IJPRP

Indian Journal of Pathology: Research and Practice
Volume 9 Number 2 (Part I), May – August 2020
DOI: http://dx.doi.org/10.21088/ijprp.2278.148X.9220.5

*Original Research Article*

# Histopathological Changes of Endometrium in Abnormal Uterine Bleeding

**Chitturi Ramya[1], Madhavi Kalakonda[2], Mikilineni Anupama[3]**

[1]Assistant Professor, Department of Pathology, NRI Medical College, Chinnakakani, Mangalgiri, Guntur, Andhra Pradesh 5220010, [2]Assistant Professor, Department of Pathology, Siddhartha Medical College, Gunadala, Vijayawada, Andhra Pradesh 520008, [3]MD Pathologist, Department of Pathology, Manipal Hospital, Vijaywada, Andhra Pradesh 522501, India.

**Corresponding Author:**

**Madhavi Kalakonda,** Assistant Professor, Department of Pathology, Siddhartha Medical College, Gunadala, Vijayawada, Andhra Pradesh 520008, India.

**E-mail:** dr.madhavi.k.smc@gmail.com

**How to cite this article:**

Chitturi Ramya, Madhavi Kalakonda, Mikilineni Anupama. Histopathological Changes of Endometrium in Abnormal Uterine Bleeding. Indian J Pathol Res Pract 2020;9(2 Part I):33–36.

**Abstract**

*Context:* Abnormal Uterine Bleeding is defined as bleeding that does not fall within the normal ranges of amount, frequency, duration or cyclicity of normal pattern of a menstrual cycle. It has a significant negative impact on the quality of life. Endometrial sampling is done to evaluate various lesions and rule out malignancy.

*Aims:* To study the histopathological changes of endometrium in Abnormal uterine bleeding and to study incidence among different age groups.

*Settings and Design:* This study is a retrospective descriptional study done in the Pathology laboratory for two years from January 2016 to December 2017.

*Methods and Material:* All the Data regarding the patient is collected from the Pathology records. Cases with known structural causes were excluded from the study.

*Statistical Analysis used:* Results were analysed in the form of percentages.

*Results:* A total number of 184 cases were included in the study. The most common age group for abnormal uterine bleeding was 41–50 yrs. The most common finding was the proliferative phase, followed by simple hyperplasia and secretory phase.

*Conclusions:* There is an age related incidence of Abnormal Uterine Bleeding, with a higher incidence in 41–50 year age group. Endometrial curettings and biopsy are essential diagnostic procedures in the evaluation of Abnormal Uterine Bleeding, which help in guiding the treatment.

**Keywords:** Abnormal uterine bleeding; Endometrium; Menorrhagia.

**Keymessages:** Histopathological findings of endometrial lesions in AUB varies from proliferative endometrium to complex hyperplasia. Normal cyclical changes like Proliferative endometriumor secretory endometrium are the common findingsin AUB. Histopathological study is a safe and effective method not only for diagnosis but also for management of AUB.

## Introduction

Abnormal Uterine Bleeding (AUB) is defined as bleeding from the uterine corpus that is abnormal in volume, regularity and timing and has been present for the majority of the past six months.[1] It includes both Dysfunctional Uterine Bleeding (DUB) and bleeding from structural causes like fibroids, polyps, carcinoma and pregnancy complications. DUB is defined as AUB without a demonstrable organic cause (due to functional causes).

It occurs in 9–14% of women between menarche and menopause, significantly impacting the quality of life and imposing financial burden.[2] It is considered as one of the most common and challenging problems presenting to gynaecologist regardless of age.[3] The cause of bleeding is established in only 50–60% of cases despite a thorough clinical history and examination.[4] Diagnostic techniques available for the evaluation of AUB are endometrial biopsy and curettings. The sensitivity of endometrial biopsy for the detection of endometrial abnormalities has been reported to be as high as 96%.[5,6] The manifestations of the disease can be identified by histological variations of endometrium considering the age of the woman, phase of her endometrial cycle and iatrogenic use of hormones.[7]

The aim is to study the histopathological changes of endometrium in AUB and to study incidence of AUB among different age groups.

## Subjects and Methods

It was a retrospective descriptional study done on endometrial samples received in our Pathology laboratory from January 2016 to December 2017. The study material included endometrial curettings, endometrial biopsies and hysterectomy specimens.

*Inclusion criteria:* patients with unknown cause for heavy bleeding were included.

