

# International Journal of Clinical Obstetrics and Gynaecology

ISSN (P): 2522-6614  
ISSN (E): 2522-6622  
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[www.gynaecologyjournal.com](http://www.gynaecologyjournal.com)  
2024; 8(6): 22-25  
Received: 23-08-2024  
Accepted: 08-10-2024

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## Study of clinical and histopathological correlation of abnormal uterine bleeding

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**DOI:** <https://doi.org/10.33545/gynae.2024.v8.i6a.1533>

### Abstract

**Background:** Abnormal uterine bleeding is one of the most common conditions affecting women's quality of life around the world. Any deviation from the normal menstrual cycle can be labelled as abnormal uterine bleeding. It is classified by FIGO's acronym PALM-COEIN. Thorough history taking and examination is essential to provide prompt treatment.

**Aim:** To study the clinical and histopathological correlation in patients with abnormal uterine bleeding.

**Methods:** 30 women who had abnormal uterine bleeding from November 2023 to August 2024 were chosen for the study after fulfilling the inclusion criteria. Patient's history, examination findings, ultrasonography findings along with the histopathological report were noted for the study.

**Results:** In most of the patients were in the age group 41-50 years old followed by 31-40 years old. Minimum number of cases were seen in 21-30 years old. Heavy menstrual bleeding was the most common symptom, followed by dysmenorrhea. The most common diagnosis was fibroid uterus followed by adenomyosis.

**Conclusion:** The majority of the patients were in perimenopausal age group and were multiparous. Heavy menstrual bleeding was the most common complaint followed by dysmenorrhea. Leiomyoma was the most common diagnosis. Proliferative endometrial patterns were common. Simple endometrial hyperplasia in perimenopausal women and complicated hyperplasia in postmenopausal women were the most common findings.

**Keywords:** Abnormal uterine bleeding, heavy menstrual bleeding, dysmenorrhea, endometrial hyperplasia, post-menopausal bleeding, hysterectomy

### Introduction

Menstruation is the visible manifestation of cyclic physiologic uterine bleeding due to shedding of the endometrium following the invisible interplay of hormones mainly through hypothalamus-pituitary-ovarian axis<sup>[1]</sup>.

Only with an intact hypothalamus-pituitary-ovarian axis, responsive endometrium and patent outflow tract menstruation can occur<sup>[1]</sup>.

Menstruation starts. Between 11-15 years (menarche). It cyclically occurs every 21-35 days and ceases between 45-50 years (menopause). Duration of each menses is around 4 to 5 days with an estimated blood loss of 20 to 80ml. Physiological amenorrhea occurs during pregnancy and lactation<sup>[2]</sup>.

Any deviation from normal cycles such as bleeding that is excessive in duration, frequency or amount is defined as abnormal uterine bleeding<sup>[3,4]</sup>.

Patients with AUB usually present with heavy menstrual bleeding, dysmenorrhea, metrorrhagia, irregular bleeding, postmenopausal bleeding etc.<sup>[5,6]</sup>.

Abnormal uterine bleeding is divided based on its cause into structural and nonstructural causes using FIGO's 2011 PALM-COEIN classification. Structural causes of AUB include (PALM) polyps, adenomyosis, leiomyoma, malignancy/hyperplasia. Nonstructural causes of AUB include coagulopathy, ovulatory dysfunction, endometrial causes, iatrogenic causes and causes that are not yet classified<sup>[7]</sup>.

Dysfunctional uterine bleeding is defined as a state of abnormal uterine bleeding without any clinically detectable organic, systemic and iatrogenic causes<sup>[8]</sup>.

To manage a case of AUB the cause must be identified which can be done by thorough history taking, clinical examination, and ultrasonography ultimately histopathological examination.

### Aim and objective

To study the clinical and histopathological correlation in patients with abnormal uterine bleeding.

## Materials

The present study was conducted in the department of Obstetrics and Gynecology of Kamineni institute of medical sciences, a rural tertiary health care center. It is a prospective observational study. Period of study from November 2023 to April 2024. The study was done with a sample size 30.

## Inclusion criteria

1. Patients who gave their written consent and are willing to participate in the study
2. Patients who have abnormal uterine bleeding

## Exclusion criteria

1. Patients who do not give written consent and are not willing to participate in the study
2. Patients who are pregnant
3. Patients who have other (non-uterine) causes of vaginal bleeding such as vaginal tear, vaginal atrophy, cervical cancer, cervical poly etc.

