



## THE ILLUSION OF VARIED PRESENTATIONS FLAGSTONING CLINICOHISTOPATHOLOGICAL ASPECTS OF ABNORMAL UTERINE BLEEDING IN NORTH EASTERN TERTIARY CARE HOSPITAL-A THREE YEAR STUDY

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### ABSTRACT

**Introduction:** Abnormal uterine bleeding (AUB) is a common gynecological problem associated with considerable morbidity and significantly affects the patients. Histopathological evaluation of the endometrial samples plays a crucial role in the diagnosis of abnormal uterine bleeding. The study is aimed to analyze the histopathological triages of endometrium in patients presenting with AUB and also to determine the incidence of AUB in various age groups.

**Methods:** This is a retrospective study, conducted in the Department of pathology and Obstetrics and Gynaecology, in a secondary care military hospital, Shillong, India from May 2015 to May 2018. Endometrial biopsies and curettings of patients presenting with abnormal uterine bleeding were retrospectively studied. A total of 120 endometrial biopsies and curettings were analyzed. The age of the patients ranged from 18 to 70 years. Data was entered in Microsoft Excel and managed in statistical package for the social sciences (SPSS) version 16.

**Results:** A total of 120 cases were analysed. Patients' age ranged from 18-70 years. AUB was most common among the perimenopausal females (41-50 years). The most common presenting symptom was heavy menstrual bleeding (53%). Dilatation and curettage (D&C) was performed in all cases and 96 underwent hysterectomy as final resort. Endometrial proliferative pattern was the most common histopathological finding and was seen in 27% patients, followed by endometrial hyperplasia in 13.5% patients, secretory endometrium (12.7%) and disordered proliferative endometrium were seen in 10.9% patients each. Malignancy was suspected in 1.7% of cases and complex hyperplasia with atypia/endometrial carcinoma was the most common lesion.

**Conclusions:** Endometrial sampling is especially indicated in women above the age of 35 years to rule out malignancy and preneoplasia. It has been elicited that among the females with no pathology, normal physiological patterns with proliferative, secretory, and menstrual changes take place. The most common endometrial pathology in this study was endometrial proliferation. Endometrial evaluation is specially recommended in women of perimenopausal and postmenopausal age groups presenting with AUB, to rule out a possibility of any preneoplastic/borderline suspected condition or malignancy.

**KEYWORDS :** Abnormal uterine bleeding, carcinoma, endometrium, hyperplasia.

**Introduction:** Abnormal uterine bleeding (AUB) is defined as bleeding pattern that differs in frequency, duration, pattern and characteristic observed during a normal menstrual cycle or after menopause. AUB is a common problem encountered by women of all age groups, responsible for around 20-30% visits to out-patient department in reproductive age group and 69% in peri or postmenopausal age group.<sup>7</sup> AUB can be caused by a variety of systemic diseases such as endocrine disorders or drugs. On the other hand, it may be related to pregnancy, anovulation, fibroids, polyps, adenomyosis or neoplasia.<sup>3,4</sup> This study was carried out to determine the histopathological pattern of the endometrium in women of various age groups presenting with abnormal uterine bleeding.

#### Material and methods:

This study was carried out at the Department of Pathology, Military Hospital Shillong. A total of 120 patients presenting with abnormal uterine bleeding over a period of 3 years from May 2015 to May 2018 were included in the study. The histopathological findings of AUB were divided into functional and organic causes. The functional etiologies of AUB included in this study were normal cyclical phases (proliferative and secretory) of the endometrium and other abnormal physiological changes in the endometrium (atrophic endometrium, weakly proliferative endometrium, disordered proliferative endometrium and pill endometrium). Organic intrauterine lesions which were the cause of AUB in this study include chronic endometritis, hyperplasia, polyp and complex endometrial hyperplasia, endometrial carcinoma. Patients were delineated into the following age groups: reproductive (18-40 years), perimenopausal (41-50 years) and postmenopausal (> 50 years). Patients with bleeding due to cervical pathology, pregnancy related complications such as abortions, gestational trophoblastic diseases or ectopic pregnancy were excluded from the study. Endometrial specimens were obtained by either endometrial biopsy or curetting and fixed in 10% formalin. The specimens were processed routinely and stained with Haematoxylin and Eosin (H&E) stain. Data was analyzed using the Statistical Package for Social Science (SPSS version 16).