*Exclusion criteria:* Those with known structural causes like leiomyomas, adenomyosis, cervical pathology were excluded from the study. Pregnancy complications (ectopic pregnancy, molar pregnancy) were also excluded.

Relevant clinical details and ultrasound findings were collected wherever possible. The gross appearances of colour and volume were noted along with microscopic features.

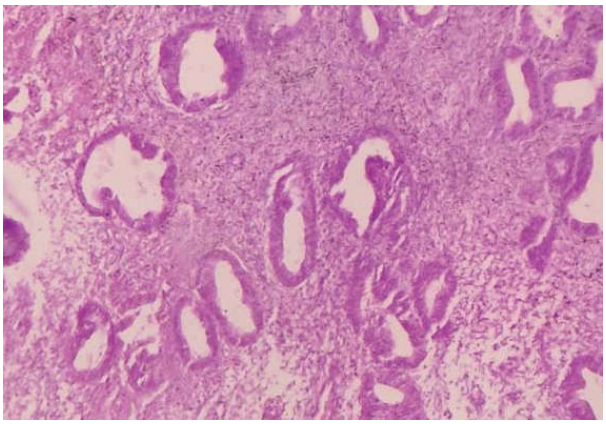

**Fig. 1a:** Proliferative endometrium.

## Results

A total of 184 samples were included in our study. The age of patients ranged from 20 yrs to 60 yrs. Mean age of the patient was 40.7 years. Endometrial samples were adequate in 180 cases and inadequate in 4 cases. Among 184 cases, we received slides for the second opinion in 1 case. Most of the patients presented with complaints of menorrhagia, irregular bleeding per vagina and postmenopausal bleeding. AUB was most commonly seen in the age group 41–50 yrs (Table 1).

**Table 1:** Cases of AUB in relation to age.

| S. No | Number of Cases | Percentage |
|---|---|---|
| 11–29 yrs | 1 | 0.5% |
| 21–30 yrs | 18 | 9.8% |
| 31–40 yrs | 55 | 30% |
| 41–50 yrs | 98 | 53.2% |
| 51–60 yrs | 12 | 6.5% |

The most common microscopic finding is proliferative endometrium as shown in Fig. 1a (42.9%) followed by simple hyperplasia without cytologic atypia in Fig. 2a (14.7%), secretory phase in (Fig. 1a) (12.55%) and simple cystic hyperplasia (10.3%). The other findings include endometritis, atrophy (Fig. 2b), disordered proliferation, pill endometrium, etc. (Table 2).

**Table 2:** Histopathological findings of AUB in our study.

| S. No. | Histopathological finding | No of Cases (*n*=184) | Percentage |
|---|---|---|---|
| 1 | Proliferative | 79 | 42.9% |
| 2 | Simple hyperplasia without atypia | 27 | 14.7% |
| 3 | Secretory | 23 | 12.5% |
| 4 | Simple cystic hyperplasia | 19 | 10.3% |
| 5 | Pill endometrium | 11 | 6% |
| 6 | Atrophy | 8 | 4.4% |
| 7 | Complex hyperplasia without atypia | 4 | 2.2% |
| 8 | Inadequate | 4 | 2.2% |
| 9 | Disordered proliferation | 3 | 1.6% |
| 10 | Endometritis | 2 | 1.1% |
| 11 | Complex hyperplasia with atypia | 2 | 1.1% |
| 12 | Simple hyperplasia with atypia | 1 | 0.5% |
| 13 | Regressive cystic change | 1 | 0.5% |

