



## HISTOPATHOLOGICAL STUDY OF ENDOMETRIUM IN CASES OF ABNORMAL UTERINE BLEEDING

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**ABSTRACT** Abnormal uterine bleeding (AUB) is the common presenting complaint in all female age groups. It is due to anovulatory cycles which are commonly seen in adolescent and peri-menopausal women. Abnormal uterine bleeding is caused by a wide variety of organic and non-organic causes. A prospective study was carried out in the Department of Pathology at J.L.N, Medical College and Associated Group of Hospitals, Ajmer, Rajasthan, over a period of one year from July 2019 to June 2020 for abnormal uterine bleeding included for the study. Endometrial samples of total of 452 cases were included in this study. The maximum number of cases were seen in the age group of 41-50 years (43%) and minimum number were seen in age group of 11-20 years (1.33%). Heavy menstrual bleeding was the most common symptom accounting for 40.26% of patients. Proliferative phase was the most common histopathological finding accounting for 53.53% followed by secretory phase accounting for 35.39%. Maximum number of woman were having parity 3 (242 cases) & minimum number of woman were having parity 7 (1 case). Histopathological examination of endometrium is the gold standard to evaluate Abnormal Uterine Bleeding. It is useful not only find out organic causes like polyps, hyperplasia, endometritis but also endometrial carcinoma which has a good prognosis if detected early. Accurate analysis of endometrial sampling is the key to effective therapy.

**KEYWORDS :** abnormal uterine bleeding, peri-menopausal , endometritis

### INTRODUCTION

Abnormal uterine bleeding (AUB) is commonest presenting symptom in gynaecology out-patient department. Endometrial sampling could be a effectively used as the first step in abnormal uterine bleeding. Although at times, its interpretation could be quite challenging to the practicing pathologist. [1]

Abnormal uterine bleeding may be accompanied by pain and discomfort, cause significant social embarrassment and have a substantial effect on health related quality of life. [2]

Abnormal Uterine Bleeding is a broad term that describes irregularities in the cycle involving frequency, regularity, duration and volume of flow outside of pregnancy. Up to one-third of woman will experience abnormal uterine bleeding in their life with irregularities most commonly occurring at menarche and perimenopause. [3]

A normal menstrual cycle has a frequency of 24 to 38 days, last 7 to 9 days, with 5 to 80 millilitres of blood loss. Variation in any of these 4 parameters constitute abnormal uterine bleeding. [4] The prevalence of abnormal uterine bleeding among reproductive aged woman internationally is estimated to be between 3% to 30%, with a higher incidence occurring around menarche and perimenopause. Many studies are limited to heavy menstrual bleeding (HMB), but when irregular and internal bleeding are taken into consideration, the prevalence rises to 35% or greater. [5] Since endometrium is best accessible tissue for histopathological evaluation of uterine bleeding , several methods are used for endometrial sampling amongst which dilatation and curettage are used as standard procedure. [6] Endometrial biopsy is a safe and well accepted method to evaluate abnormal uterine bleeding as post-menopausal bleeding must always be investigated. This procedure becomes a valuable office based diagnostic tool. [7]

### MATERIALS AND METHODS

All endometrial tissues received in the Department of Pathology at J.L.N, Medical College and Associated Group of Hospitals, Ajmer, Rajasthan, prospectively over a period of one year from July 2019 to June 2020 for abnormal uterine bleeding included for the study. Endometrial tissues were used for histopathological examination.

Methods of collection of data: Clinical data of the study subjects was received along with Hysterectomy and curettage specimens. All endometrial tissue and hysterectomy specimen (pertaining to the

endometrium only) with abnormal uterine bleeding were included in the study. Autolysed specimens were not included in the study.

