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Original Research Article

A prospective study on abnormal uterine bleeding with sonological and histopathological correlation in women attending tertiary care hospital

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is a common problem among women in the reproductive age group, with reported prevalence in India being 17.9%, AUB has a substantial effect on health-related quality of life and morbidity related if requiring surgeries. The objective of this study was to evaluate various histopathological features in endometrial curetting and co-relate them with transvaginal ultrasonographic findings.
Methods: The study consisted of 500 cases who presented to the Department of Obstetrics and Gynaecology with complaints of abnormal uterine bleeding. Relevant history was elicited from all cases and a clinical examination was done. All cases underwent endometrial biopsy followed by transvaginal ultrasonography before surgery and the results were compared with the histopathological study of the specimen.
Results: 16.7% of patients diagnosed with AUB had severe anemia requiring transfusion of blood. 4.2% of subjects in the study were nulliparous. 59.7% of subjects had an endometrial thickness ranging from 10mm to 14.9 mm in the transvaginal ultrasonographic study. Endometrial carcinoma accounted for 1.4% of the study population. Normal USG findings were seen in 18.1% of patients.
Conclusions: In conclusion, a significant association was found between ultrasound and histopathological findings.

Keywords: Abnormal uterine bleeding, Dilatation and curettage, Endometrial thickness, Histopathological examination, Menorrhagia, Transvaginal sonography

INTRODUCTION

Abnormal uterine bleeding (AUB) is the most common symptom of gynecological conditions, which is defined as any type of bleeding in which the duration, frequency, or amount is excessive for an individual patient.[1] AUB is reported to occur in 9 to 14% of women between menarche and menopause.[1] The prevalence varies in each country. In India, the reported prevalence of AUB is around 17.9% which accounts for more than 70% of all gynaecological consultations in non-pregnant women.[2] AUB can occur at any age in various forms and has different modes of presentation. The acronym PALM-COEIN is standardized nomenclature that is now being widely used for categorizing the causes of AUB that is polyp (AUB-P), adenomyosis (AUB-A), leiomyoma (AUB-L), malignancy and hyperplasia (AUB-M), coagulopathy (AUB-C), ovulatory dysfunction (AUB-O), endometrial (AUB-E), and iatrogenic (AUB-I), and not otherwise classified (AUB-N). The "PALM" classification is structural and assessed visually (imaging and histopathological tests), whereas the "COEIN" classification is nonstructural.[3] AUB has a major impact on a woman's quality of life including the consequences such as anaemia and genital malignancy.[4] Early screening, intervention, and prompt treatment will ensure better outcomes for the condition.[4] Transvaginal ultrasonography is the accepted primary modality for the evaluation of abnormal uterine bleeding. It is a non-invasive, low-cost procedure that does not cause patient discomfort and hence can be used as the first diagnostic step in the evaluation of a woman who presents with abnormal uterine bleeding.[5]

The study aimed at determining the burden of the disease in the population attending the tertiary care hospital with its clinicopathological patterns and evaluate the accuracy of ultrasonography in early diagnosis and management and study the different conditions leading to abnormal uterine bleeding in various age groups with its mode of presentation.

METHODS

A prospective hospital-based study was undertaken on women with menstrual disorders attending outpatient departments and inpatient admissions. AUB was defined by the presence of bleeding from the uterine corpus that was abnormal in volume, regularity, and/or timing, according to what was reported by women. We excluded women with menopausal status (absence of menstruation for at least 12 months after the age of 40 years). Detailed questionnaire-based history was taken after taking consent and confirming the inclusion and exclusion criteria. A detailed general physical and gynecological examination was done. Provisional diagnosis and possible etiology of the disorder and associated conditions were noted down. Following this, patients were subjected to the investigations such as TVS (using 7.5 MHZ vaginal transducer), CBC, and a Histopathological specimen was sent by doing dilation and curettage on an Outpatient basis. The collected data was analysed and sub-classified based on different variables considered in the perform.

SPSS (Statistical Package for Social Sciences) version 20. [IBM SPASS statistics (IBM corp. released 2011)] was used to perform the statistical analysis. Data was entered in the excel spreadsheet. Descriptive statistics of the explanatory and outcome variables were calculated by the mean, standard deviation for quantitative variables, frequency, and proportions for qualitative variables. Inferential statistics like the Chi-square test were applied for qualitative variables. The level of significance was set at 5%

Probability values (p values) of <0.05 were considered to be statistically significant.

Inclusion criteria

Women aged 25 to 50 years, cases of abnormal uterine bleeding in the reproductive and perimenopausal age group (25-50 years) AUB includes any of the following: a menstrual cycle of <24 days; a menstrual cycle of >38 days; irregularity of menses, cycle-to-cycle variation of >20 days during 12 months; duration of flow of >8 days; duration of flow of <3 days; the volume of monthly blood loss >80 ml; the volume of monthly blood loss <5 ml and with signed informed consent to participate in this study.

