Spectrum of Clinico-Pathological Correlation of Abnormal Uterine Bleeding Cases in a Tertiary Care Hospital

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ABSTRACT

Introduction: Abnormal Uterine Bleeding is a common problem encountered by women of all age groups, responsible for around 20-30% visits to out-patient department in reproductive age group. The International Federation of Gynaecology 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.

Aim of the Study: To evaluate the correlation of histopathological findings with clinical & sonographic findings.

Material & Methods: This was a cross sectional observational study, conducted in the Department of Obstetrics & Gynaecology, BIRDEM Hospital, Dhaka from 1st July 2015 to July 2017. One hundred patients of age range between 35-45 years who were clinically diagnosed as AUB & underwent total abdominal hysterectomy in BIRDEM Hospital.

Results: A total of 100 cases were analyzed. Patients' age ranged from 35-45 years. The most common presenting symptom was heavy menstrual bleeding (62%). Most of the patients (60%) were initially treated medically before undergoing hysterectomy. In few patients (14%) hysterectomy was done as first treatment as the bleeding was severe. Endometrial proliferative pattern was the most common histopathological finding and was seen in 64% patients. Atypical endometrial hyperplasia in 5% patients, secretory endometrium in 15% and atrophic endometrium were seen in 4% patients each & Cystic hyperplasia in 7% patients. After exclusion of organic pathology (according to FIGO classification: PALM) through histopathological findings, diagnosis of AUB due to Nonstructural pathology like ovulatory dysfunction, Endometrial pathology was confirmed in 45% of cases.

Conclusion: Histopathological examination of endometrium should be done generously in women presenting with AUB especially after the age of 40 years to rule out malignant pathology.

Keywords

Introduction
Abnormal uterine bleeding (AUB) is defined as any change in the frequency of menstruation, duration of flow or amount of blood loss [1,2].

AUB is a common condition affecting the women of reproductive age group and may also have a significant effect on their physical, social, and emotional aspects directly affecting their quality of life [3]. AUB is a common problem encountered by women of all age groups, responsible for around 20-30% visits to out-patient department in reproductive age group [4].

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 [5]." The International Federation of Gynaecology 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 [6].

The classification system is divided into nine categories that are arranged according to the acronym PALM-COEIN: Polyp, Adenomyosis, Leiomyoma, Malignancy and hyperplasia, Coagulopathy, Ovulatory disorders, Endometrial, Iatrogenic, and Not Classified. The most common clinical manifestations are menorrhagia, polymenorrhoea, metrorrhagia, and inter-menstrual bleeding. The new terminologies approved by FIGO are: a) Heavy menstrual bleeding (HMB) should replace menorrhagia to describe excess of bleeding, b) Inter menstrual bleeding (IMB) that occurs between clearly defined cyclic and predictable menses should replace the term metrorrhagia, c) Heavy and prolonged bleeding (HPB) should replace menometrorrhagia and d) frequent menstrual bleeding should replace polymennorhea [7].

The clinicopathological correlation was found good when the cases were classified under PALM–COEIN classification [5]. The safe and effective technique was endometrial biopsy or Dilatation and Curettage (D & C) for evaluation of AUB and diagnosis of endometrial pathologies [8].

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 [9]. These are promising techniques but restricted availability and cost limit them from being used widely. Therefore, hysterectomy still remains the widely accepted and practiced treatment, in a developing country [10,11]. Histological assessment remains the basis in the current practice in patients of AUB as it determines the diagnosis and guides the correct management plan [5].

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, Dhaka.

Methodology and Materials
Study Setting
Obstetrics and Gynecology Department, BIRDEM, a tertiary care Hospital, Dhaka.

Study Population
Females suffering from Abnormal Uterine Bleeding.

Sample Selection
- **Inclusion criteria:**
  - Married women of age between 35-45 years
  - Women diagnosed clinically as Abnormal Uterine Bleeding
  - Women with failed medical treatment & admitted for hysterectomy.
- **Exclusion criteria:**
  - Unmarried women.
  - Women with organic pathology in genital organs as evident by ultrasonography.
  - Patients with other gynaecological problem in addition to AUB.

Study Period
From 1st July 2015 to 1st July2017.