## Methods

All patients with AUB who fulfilled the inclusion criteria were taken into the study. All the patients gave informed written consent to participate in the study. A complete medical history was collected from the patient including the patient's age, parity, education, clinical symptoms such as heavy menstrual bleeding, dysmenorrhea, metrorrhagia, irregular bleeding, postmenopausal bleeding and other symptoms, duration of symptoms and blood loss. Detailed gynecological and obstetric history is obtained. Past medical conditions and past surgical history was noted. Family history relevant to current condition taken. History taking was followed by a thorough general and systemic examination. Local examination also done to assess the female genital tract clinically. Pelvic ultrasonography was also done for all the patients. Specimen obtained from the patient was kept in 10% formalin and sent for histopathological examination.

## Results

After analyzing the data in the present study patients with abnormal uterine bleeding were divided into various categories based on age, parity, symptoms, ultrasonography findings, provisional diagnosis and histopathological result. It was found

that maximum number of patients (27 patients) were in the age group 41-50 years old constituting 54% of the total study group. The least number of patients (2 patients) were seen in the age group 61-70 years old. Patients were distributed according to the number of children they have. Maximum number of patients (29 patients) had 2 children constituting 58% of the total study group. The group of patients with the least number of patients (2 patients) is patients with 4 or more children. Patients were divided according to their main presenting complaint. It was observed that the most common symptom patients with abnormal uterine bleeding was heavy menstrual bleeding (17 patients) constituting 34% of the total study group. The least common symptom seen was metrorrhagia seen in only 1 patient constituting 2% of the total study group. All patients have undergone ultrasonography and the most common finding seen in majority of the patient is fibroid uterus in 20 patients with abnormal uterine bleeding constituting 40%. Least common finding is cervical cancer constituting 4% and seen only in 2 patients. The provisional diagnosis based on history and clinical examination; majority (22 patients) were diagnosed as abnormal uterine bleeding due to leiomyoma constituting 44%. Polyp and cervical cancer were least diagnosed constituting 4% each. On histopathological examination of either endometrial sampling or uterus specimen the most common findings were fibroids constituting 42% (21 patients).

**Table 1:** Distribution based on age

Age 9 Years 0	No. of cases (n=50)	Percentage
Less than 30	8	16%
31-40	10	20%
41-50	27	54%
51-60	3	6%
61-70	2	4%
Greater than 70	0	0%

**Table 2:** Distribution based on parity

Parity	No. of cases (n=50)	Percentage
Nulliparous	7	14%
1	8	16%
2	29	58%
3	4	8%
4	2	4%

**Table 3:** Distribution based on symptom

Clinical symptoms	No. of cases (n=50)	Percentage
Heavy menstrual bleeding	17	34
Dysmenorrhea	9	18
Irregular bleeding	2	4
Heavy menstrual bleeding + irregular bleeding	10	20
Heavy Menstrual Bleeding + dysmenorrhea	8	16
Metrorrhagia	1	2
Post menopausal bleeding	3	6

**Table 4:** Distribution based on ultrasonography

USG diagnosis	No. of cases (n=50)	Percentage
Fibroid	20	40
Adenomyosis	8	16
Fibroid + Adenomyosis	6	12
Polyp	4	8
Endometrial hyperplasia	10	20
Atrophic organs	2	4
Endometriosis	4	8
Ovarian cyst	4	8
Cervical cancer	2	4

**Table 5:** Distribution based on provisional diagnosis

Provisional diagnosis	No. of cases (n=50)	Percentage
Fibroid	22	44
Adenomyosis	10	20
Fibroid + Adenomyosis	6	12
Polyp	2	4
Endometrial hyperplasia	10	20
Endometriosis	8	16
Cervical Cancer	2	4

**Table 6:** Distribution based on histopathology

Histopathology	No. of cases (n=50)	Percentage
Proliferative endometrium	5	10
Atrophic endometrium	4	8
Fibroid	21	42
Adenomyosis	10	20
Fibroid + adenomyosis	6	12
Polyp	4	8
Endometriosis	6	12
Ovarian Cyst	3	6
Cervical cancer	2	4

## Discussion

In the present study, most of the patients were in the age group range of 41 to 50 years old constituting 54% of the total study group. Followed by age group 31 to 40 years constituting 20% of the total study group. Similar results were noted in Rizvi *et al.*<sup>[9]</sup> which showed 44.5% of cases in the age group range of 42-50 years. In a study conducted by Bharati Misra *et al.*<sup>[10]</sup> 41.25% of the cases are between the ages of 41 and 50.