Exclusion criteria

Vaginal bleeding caused by pregnancy and pregnancy-related factors, vaginitis and other vaginal causes, vaginal bleeding caused by trauma, post-menopausal bleeding women with an intrauterine device in situ, with endocrine disorders bleeding disorders and adnexal pathology.

Ethical committee clearance was obtained from the hospital. The incidence of AUB, its clinical presentation, sonological findings, and histopathological findings was noted.

Statistical analysis

Data was collected in a preformed data sheet. Data were analysed using SPSS version 21 statistical analyses were performed using the chi-square test and student's t-test and results were analysed.

RESULTS

The data of 72 consecutive patients were analysed, and the prevalence of AUB among inpatients at our institute was 45.45% of which 16.6% to 25% underwent total abdominal hysterectomy. The women of reproductive and perimenopausal age groups were included in the study of which 36- to 40-year-old women had a high prevalence of AUB. The most common complaint among the subjects was heavy menstrual bleed accounting for 94.4% of subjects. The duration of which lasted for 6 months to 1 year in 61.1% of subjects, causing considerable health-related discomfort.

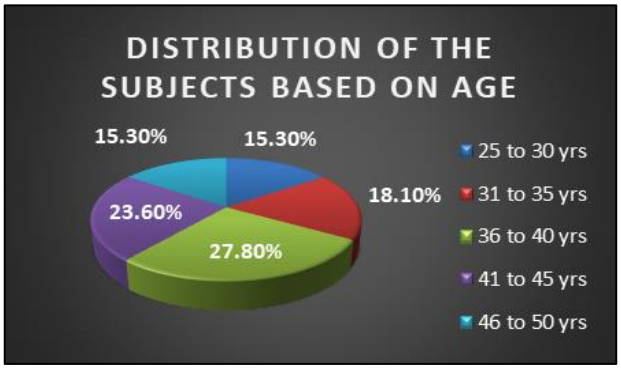

Figure 1: Distribution of subjects based on age.

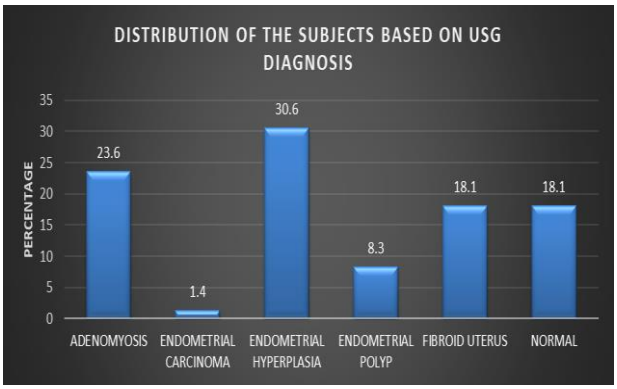

Figure 2: Distribution of the subjects based on USG diagnosis.

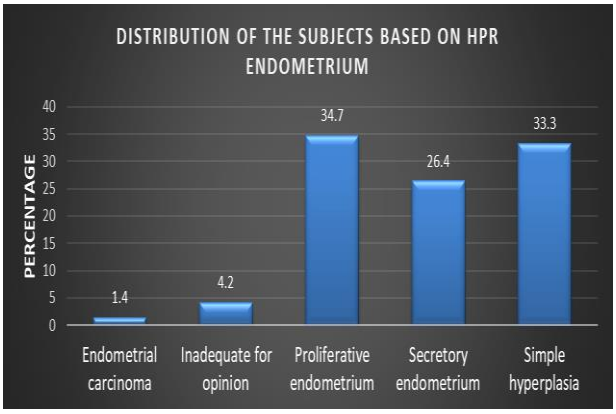

Figure 3: Distribution of the subjects based on HPR endometrium.

16.7% of patients diagnosed with AUB had severe anemia requiring transfusion of blood. 4.2% of subjects in the study were nulliparous. The most common clinical findings were anteverted uterus (79.2%) which is bulky (91.7%). The most common sonological features of the subjects involved in the study were 59.7% of subjects had an endometrial thickness ranging from 10 mm to 14.9 mm in the transvaginal ultrasonographic study. The following were ultrasonographic diagnosis and histopathological of the subjects with myometrial changes adenomyosis (23.6%), fibroid (23.6%), and normal or endometrial hyperplasia in 52.8% of cases. 88.9% of participants did not have any comorbidities. 2.8% had a history of hypothyroidism.