Data Collection
A total of 100 cases were analysed. Patient's age ranged from 35-45 years. The study included all women with abnormal uterine bleeding. Data was recorded on proforma, including demographic characteristics and clinical features. Detailed gynecological examination findings including cervix (position, any polyp, hypertrophy, growth, etc.,), uterus (size, position, consistency, and any lump), and adnexa (any mass, tenderness, and mobility) were observed.After arriving at a clinical diagnosis, wherever indicated, ultrasound or other special tests were done to aid the diagnosis. The histopathologic findings were analysed so as to find out the proportion of various causes of AUB in accordance to the classification system PALM-COEIN proposed by FIGO [5].

Data Analysis
All the data were checked and edited after collection. Data was analysed manually using electronic calculators.

Results
Results are described in table forms shown below:
Table 1: Types of AUB depending on clinical Diagnosis (n = 100).

Admitted cases	N	%
AUB (L)	25	25%
AUB(O)	52	52%
AUB(A)	23	23%

Table 1 shows that cases of AUB (O) were maximum among all AUB cases admitted.
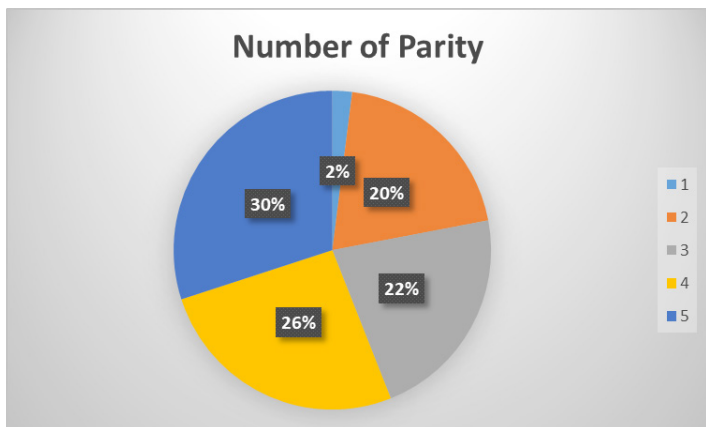
Figure 1: Pie chart: Association of parity with AUB (n = 100).

Pie chart of figure1 shows that, most of the patients are multiparous or grand multiparous.

Table 2: Duration of bleeding period in AUB patients (n = 100).

Duration of P/V bleeding	N	%
5-7 years	28	28%
8-10 years	43	43%
11-13 years	17	17%
14-16 years	12	12%

Table 3: Bleeding patterns in AUB patients (n = 100).

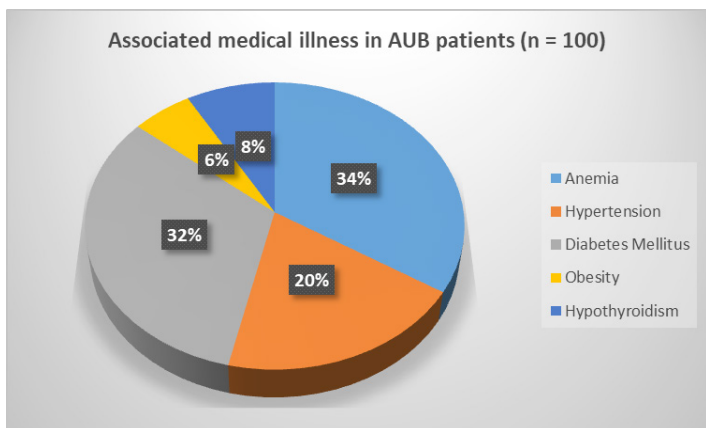| Types of Bleeding	N	%
Heavy menstrual bleeding (Menorrhagia)	62	62%
Inter menstrual bleeding (Metrorrhagia)	18	18%
Frequent menstrual bleeding (Polymenorrhagia)	12	12%
Heavy & prolonged bleeding (Menometrorrhagia)	08	08%

Figure 2: Pie chart on associated medical illness in AUB patients (n = 100).

Figure 2 shows the associated medical illness in AUB patients (n = 100).

Table 4: Ultrasonogram finding of the study population (n = 100).

