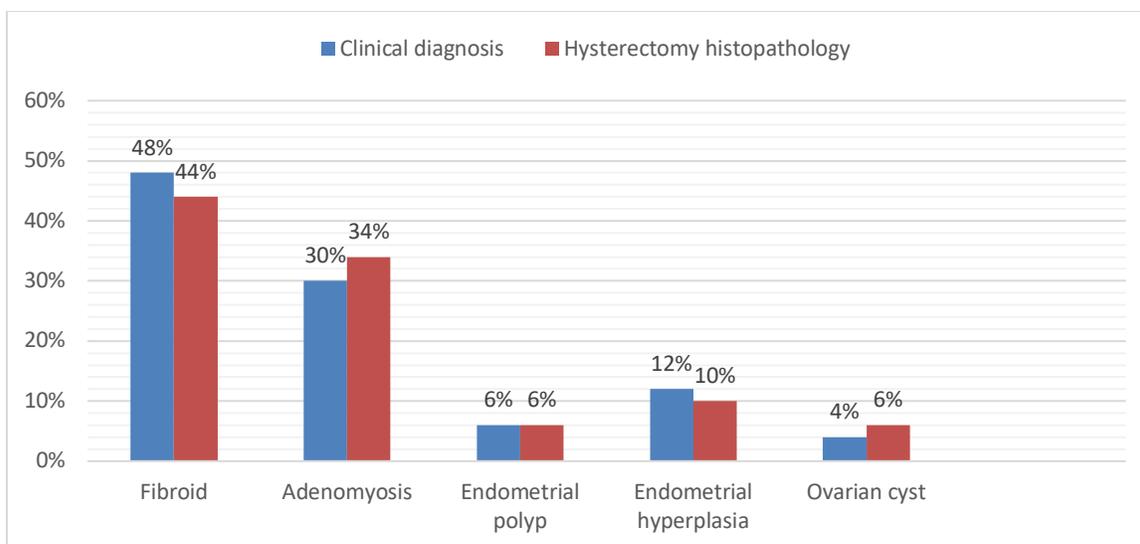


Figure 7: Correlation between endometrial histopathology and hysterectomy histopathology

Figure 7 showing correlation between clinical and histopathological diagnosis. There was significant correlation seen between clinical and histopathological finding.

Discussion

Hysterectomy is done for women in cases of AUB, where medical management was refractory. Hysterectomy is the definitive treatment as it provides a permanent cure to many diseases which involve uterus as well as the adnexa e. g., fibroids, DUB, adenomyosis, endometriosis, PID and malignancy.[8]

In our study majority of study participants were in the age group of 41-50 years of age (45%), followed by less than 40 years of age in 31% of cases, which are comparable to Rizvi *et al* [9] Their study showed that 44.5% cases belong to age group of 41-50 yrs. According to study by Jairajpur *et al* [10] showed that 35.9 % of AUB cases in their fifth decades. Muzaffer *et al* [11] showed that 48.1% cases of AUB cases were in the age group of 41-50 years. Majority of the study participants had AUB for 6-10 months (40%), followed by 11-15 months (28%), which was in line with findings reported by Ilavarasi *et al*. [12]

Majority of women were multipara (80%), among which 70% were second gravida, which is similar to the study conducted by Mohammad *et al* where (65.9%) cases were second gravida in our study. [13] Radhika *et al* [18] showed 75% were multipara.

AUB might be associated with systemic diseases (e.g. diabetes mellitus, hypothyroidism)[14]. Our study showed that majority of AUB patients had Anemia (54%), diabetes mellitus was present in 16% of cases. Systemic hypertension was seen in 12% of cases. 10% cases were hypothyroid. Remaining 8% cases had bronchial asthma. Kohinoor Begum showed 100% of her cases had some degree of anemia, 10% were hypertensive, 8% were diabetic and 6% were hypothyroid[15].

We found that fibroid was present in 48% of cases, followed by adenomyosis in 30% of cases. Rizvi *et al* [9] showed fibroid uterus in 41.46% cases and adenomyosis in 46.36% cases and around 19% of cases had both fibroid uterus and adenomyosis. The study

conducted by Begum *et al* [15] found that fibroid uterus was diagnosed clinically in 54.1% cases.

Most common endometrial histopathology was secretory endometrium (46%) from our study, followed by Proliferative endometrium in 24%, which is similar to Singh *et al*[3] where secretory endometrium was seen in(42%) closely followed by proliferative endometrium. Mishra and Sultan showed secretory endometrium in 41.52% and proliferative endometrium in 37.28% of cases[16].

In our study from Post hysterectomy histopathological findings, Fibroid was present in 44% of cases, adenomyosis was present in 34% of cases, Endometrial polyp was seen in 6% of cases, Endometrial hyperplasia was seen in 10% of cases, Ovarian cyst was seen in 6% of cases. Rizvi *et al* [9] showed that leiomyoma was found in 41.46% cases. Leiomyoma was most common pathology found according to the studies by Shergill SK *et al* [17] and Abdullah LS *et al*. This is also similar to the study conducted by Radhika *et al* [20], where fibroid was present in 46.67% of cases, followed by adenomyosis in 23.33% of cases.

We found a significant correlation between clinical and histopathological diagnosis where the p value was <0.05 which was similar to Singh *et al*[3], who showed clinicopathological concordance was statistically significant in cases of AUB -A and AUB – L , where p value was <0.05.

Conclusion

Hysterectomy is a very common surgical procedure done for AUB, in whom medical management is refractory. The present study was a retrospective study shows various histopathological lesion in hysterectomy specimen. Histopathological examination of endometrium should also be done in women who are presenting with AUB to rule out

malignant pathology. According to our study, it was found that clinicopathological correlation was good when the cases were classified under PALM-COEIN classification. All hysterectomy specimens should be sent for histopathological examination for confirmation of diagnosis and for further management.

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