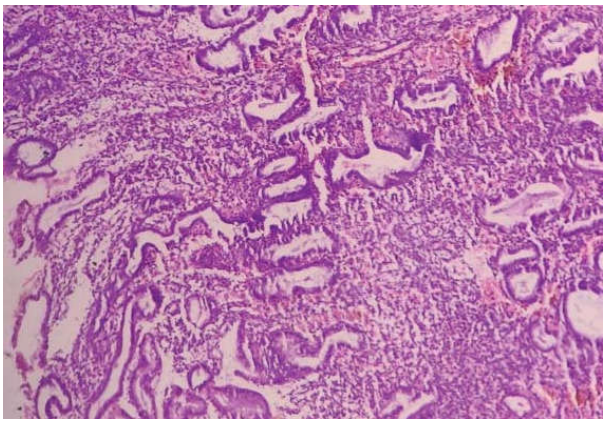

**Fig. 1b:** Secretory endometrium.

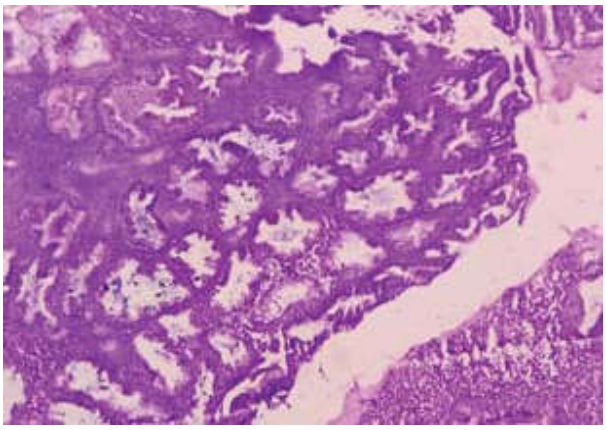

**Fig. 2a:** Simple hyperplasia.

Regular cyclical changes were observed in majority (55.4%) of cases and were the predominant findings from 20–50 yrs. Hyperplasias and atrophic smears were commonly seen after 50 yrs (Table 3).

**Table 3:** Endometrial morphology in relation to age group.

| Microscopic Appearance | 11–20 yrs | 21–30 yrs | 31–40 yrs | 41–50 yrs | 51–60 yrs | Total(%) |
|---|---|---|---|---|---|---|
| Normal cyclical changes | 1 | 12 | 33 | 54 | 2 | 102(55.4%) |
| Benign lesions | 0 | 4 | 4 | 8 | 1 | 17(9.2%) |
| Atrophy | 0 | 0 | 0 | 4 | 4 | 8(4.4%) |
| Hyperplasia | 0 | 2 | 17 | 29 | 5 | 53(28.8%) |
| Inadequate | 0 | 0 | 1 | 3 | 0 | 4(2.2%) |

## Discussion

AUB is one of the most frequently encountered complaints in Gynaecologic department. Routine investigations include Prothrombin Time (PT), Activated Partial Thromboplastin Time (APTT) and liver function tests were done to rule out bleeding or coagulation disorders. Urine and serum Human chorionic gonadotropin (HCG) levels were estimated in the reproductive age group. Thyroid profile, Follicle stimulating hormone (FSH),

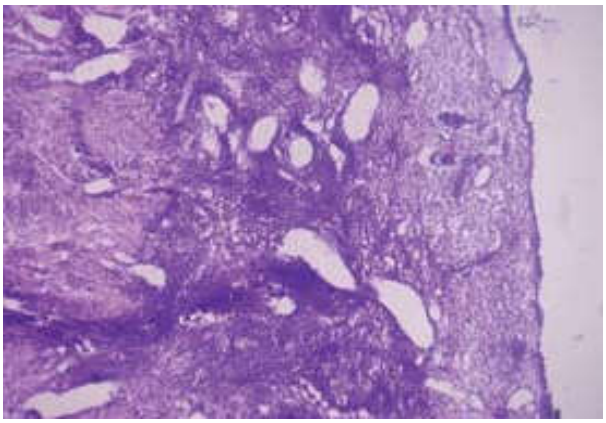

**Fig. 2b:** Atrophic smear.

Luetinizing Hormone (LH) and prolactin levels were evaluated to rule out endocrine etiology. After evaluating with ultrasound, endometrial sampling was done finally to know the cause for bleeding.

AUB was most commonly seen in 41–50 year age group (53.2%). Gopalan et al. and Doraiswami et al. also reported high incidence in that age group with 54.7% and 33.5% cases respectively.[7,8] Proliferative endometrium was the most common finding (42.9%) in our study followed by simple hyperplasia (14.7%) whereas Radhika et al. and Gopalan et al. reported proliferative phase 25.84% and 47.3% as the most common finding followed by secretory phase (19.10%), (16.1%) respectively.[7,9]

Disordered proliferation was found in 1.1% of cases in our study which is lower compared to 6.2% cases by Gopalan et al. and 6.56% cases by Bhatta et al.[7, 10] Endometritis was observed in 1.1% of cases in our study, which is slightly higher than Gopalan et al. (0.7%) and lower compared to Radhika et al. (4.49%) and Damle et al. (5.68%).[7,9,11] Atrophic endometrium was found in 4.4% cases in our study, whereas Radhika et al. found atrophic endometrium in 3.37% cases and Cornitescu et al., in 4.34% cases.[9, 12]