Ultrasonogram findings		No. of patients	% of patients
Uterus	Bulky	60	60%
	Lieomyoma	25	25%
	Adenomyosis	15	15%
Endometrium	Normal	94	94%
	Increase thickness	4	4%
Ovary	Normal	72	72%
	Cystic	28	28%

Table 5: Findings of Endometrial study those who underwent D&C, prior to hysterectomy (n=100).

Findings of endometrial study	N	%
Proliferative phase	64	64%
Secretory phase	15	15%
Atrophic endometrium	4	4%
Mixed endometrium	2	2%
Cystic hyperplasia	7	7%
Atypical hyperplasia	5	5%
Adenomatous hyperplasia	3	3%

Table 5 shows that most of the endometrial findings are in proliferative phase.

Table 6: Distribution of cases according to treatment modality (n = 100).

Order of treatment modality	N	%
Hysterectomy as first treatment	14	14%
Medical treatment followed by hysterectomy	60	34%
Medical treatment followed by curettage & finally hysterectomy	26	26%

Table 6 shows that most cases were treated with medical treatment first, then ended with hysterectomy.
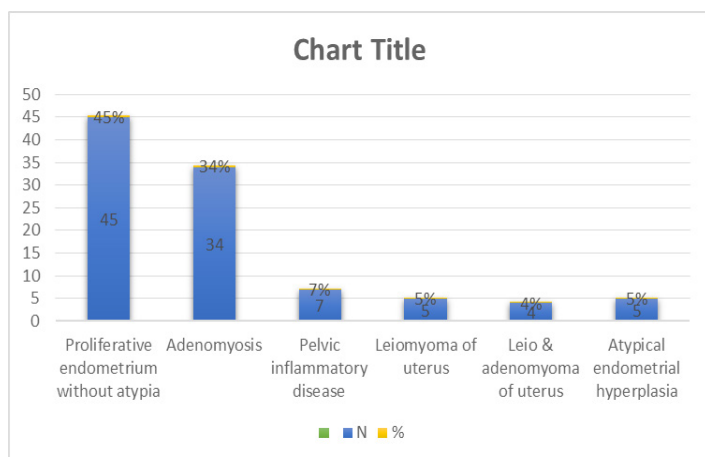

Figure 3: Bar diagram on distribution of histopathological findings of hysterectomy in AUB patients (n = 100).

Table 7: Correlation between clinical diagnosis & histopathological findings (n = 100).

Clinical diagnosis %	Histopathological Dx %	Yes	No	Correlation with additional findings
AUB(L) 25%	Leiomyoma of uterus 5%	√		
AUB(O) 52%	Proliferative endometrium without atypia 45%	√		
AUB(A) 23%	Leio & adenomyoma of uterus			√

Figure 3 & Table 7 show that all the clinical diagnoses did not correlate with the histopathological findings. For example, 25 % of leiomyoma was diagnosed clinically but histopathologically only 5% was confirmed & rest 20% had other histopathological findings.

Discussion

Abnormal Uterine Bleeding (AUB) is a common problem among women AUB can be caused by a wide variety of disorders. Because of its broad range of differential diagnosis, diagnosis of AUB is quite challenging: despite detailed history, various blood test and thorough pelvic examination often involving ultrasonography, the cause of bleeding established in only 50-60% of cases [12].

Abnormal uterine bleeding due to ovulatory dysfunction is a diagnosis of exclusion. Menstrual blood loss can be affected by parity [13]. Multiparous women having higher blood loss than nulliparous. Jacobs and Lindley (1956) showed the correlation with pregnancy was 2.88 pregnancies per AUB(O) patient [14]. Kohinoor Begum showed that 62% patient had 5 pregnancy or more [15]. Banerjee showed that, 41% patient had more than 5 pregnancies [16]. Study done by Prasannalakshmi & Krishnaveni showed that most of the patients were in grand multiparous group [17]. In the present study similar findings were found.

AUB patients may come with various types of menstrual disorders (e.g. heavy menstrual bleeding, frequent menstrual bleeding, intermenstrual bleeding). But most common type is functional polymenorrhea and polymenorrhagia (frequent menstrual bleeing) [18]. According to Jeffcoate, 50% patients of AUB present with functional polymenorrhea and polymenorrhagia (frequent menstrual bleeding) [19]. In the study by Kohinoor Begum, 78% had heavy menstrual bleeding, 12.5% had polymenorrhea and polymenorrhagia (frequent menstrual bleeding) and 8.75% had continuous bleeding [15]. In the study by Banerjee, 54% had heavy menstrual bleeding, 30% had polymenorrhea (frequent menstrual bleeding) and 14% had continuous bleeding [16].