#### Results

A total of 120 endometrial biopsies and curettings were analyzed. The cause of AUB could be determined in only 100 out of 120 endometrial

biopsies as 20 biopsy specimens were inadequate for evaluation and opinion. Of the remaining 100 cases, 80 (80%) were due to functional causes as no organic pathology was found, while the remaining 20 cases (20%) showed definite endometrial pathology (Table-1).

**Table-1: Distribution of cases of AUB**

Etiology	Total	Percentage
Functional	80	80%
Organic	20	20%
Total	100	100

Amongst the of 80 functional cases of AUB, proliferative endometrium and secretory endometrium were the most common patterns and were seen in 38 cases (47.5%) and 24 (30%) cases, respectively. This was followed by 18 (22.5%) cases of disordered proliferative endometrium. Amongst the 20 organic lesions causing AUB, endometrial hyperplasia was the most common and seen in 12 (60%) cases. Simple hyperplasia without atypia was the most common type of hyperplasia and was observed in 10 (89%) patients. The other organic causes of AUB observed in this study include 4 (20%) cases of pill endometrium, 2 (10%) cases of chronic endometritis and 2 (10%) cases suspicious of malignancy. Weakly proliferative endometrium and pill endometrium were seen in 2 cases, respectively. Both these patterns were commonly seen in the 18-40 and 41-50 age groups. Atrophic endometrium comprised of (4.71%) cases which was seen in both. The perimenopausal and postmenopausal age groups. Malignancy was a cause of AUB diagnosed after menopause. The age of the patients presenting with AUB ranged from 18 to 70 years with a mean age of 43 years. A total of 46 (46.15%) patients presenting with AUB were seen in the perimenopausal age group, followed by 40 (39.83%) patients in the reproductive age group (Table-2).

**Table-2: Age group of patients presenting with AUB (years)**

Age group	Total	%percentage
18 - 40 years	40 (reproductive)	39.83
41- 50 years	46 (perimenopausal)	46.15
> 50 years	14 (postmenopausal)	15.88
Total	100	100

**DISCUSSION:**

Abnormal uterine bleeding is a commonly encountered gynaecological problem.

It includes both dysfunctional uterine bleeding (DUB) and bleeding from structural causes like fibroids, polyps, endometrial carcinoma and pregnancy complications.<sup>6</sup>

Dysfunctional uterine bleeding is defined as abnormal uterine bleeding without a demonstrable organic cause.<sup>7</sup> In most instances dysfunctional uterine bleeding is due to the occurrence of anovulatory cycle.<sup>8,9</sup> It can be diagnosed after exclusion of structural, iatrogenic, medications, psychosocial and systemic disorders by various diagnostic techniques. In about 25% of the patients, the abnormal bleeding is the result of a well defined organic abnormality. Organic cause of AUB was determined in 20% cases in this study which is consistent with data published by Ara et al. (21.73%) and Moghal (22.5%).<sup>11,12,13</sup> Endometrial hyperplasia was the most common organic cause of AUB which was seen in 12 (60%) cases. Similar data (62.8%) was published by Anwer et al. Abnormal and excessive endometrial bleeding occurs in reproductive women of all age groups but is more common in adolescent and perimenopausal women. Many studies have revealed that occurrence of menstrual disorders increases with advancing age. A gradual increment in patients with respect to age was also observed in this study.<sup>16,17</sup> The most common age group presenting with AUB in this study was 41-50 years. Similar observations were also made by Doraiswami et al and Jairajpuriet al.<sup>15,16,17</sup> An increased number of cases in this age group could be due to the fact that as menopause approaches, decreased number of ovarian follicles and their increased resistance to gonadotrophic stimulation, results in low level of oestrogen which cannot keep the normal endometrium growing.<sup>19</sup> Histopathological examination of the endometrial biopsies and curettings revealed various patterns ranging from physiological to pathological lesions of the endometrium. In this study, proliferative and secretory endometria were the two most common histopathological patterns which were seen in all the three age groups. Similar observation was made in a study by Abdullah et al.<sup>20</sup> Together, both these patterns were seen in 165 (40.94%) cases. Data from similar studies vary from 28.36% to 53.91%.<sup>12,16,18,20-22</sup>

Disordered proliferative pattern lies at one end of the spectrum of proliferative lesions of the endometrium that includes carcinoma at the other end with intervening stages of hyperplasias. In this study, (22.5%) cases were diagnosed while in the literature, its incidence varies from 5.7% to 20.54%.<sup>16,17,18,20</sup> Similar to other studies, it was more common in the 41-50 age group Endometrial hyperplasia is a precursor of endometrial cancer. It is more commonly seen during the perimenopausal period.