In most of the patients were in the 2-parity group constituting 58% and the least number of cases were 4-parity patients constituting only 4%. In study conducted by Bharati Misra *et al.*<sup>[10]</sup> most of the cases were second parous constituting 58% of the total and contradictory to the present study the least number of cases were seen in unmarried women constituting 1.75%. In a similar study conducted by Mohammad *et al.*<sup>[11]</sup> 65.9% of the patients were second parous.

The current study shows that the most common complaints that patients came with is heavy menstrual bleeding constituting 34%, followed by heavy menstrual bleeding with irregular cycles constituting 20%, and the least common complaint is metrorrhagia constituting 2%. In a study conducted by Tyagi *et al.*<sup>[12]</sup> it was noted that the most common complaint the patients has was heavy menstrual bleeding constituting 41.3%. And the least common complaint was metrorrhagia constituting 6%. In a similar study conducted by Bharati Misra *et al.*<sup>[10]</sup> it was observed that the most common complaints the patients came with was heavy menstrual bleeding constituting 51.5% followed by dysmenorrhea constituting 15%.

The present study has analyzed the distribution of patients with abnormal uterine bleeding based on ultrasound findings. The most common ultrasound finding was fibroid uterus constituting 40%. The second most common ultrasound finding is endometrial hyperplasia, constituting 20% of the total study group. The least common finding carcinoma cervix constituting only 4% of the study group. In a similar study done by Bharati Misra *et al.*<sup>[10]</sup> the most common was also fibroid uterus constituting 48.25% cases followed by adenomyosis constituting 25.75% cases. Another study was done by Ritviz *et al.*<sup>[9]</sup> it was found that the most common ultrasonographic finding was fibroid uterine in 41.46% of cases and adenomyosis in 46.36%.

In the current study the study group was distributed based on the provisional diagnosis given by the clinician only based on the history of the patient and their clinical findings. The maximum number of patients were given the clinical diagnosis of abnormal uterine bleeding caused by fibroid uterus constituting 44%. Followed by endometrial hyperplasia and adenomyosis constituting 20% of the total study group each. In a similar study done by Ratnani R *et al.*<sup>[13]</sup> also shows the most common diagnosis to be abnormal uterine bleeding caused by fibroid uterus constituting 47.89% of the total study group.

In the present study patients underwent endometrial sampling and they are distributed according to the result of the

histopathological examination. Some patients even underwent hysterectomy with or without unilateral/ bilateral salpingo-oophorectomy. The specimen is sent to the lab in 5% formalin for histopathological examination. The most common finding was fibroid constituting 42% and least common finding was atrophic endometrium and benign polyp constituting 8% of the total study group each. Another study by Ratnani R *et al.*<sup>[13]</sup> leiomyoma (35%) was the most common cause of AUB, followed by malignancy and hyperplasia, adenomyosis and ovulatory dysfunction. In a similar study done by Doraiswami *et al.*<sup>[14]</sup>, it was seen that most of the uterus specimen had fibroids in cases of abnormal uterine bleeding.

## Conclusion

In this study done with 50 patients with abnormal uterine bleeding it was noted that majority of the patients with abnormal uterine bleeding were in the peri-menopausal age group. They were likely to have 2 children. The most common complaint is heavy menstrual bleeding. The most common provisional diagnosis, ultrasound findings and histopathological findings show abnormal uterine bleeding is most caused by fibroids in the current study. Hence correlation between the symptoms, clinical findings of the patients and the histopathological diagnosis is present and understood.

## Acknowledgments

It has given me great pleasure to write this paper, and I would like to take this opportunity to convey my heartfelt gratitude to Dr. Sunita Sudhir, HOD and professor department of OBGYN, KIMS for giving me her valuable time to guide me in the research required for this paper.

I would like to thank my fellow postgraduates for their valuable inputs which has significantly helped to make this research paper.

I would like thank authors of all the numerous publications whose research and knowledge which have greatly impacted in the preparation of this dissertation.

Last but not the least my sincere gratitude to all patients involved in this study group for co-operating whole heartedly.

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**How to Cite This Article**

Sri GS, Sudhir S. Study of clinical and histopathological correlation of abnormal uterine bleeding. *International Journal of Clinical Obstetrics and Gynaecology.* 2024; 8(6): 22-25.

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