In the study by Sadikchha & Ganesh, most common presentation in women with AUB was menorrhagia (40.3%), menometrorrhagia (23.4%), metrorrhagia (14.3%), polymenorrhoea (13%), oligomenorrhoea (6.5%) and intermenstrual Bleeding (2.6%) [20]. In this present study, 62% patient had heavy menstrual bleeding which is similar to findings by Kohinoor Begum [15]. AUB might be associated with systemic diseases (e.g. diabetes mellitus, hypothyroidism) [21] Kohinoor Begum showed 100% patients in her series had some degree of anemia, 10% were hypertensive,

13% were obese, 8% were diabetic and 6% were hypothyroid [15]. According to study by Banerjee, all patient was anemic, 24% were hypertensive, 32% obese and 10% diabetic [16]. The reason of such increased number of diabetes & hypothyroidism may be that the study is carried out in BIRDEM hospital, a tertiary care hospital for diabetes and endocrine disorders. Bimanual examination is valuable in identifying uterine size and adnexal lesion [22].

Begum showed that in 45% women uterine size was normal, 46% had size 6-8 weeks, 9% had 9-10 weeks size and palpable adnexa were present in 16% cases [15]. In the study by Banerjee, 40% had normal size uterus, 50% had 6-8 weeks size and 10% had 9-10 weeks size uterus [16].

In this present study, 32% women had normal size uterus, 60% had 6-8 weeks size and 8% had 9-12 weeks size. Adnexa were palpable in 8% cases. The result varies from each other as the bimanual examination may differ individually from person to person. Ultrasonogram is a valuable aid in evaluating women presenting with abnormal uterine bleeding, as it can demonstrate anatomical abnormalities not detectable by pelvic examination, like cyst, leiomyoma, even endometrium in terms of its thickness [23]. In this present series, 60% patient had bulky uterus, 25% had leiomyoma. But only 4% patient had endometrial thickening and 28% had cystic change in ovary. Histopathological examination of the resected uterus is valuable in defining the endometrial pattern [24]. In the study by Begum, 47% were in proliferative phase, 35% in secretory phase, 12.8% had hyperplasia and 24% had atrophic endometrium [15].

In the study by Banerjee, 22% were in proliferative phase, 16% in secretory phase, 13.8% had hyperplasia and 44% had atrophic endometrium [16]. In comparison to other studies, in this study, 64% were in proliferative phase, 18% in secretory phase, 12% had hyperplasia and 4% had atrophic endometrium.

In the study by Sadikchha & Ganesh proliferative endometrium (37.7%) was most common histopathological findings as in most of the study followed by secretory endometrium (31.2%), hyperplastic endometrium (15.6%), atrophic endometrium (5.2%), endometritis (3.9%), endometrial carcinoma (3.3%), complex endometrial hyperplasia without atypia (2.6%) and simple endometrial hyperplasia without atypia (1.3%) [20].

The incidence of non-neoplastic conditions outnumbered neoplastic conditions. Among non-neoplastic lesions, majority were of proliferative endometrium indicating estrogen imbalance concording with observations done by Dangal [25], Samaletal [26] which is also similar to this present study.

Limitations of The Study

This was a single centered study. It would be better, if this study could be done in multiple centers for longer period with large sample size.

Conclusion and Recommendations

In the present study, non-structural especially patients of AUB (O) group are admitted more in In-patient department. However, it was found that there were no pathognomonic sonographic features that correlate completely with histopathology, so comprehensive tissue examination remains the gold standard. Histopathological examination of endometrium should be done generously in women presenting with AUB especially after the age of 40 years to rule out malignant pathology. D&C itself is a cumbersome procedure in comparism to office procedures for endometrial sampling & there remains a possibility of hysterectomy after the diagnosis is confirmed. But this office procedures for endometrial sampling is neither available nor practiced in Bangladesh.

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