The classification used by the World Health Organization (WHO) designates four different types of hyperplasia. Hyperplasia is classified as simple or complex based on the absence or presence of architectural abnormalities such as glandular complexity and crowding. They are further designated as atypical if they demonstrate nuclear atypia.<sup>23</sup> In this study, hyperplasia was seen in (60%) cases. Similar observations (9.1% and 10%) were made Abdullah et al.,<sup>20</sup> Gredmark et al.<sup>26</sup> However, its incidence was lower (5.79%) in a study by Jairajpuriet al.<sup>26</sup> and higher in studies by Baralet al (18.3%) et al (24.7%).<sup>17,24,18,16,20</sup> and Muzaffar Similar to the data in other studies, incidence of hyperplasia peaked in the perimenopausal age group. The present study shows the detection of endometrial cancer increases with age (Table-2). In this study, endometrial carcinoma was seen in 2(2.48%) cases which was similar to that reported by Sarwaret al (2%).<sup>27</sup> Lower incidences of 0.4% 28 and 0.47% have also been reported in the literature. Likewise, higher incidences of 3.33% and 4.4% have been reported by Mencalgia<sup>29</sup> and Doraiswami et al respectively. As reported in the literature,<sup>5,16,20,25</sup> endometrial carcinoma was also commonly seen in the post menopausal age group in our study. Effects of exogenous hormones (pill endometrium) were seen in 25 (6.2%) cases of AUB. In other studies its incidence was lower and varied from 1.7%- 4.81%.<sup>17,18,24,25</sup> As in other studies, pill endometrium was commonly seen in our study in the reproductive and perimenopausal age groups.<sup>20,24,18,17,18,24,25</sup> Atrophic endometrium comprised of few cases of AUB and was most common in the postmenopausal women. In other studies, its incidence varies from 1.1%-7%. The exact cause of bleeding in atrophic endometrium is not known. It is thought to be due to anatomic vascular variations or local abnormal defective local haemostatic mechanisms.<sup>12,16,18,20,22</sup> Weakly proliferative endometrium

was observed in few cases and was common in the reproductive and perimenopausal age groups. It represents an intermediate point between profound atrophy of total oestrogen deprivation and the normal proliferative phase response to cyclic oestrogen production.<sup>30</sup> AUB can be assessed by duration and timing of flow, haemoglobin or hematocrit, serum progesterone levels, evaluation of the uterus on ultrasound testing, screening transvaginal ultrasound test of the endometrial cavity and evaluation for coagulopathies with the use of structured history as screening.<sup>31,32</sup> Patients with abnormal uterine bleeding were examined clinically and underwent ultrasonography and endometrial biopsy. Majority of patients have multiple pathology such as leiomyoma, adenomyosis and ovulatory disorders with predominating proliferative phase in histopathology.

**CONCLUSION**

Endometrium is the mirror of hormonal status in women. Histological variations can be seen in the endometrium according to age of women and phase of her menstrual cycle and any other specific pathology. With regards to diagnosis of AUB, pelvic ultrasound is the least invasive procedure used for visualization of the structure of the uterus and for visualization of the thickness of endometrium. In certain cases, it provides additional information that may assist both diagnosis and treatment choices. Whereas endometrial sampling could be effectively used as the first diagnostic step in abnormal uterine bleeding although, at times its interpretation could be quite challenging to the practicing pathologist. It is a simple, cost-effective and appropriate method that provides accurate diagnostic yield. The present study highlights the importance of endometrial biopsy and its interpretation which plays a pivotal role in the management of AUB. So, the ultrasonography and endometrial biopsy still remain the gold standard for diagnosis of AUB

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