Incidence of simple endometrial hyperplasia was 25.5% and complex hyperplasia was 3.3% cases in our study. Radhika et al. and Shweta et al. reported a lower percent of simple hyperplasia cases (6.74% and 16.5% respectively) and higher percent of complex hyperplasia cases (12.35% and 4.75%).[9,13]

Dilatation and Curettage (D & C) can be diagnostic, as well as a therapeutic procedure.[14] Young patients with normal endometrium can be treated conservatively with medical and hormonal therapy, while surgical intervention is usually required in perimenopausal and postmenopausal causes.[15]

Histopathological findings of endometrial lesions in AUB varied from proliferative endometrium to complex hyperplasia in our study. Proliferative

endometrium was the most common finding in our study. AUB was seen most commonly in 41–50 yr age group and hyperplasias were the common cause of AUB in that age group. Histopathological study is a safe and effective method not only for diagnosis but also for management of AUB.

*Acknowledgement:* NIL

## References

1. Munro MG, Critchley HO, Broder MS, Fraser IS; FIGO Working Group on Menstrual Disorders. FIGO classification system for causes of abnormal uterine bleeding in nongravid women of reproductive age. Int J Gynaecol Obstet. 2011;113(1):3–13.
2. Mary GS, Tarin AS, Patrice MW. Evaluation and management of abnormal uterine bleeding in premenopausal women. Am Fam Physician. 2012; 85(1):35–43.
3. Ozdemir S, Celik C, Gezginc K Kıreşi D, Esen H. Evaluation of endometrial thickness with transvaginal ultrasonography & histopathology in premenopausal women with abnormal vaginal bleeding. Arch Gynecol Obstet. 2010;282(4):395–9.
4. Kotdawala P, Kotdawala S, Nagar N. Evaluation of endometrium in peri-menopausal abnormal uterine bleeding. J Midlife health. 2013;4(1):16–21.
5. Stovall TG, Ling FW, Morgan PL. A prospective randomized comparison of the Pipelle endometrial sampling device with the Novak curette. Am J Obstet Gynecol. 1991;165(5,1):1287–90.
6. Litta P, Merlin F, Saccardi C, Pozzan C, Sacco G, Fracas M. Role of hysteroscopy with endometrial biopsy to rule out endometrial cancer in postmenopausal women with abnormal uterine bleeding. Marturitas. 2005;50(2):117–23.
7. Gopalan U, Rajendiran S, Karnaboopathy R. Study of endometrial histopathology in women with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol. 2017;6:824–8.
8. Doraiswami S, Johnson T, Rao S, et al. Study of endometrial pathology in abnormal uterine bleeding. J Obstet Gynaecol India 2011;61(4):426–430.
9. Gollapudi R, Prayaga A. Abnormal uterine bleeding-utility of dilatation and curettage in identifying isolated endometrial pathology. J. Evid. Based Med. Healthc. 2016;3(97):5324–28.
10. Bhatta S, Sinha AK. Histopathological study of endometrium in abnormal uterine bleeding. J Pathol Nepal. 2012;2:297–300.
11. Damle RP, Dravid NV, Suryawanshi KH, Gadre AS, Bagale P S, Ahire N. Clinicopathological spectrum of endometrial changes in peri-menopausal and post-menopausal Abnormal Uterine Bleeding: a 2 year study. J Clin Diagn Res. 2013;7(12):2774–6.
12. Cornitescu FI, Tanase F, Simionescu C, et al. Clinical, histopathological and therapeutic considerations in non-neoplastic abnormal uterine bleeding in menopause transition. Rom J Morphol Embryol 2011;52(3):759–765.
13. Agarwal S, Mathur A, Vaishnav K. Histopathological study of endometrium in abnormal uterine bleeding in women of all age groups in Western Rajasthan (400 cases). International Journal of Basic and Applied Medical Sciences.2014;4:pp15–8.
14. Mencoglia L, Perino A, Hamou J. Hysteroscopy in perimenopausal and postmenopausal women with abnormal uterine bleeding. J Reprod Med. 1987;32:577–82.
15. Singh A, Bai RPV. Study of histopathological pattern of endometrium in abnormal uterine bleeding and its management. Int J Reprod Contracept Obstet Gynecol 2016;5:432–6.