International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2014): 5.611

# Histopathological Pattern of Endometrium in Abnormal Uterine Bleeding

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**Abstract:** ***Abnormal uterine bleeding (AUB) is one of the commonest complaints in women and when it occurs without organic lesions like tumor, inflammation, it is called as dysfunctional uterine bleeding. The aim of this study was to find the histopathological pattern of endometrium in abnormal uterine bleeding in all age groups.This is a prospective cohort study of 221 patients admitted over the period 2012 and May 2014 to the Obstetric Gynecologic University Hospital"Queen Geraldine", in Tirana, Albania.Cases of AUB with a probable endometrial cause were included in the study. The most common histological pattern of endometrium includes Secretory (29%) followed by Proliferative endometrium(25%), disordered proliferative (13%) and endometrial hyperplasia(7%).All patients having abnormal menstrual bleeding should be subjected to dilatation and curettage to rule out endometrial pathology.***

**Keywords:** abnormal uterine bleeding, endometrium, histological pattern

## 1. Introduction

Abnormal uterine bleeding (AUB) is one of the commonestcomplaints leading to endometrial sampling byendometrial biopsy or curettage. Examination ofendometrial biopsy is a challenge to practicingpathologists, largely due to the wide range ofmorphologic patterns resulting from both normal andabnormal changes, exogenous hormones, infectionsand intrauterine tumor (1). Abnormal uterine bleedingmay be defined as bleeding pattern that differs infrequency, duration and amount from a patternobserved during a normal menstrual cycle or aftermenopause. It is a common problem having a long listof causes in different age groups (2). It interferessignificantly with the quality of life in an otherwisehealthy woman (3). In order to evaluate endometrialsamples information regarding age and menstrualhistory with clinical examination are a prerequisite (4).Histological examination of the submitted endometrial tissue remains the standard diagnostic procedure for the assessment of abnormal uterine bleeding. In addition, accurate histopathological diagnosis facilitates the implementation of optimal treatment strategies 4. Endometrium is a dynamic, hormonally sensitiveand responsive tissue which constantly andrhythmically undergoes changes in the activereproductive life. Abnormal uterine bleeding may be defined as a bleeding pattern thatdiffers in frequency, duration and amount from apattern observed during a normal menstrual cycleor after menopause (5). AUB is one of the mostcommon problems in women of all agesespecially those in the peri-menopausal agegroup. The abnormal bleeding can be caused by awide variety of disorders and it is one of the commonest complaints leading to endometrialsampling. It may represent a normal physiologicalstate, and observation alone may be warranted.Alternatively, the bleeding can be a sign of aserious underlying condition necessitatingaggressive treatment. Dilatation and curettage is auseful and cost effective method of detectingintrauterine pathologies and very few lesionsescape detection (6). Wide range of morphologicpatterns resulting from both normal and abnormalchanges offer a diagnostic challenge topracticing pathologists.Histopathological diagnosis varies according to the age with endometrial hyperplasia and cancer are higher in peri and postmenopausal women while in younger age groups, changes related to hormonal effects seems to be more common. Histological characteristics of endometrial biopsy material as assessed by light microscopy remain the diagnostic standard for the clinical diagnosis of endometrial pathology. Indeed, the initial diagnosis is made by endometrial biopsy or by curettage, which in itself may be therapeutic. Conversely, the biopsy or curettage may not sample the entire endometrium, and the areas of greatest histological or cytological severity may thus escape histological identification. Management of AUB is not complete without tissue diagnosis especially in perimenopause and post menopause. AUB may be thesymptom of endometrial carcinoma in 8–50% of cases (7). The aim of this study was to find the histopathological pattern of endometrium in abnormal uterine bleeding in all age groups.

