



## Histopathology of Endometrial Biopsies in Cases of Abnormal Uterine Bleeding- A Four Year Study

Authors

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### Abstract

**Background:** Abnormal uterine bleeding (AUB) is the bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause and is caused by a variety of disorders.

**Materials and Methods:** This is an observational study conducted at the department of Pathology at MGM Hospital, Navi Mumbai. A total number of 402 endometrial curettage specimens were obtained and studied over a period of 4 years from January 2013 till December 2016.

**Objectives:** The objective of our study was to evaluate the different histopathological patterns in the dilatation and curettage samples of females presenting with abnormal uterine bleeding.

**Result and Conclusion:** In our study, proliferative phase endometrium and hyperplasia without atypia were most common in the reproductive age group.

**Keywords:** abnormal uterine bleeding, endometrial hyperplasia, proliferative endometrium.

### Introduction

Abnormal uterine bleeding (AUB) is defined as the bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause<sup>[1]</sup>. It is caused by a variety of systemic diseases such as anovulation, fibroids, polyps, adenomyosis and endometrial causes like endometritis, hyperplasia, disordered proliferative endometrium, cyclical endometrium, polyps and malignancy, endocrine disorders and pregnancy. The most common presentations are menorrhagia, polymenorrhoea, metrorrhagia, and intermenstrual bleeding. Dilatation and Curettage is the mainstay of endometrial sampling and is a safe and effective diagnostic step in evaluation of abnormal uterine

bleeding.<sup>[2]</sup> Histopathological examination of these endometrial biopsies and curettings is considered the gold standard for diagnosis of the etiology of AUB<sup>[1]</sup>.

### Materials and Methods

This observational retrospective-prospective study was conducted in the department of Pathology of a tertiary hospital. A total of 402 patients presenting with abnormal uterine bleeding over a period of 4 years between January 2013 till December 2016 and who underwent D&C were included in the study. The age group of the patients presenting with AUB was from 18 to 75 years. The causes of AUB in this study included endometritis, endometrial hyperplasia, polyp, proliferative and secretory phases of

endometrium, disordered proliferative and atrophic endometrium and endometrial carcinoma. Patients with bleeding disorders, cervical or vaginal pathology, leiomyoma, pregnancy and inadequate endometrial samples sent for histopathology were excluded. Relevant clinical data regarding age, pattern and duration of abnormal bleeding, menstrual history and gynaecological examination findings were obtained from case records from Medical Records Department.

**Results**

A total of 402 endometrial curettage specimens were obtained and studied. The patients’ age was ranged from 18 to 75 years and most of the curettages were seen in the age group of 46-50 years. The commonest pathology observed in the study was endometrial hyperplasia in 121 (30.09%) patients, followed by proliferative endometrium seen in 87 (21.64%) patients and secretory endometrium in 50 (12.43%) patients. Endometrial carcinoma was seen in 12 (2.98%) cases.

**Discussion**

In our study the age of the patients presenting with AUB was from 18 to 75 years. Table 1 shows that the patients were divided in 3 age groups: 18-45 years (reproductive), 46-50 years (perimenopausal) and ≥51 years (postmenopausal). A total of 175 (43.53%) patients presenting with AUB were seen in the perimenopausal age group (45-50 years). Our study and other studies have found a maximum incidence of AUB in the perimenopausal age group. [3-6] followed by 168 (41.80%) patients in the reproductive age group (18-45 years) and 59 (14.67%) in the postmenopausal age group (≥51years).

**Table 1:** Age distribution of patients

Age Group (Years)	Total	Percentage
18-45	168	41.80
46-50	175	43.53
≥51	59	14.67
Total	402	100

Table 2 shows the histopathological examination of the endometrium and its various histological patterns in different age groups.

In our study, proliferative phase endometrium and hyperplasia without atypia were most common in the reproductive age group making 48 (28.57%) and 35 (20.83%) cases respectively followed by endometrial polyp seen in 29 (17.26%) cases. In the menopausal age group, the most common cause of AUB was again hyperplasia without atypia seen in 69 (39.42%) cases followed by proliferative phase endometrium in 31 (17.71%) and endometritis observed in 24 (13.71%) patients. Endometrial carcinoma was observed to be most common in the menopausal age group and was seen in 9 (15.25%) cases.

**Table 2:** Histopathological diagnosis of different age groups

Histopathological Patterns	Age Group (Years)			Total	Percentage
	18-45	46-50	≥51		
Proliferative	48	31	8	87	21.64
Secretory	28	16	6	50	12.43
Atrophic	-	2	7	9	2.23
Endometrial Polyp	29	7	5	41	10.2
Endometritis	17	24	6	47	11.7
Disordered Proliferation	11	19	5	35	8.70
Hyperplasia Without Atypia	35	69	7	111	27.61
Hyperplasia With Atypia	-	4	6	10	2.50
Endometrial Carcinoma	-	3	9	12	2.98
Total	168	175	59	402	100

**Endometrial hyperplasia** was the most common histological pattern observed in our study and was seen in 121 cases (30.09%). Studies conducted by Riaz et al have reported a similar incidence with 26% respectively [7].

Endometrial hyperplasia is a precursor of endometrial carcinoma [3] and the overall risk of progression of hyperplasia to cancer is 5-10%. [2] Such patients should be followed up regularly.

**Proliferative and secretory phase** - Predominant number of patients in the age group 18-50 years showed these normal physiological changes. Proliferative endometrium was the second most common pattern observed in this study and was seen in 87 out of 402 (21.64%) patients followed by secretory endometrium in 50 (12.43%). A similar

incidence of secretory pattern (16.6%) was noted by Bhosle et al.<sup>[4]</sup>

**Disordered proliferative endometrium** resembles normal proliferative tissue consisting of glands lined by cytologically bland, pseudostratified, proliferative, mitotically active epithelium and in having a normal ratio of glands to stroma and it occurs predominantly in perimenopausal women. In our study, this pattern was observed in 35 (8.70%) cases which was similar to the study by Gopalan U et al.<sup>(8)</sup>

**Atrophic endometrium** is the most one of the most common causes of bleeding in postmenopausal stage.<sup>[9]</sup> Thin walled veins, superficial to the expanding cystic glands, make the vessels vulnerable to injury and lead to excessive uterine bleeding.<sup>[10]</sup> In our study, 15.25% of post menopausal women showed atrophic endometrium on dilatation and curettage. A previous study done by Mahapatra et al<sup>[11]</sup> showed similar findings.

**Endometrial carcinoma** The malignant conditions observed in this study included 12 cases of endometrial carcinoma and had an incidence of 2.98%. The predominant type of observed was endometrioid type which constituted 9 cases. Six cases were classical endometrioid adenocarcinoma and villoglandular variants and three were endometrioid carcinoma with squamous differentiation. Tiwari et al<sup>[12]</sup> showed a similar incidence of 5%.

### Conclusion

Abnormal uterine bleeding is a pathology which affects various age groups and the cause varies with different age groups. Endometrial biopsy is an important tool to diagnose different gynaecological conditions in patients and to detect pre-neoplastic lesions like hyperplasia with atypia or frank malignancy and thus help the clinicians to plan therapy for successful management of AUB.

**Acknowledgements:** None

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