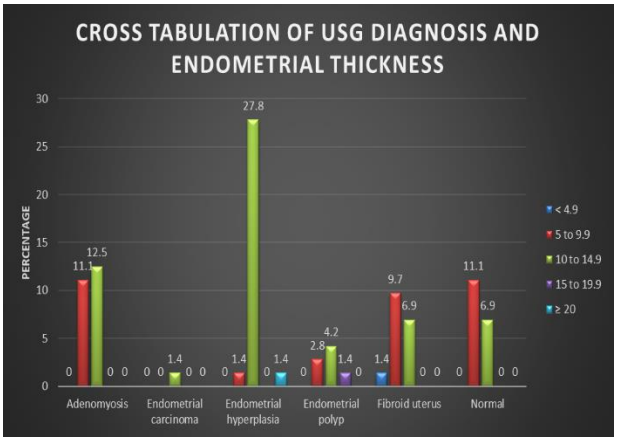

Figure 4: Cross tabulation of USG diagnosis and endometrial thickness.

A total of 30.6% of the study population had USG diagnosis as endometrial hyperplasia, 23.6% had USG diagnosis of adenomyosis, and other diagnosis includes fibroid uterus (18.1%), endometrial polyp (8.3%), endometrial carcinoma (1.4%). Normal USG findings were seen in 18.1% of patients.

Table 1: Cross tabulation of HPR endometrium and endometrial thickness.

HPR endometrium		Endometrial thickness					Total
		<4.9	5-9.9	10-14.9	15-19.9	≥20	
Endometrial carcinoma	Count	0	0	1	0	0	1
	%	0.00	0.00	1.40	0.00	0.00	1.40
Inadequate for opinion	Count	1	0	2	0	0	3
	%	1.40	0.00	2.80	0.00	0.00	4.20
Proliferative endometrium	Count	0	9	15	0	1	25
	%	0.00	12.50	20.80	0.00	1.40	34.70
Secretory endometrium	Count	0	7	12	0	0	19
	%	0.00	9.70	16.70	0.00	0.00	26.40
Simple hyperplasia	Count	0	10	13	1	0	24
	%	0.00	13.90	18.10	1.40	0.00	33.30
Total	Count	1	26	43	1	1	72
	%	1.40	36.10	59.70	1.40	1.40	100.00

34.7% of patients had a histopathological diagnosis of proliferative endometrium, 33.3% of patients had a diagnosis of simple hyperplasia, 26.4% had proliferative endometrium, 4.2% of samples were inadequate for opinion, and among the 72-study population, one patient was diagnosed to have endometrial carcinoma. 43.1% of the subjects in the study underwent a total abdominal hysterectomy.

A crosstabulation was made between USG diagnosis and HPR endometrium using Chi-square tests (Chi-square value-88.47) and a p value of 0.00 was obtained indicating a significant association between the diagnosis. A crosstabulation was made between HPR endometrium and endometrial thickness using Chi-square tests (Chi-square value- 28.99) and a p value of 0.024 was obtained indicating a significant association between the variables.

DISCUSSION

The exact etiology and diagnosis of AUB are often difficult to make thereby posing a difficulty in selecting a treatment protocol. Patients with AUB can present acutely or chronically with heavy menstrual bleeding and/or intermenstrual bleeding.

However, the gold standard for diagnosing AUB is hysteroscopic guided targeted endometrial biopsy, dilation, and curettage were accepted at our hospital for confirming the diagnosis due to their ease and cost-effectiveness.[5] The most common bleeding pattern observed in our study was heavy menstrual bleeding with the maximum incidence of AUB seen in multiparous women. The most common histopathological finding was proliferative endometrium followed by secretory endometrium. 81.7% of the women had bulky uterus during the time of examination most of whom were diagnosed to have fibroid uterus and adenomyosis as sonological diagnosis. 30.6% of subjects diagnosed based on TVS as endometrial hyperplasia had simple hyperplasia as a histopathological diagnosis.[6] Significant correlation was found between USG findings and histopathological findings in the following study.

Audimulapu et al did a comparative study on the diagnostic evaluation of hysteroscopy, TVS, and HPR in 50 cases of AUB, they concluded that TVS reports a practical approach for the initial evaluation of uterine pathology and hysteroscopy evaluation might be needed only in most suspicious cases.[7] The majority of patients who attended the hospital for treatment were suffering for the duration of 6 months to one year. 40.3% of the subjects had mild anemia and 16.7% had severe anemia indicating the severity of the disease in the population.

43.1% of the subjects underwent total abdominal hysterectomy of which the commonest diagnosis was fibroid uterus followed by adenomyosis similar findings were found in a study conducted by Mahajan et al. they also concluded that ultrasonography has good diagnostic accuracy as histopathology in the diagnosis of fibroid in patients with AUB.[8]

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CONCLUSION

In the evaluation of AUB, outpatient transvaginal ultrasound is a simple, non-invasive, and cost-effective tool. Histopathological study of the endometrium will confirm, correlate and categorize AUB and dictates further management. Normal ultrasonography did not rule out endometrial causes of AUB.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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