## 2. Materials and Methods

This is a prospective cohort study of221 patients admitted over the period 2012 and May 2014 to the Obstetric Gynecologic University Hospital"Queen Geraldine", in Tirana, Albania.Patients with a gestational cause, hemostatic disorders, isolated cervical or vaginal pathology, and leiomyoma excluded. Relevant clinical data regarding age, pattern and duration of abnormal bleeding, menstrual history, obstetric history, use of exogenous hormones, physical and gynecological examination findings, lab investigation results, and sonological and hysteroscopic findings were collected. Detailed clinical history like age, menstrual status including pattern, period & regularity of cycle were obtained relevant findings of general, systemic examination were recorded. Patients were categorized intoreproductive (<40 yrs), perimenopausal (40-50yrs) andpostmenopausal (>50yrs) age groups. Histopathologicaldiagnosis was made, recorded and furthercategorization was done for all cases. All the specimens were fixed in 10% formalin, processed and embedded in paraffin, and 3-4 µ thick sections were made. Sections were stained with hematoxylin and eosin stain.

## 3. Results and Discussion

A total of 221 endometrial specimens submitted witha clinical diagnosis of AUB were studied.Patients' age ranged from 18-59 years and most of themwere seen in the age group of <40 years, followed by40-50 years. The commonest complaint was menorrhagia in98 patients (44%).Twenty four (11%) of patients were nulliparous, 71 (32%) were primiparous and 126 (57%) multiparous. In our study, 64%% of the patients were of normalweight, 20%% patients were overweight, and 16% wereobese. The most frequent pathology observed in the study wasSecretory endometrium in 64 (29%) of patients followed by proliferativeproliferative endometrium in 55 (25%)patients.Abnormal vaginal bleeding is defined as the appearance of blood at the vaginal introitus exclusive of normal menstruation and could present as menorrhagia, metrorrhagia, polymenorrhea, metromenorrhagia, peri and postmenopausal bleeding. Abnormal uterine bleeding can be caused by a wide variety of disorders, It might be part of normal physiological state such as adolescence, perimenopausal, lactation and pregnancy or it may be caused by a pathological process that is not directly related to the uterus such as hyper androgenic anovulation in patients with polycystic ovaries, hypothalamic dysfunction, hyperprolactinemia, hypothyroidism, pituitary disease, premature ovarian failure and iatrogenic causes such as irradiation or chemotherapy. The bleeding could be a sign of an underlying localized condition including benign tumors, malignancy and infection. Endometrial cancer and premalignant atypical hyperplasia are likely causes of abnormal bleeding in peri and postmenopausal bleeding. In the present study, the two most common endometrial histopathological patterns in all three age groups were secretory and proliferative endometrium. The bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding and is characterized by regular episodes of heavy menstrual blood loss. The main defect is in the control of processes regulating the volume of blood lost during the menstrual breakdown of endometrium (8). This pattern was commonly observed in the late reproductive and perimenopausal women in our study and other studies and may be due to the hormonal imbalance in this group leading to intermittent anovulatory cycles. The maximum incidence of AUB was in the <40 years age range 121 (55%) patients, followedby 40-50 years age group 83 (38%) patients. Our study and other studies have found a maximum incidence of AUB in the perimenopausal age group (9, 10). Perimenopause is defined by the as the 2-8 years preceding menopause and the 1 year after the final menses (11). As women approach menopause, cycles shorten and often become intermittently anovulatory due to a decline in the number of ovarian follicles and fluctuations in the estradiol level leading to various patterns of abnormal bleeding (12)Our study and other studies found menorrhagia as the most common complaint (13). Most of our patients were in the low parity category.Disordered proliferative endometrium is an exaggeration of the normal proliferative phase without significant increase in the overall ratio of glands to stromaand is due to persistent oestrogen stimulation (14). This pattern is particularly seen in perimenopausal women. This pattern was seen in 19 (12.2%) of our cases.

Endometrial hyperplasia was the most common histological pattern observed in our study and was seen in 55 (25%) cases. The incidence of endometrial hyperplasia without and with atypia peaks in the early 50s and early 60s respectively (15). In the present study, the maximum incidence of hyperplasia was noted in the 40-50 year age group and was seen in 9 (60%) of patients. This finding is similar to other studies (16). Among women undergoing endometrial biopsy or hysterectomy, the prevalence of endometrial polyps is 10-24%; the incidence rises with increasing age, peaks in the fifth decade of life and gradually declines after menopause (17). The present study showed a progressively increasing detection pattern of endometrial polyps in older age, 5.6% in the age group of <40 years, 10.2% in the age group of 40-50 years old and 13.1% in age group >50 years, our result is comparable to other studies (18). There is no direct evidence for a greater propensity of polypoid endometrium to undergo malignant change compared to the adjacent normal endometrium.. The present study shows that the detection rate of endometrial carcinoma increase with increasing age, 0.3% in reproductive age group, 1.5% in perimenopausal age group and 3.3% in post menopausal age group. This finding is similar to other studies (19). Endometrial hyperplasia is a precursor of endometrial cancer. Abnormal uterine bleeding in postmenopausal women requires further evaluation to exclude malignancies (6. 5). In this study complex hyperplasia with atypia was seen in the age groups <40 years 5 (33%0, 40-50 years 9 (60%) and >50 years. These figures are similar to some studies but different from others (20). Anovulatory and exogenous hormonal effect were found in 11 (5%) and 22 (10%) patients.

## 4. Conclusion

The present study revealed that secretory and proliferative endometrium are the most common endometrial histopathological patterns in endometrial samples obtained for abnormal uterine bleeding in our region. All patients having abnormal menstrual bleeding should be subjected to dilatation and curettage to rule out endometrial pathology.Accurate analysis of endometrial sample is the key to effective therapy and rational approach to treatment of women with abnormal uterine bleeding. Thus, histopathological evaluation of endometrium is especially indicated in women over the age forty years to rule out preneoplastic lesions and malignancies.

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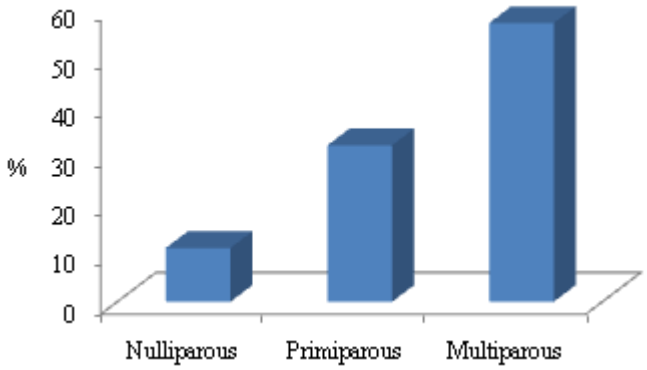


**Figure 1:** Distribution of patients according to parity

**Table 1:** Histological findingaccording to age groups

| Age | <40 | 40-50 | >50 | Total |
|---|---|---|---|---|
| Secretory endometrium | 8 (12) | 56 (88) | | 64 (29) |
| Proliferative endometrium | 28 (51) | 23 (42) | 4 (7) | 55 (25) |
| Atrophic endometrium | | 5 (42) | 6 (58) | 11 (5) |
| Endometrial polyps | 2 (46) | 3 (54 | 6 | 11 (5) |
| Endometrial hyperplasia | 5 (33) | 9 (60) | 1 (7) | 15 (7) |
| Endometrial carcinoma | | | 2 (100) | 2 (1) |
| Disordered proliferative | 12 (41) | 16 (55) | 1 (3) | 29 (13) |
| Anovulatory | 3 (27) | 8 (73) | | 11 (5) |
| Exogenous hormonal effect | 3 (14) | 11 (50) | 8 (36) | 22 (10) |
| Total | 61 (28) | 131 (59) | 28 (13) | 221 (100) |