**Plan of procedure:** The following clinical and histopathological details were studied:

**1) Clinical History:** Complete clinical history was evaluated.

**2) Histopathological Examination:** All the received specimen were fixed in 10% buffered formalin for a period of 14-16 hours. After the fixation, gross examination was done which includes its size, shape, colour and consistency. Endometrial biopsy material was embedded completely. Sections were dehydrated in 70% ethanol followed by 95% and 100% ethanol, cleaned in xylene and embedded in paraffin wax. Paraffin blocks were made and tissue bits were cut to 3-5 microns in thickness. Routine stains i.e. Hematoxylin & eosin were used for staining and microscopy were done.

### RESULTS

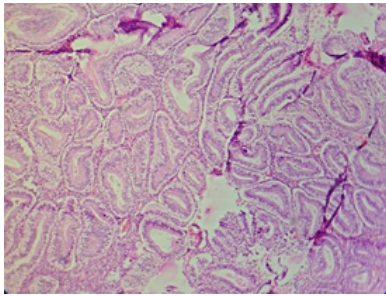
A total of 452 cases were included in this study. The age of patients in the present study ranged from 18 to 79 years. The maximum number of cases were seen in the age group of 41-50 years (43%) and minimum number were seen in age group of 11-20 years (1.33%).

Proliferative phase was the most common histopathological finding accounting for 53.53% Endometrial carcinoma were seen in 1.54. Parity-wise out of 452 cases, there were 14 (3.09%) Nulliparous cases, Multiparous cases (1-3) were 375 (82.96%) and Grand-Multiparous cases were 64 (13.93%). The parity ranged from 0 to 7 in the present study. Maximum number of woman were having parity 3 (242 cases) & minimum number of woman were having parity 7 (1 case). Heavy menstrual bleeding was the most common symptom accounting for 40.26% of patients followed by post-menopausal bleeding accounting for 29.64% with the least being oligo-menorrhoea (3.09%).

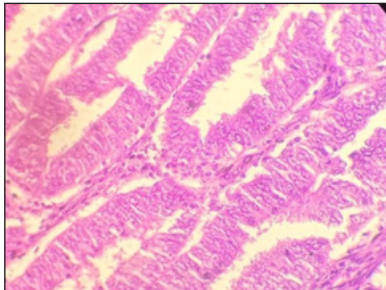
**Table 1: Showing Histopathological Diagnosis**

Histopathological Diagnosis	Number	percentage
Atrophic Endometrium	5	1.10%
Disordered proliferative	2	0.44%
Endometrial carcinoma	7	1.54%
Chronic Endometritis	6	1.32%
Gland-Stroma asynchrony	16	3.53%
Endometrial Hyperplasia	5	1.10%

Endometrial Polyp	10	2.21%
Proliferative phase	241	53.20%
Secretory phase	160	35.39%
Total	452	



**Figure 1: Endometrial simple Hyperplasia: Proliferation of endometrial glands with increase in gland: stroma ratio of >1:1 (H&E, X10)**



**Figure 2: Endometrial carcinoma. (H&E, X40)**

## DISCUSSION

The endometrium is a remarkably dynamic tissue. It undergoes regular cyclical changes in response to the recurrent hormonal changes of the ovulatory cycles [8]. Abnormal uterine bleeding without structural pathology occurs in reproductive women of all ages but is more common in adolescent and peri-menopausal women [9]. In perimenopausal years anovulatory cycle is most frequent which in turn causes changes in endometrium, which results in irregular bleeding. [10] PALM-COEIN is a useful acronym provided by International Federation of Obstetrics and Gynecology to classify etiologies of AUB. Causes of AUB are structural like polyps, adenomyosis, leiomyoma, malignancy and hyperplasia. Non-structural causes of AUB are coagulopathy, ovulatory dysfunction, endometrial disorders, iatrogenic and not otherwise classified. [11] AUB may present at any age in life. It may be associated with various kinds of histopathological findings in the endometrium. The highest incidence of AUB was noted in the 41-50 years age group in the present study which is in concordance with the results of the studies by Doraiswami [12], Saroj A Bolde [13], Rujuta prajapati [14], Vani B S [15] & Indu Rajagopal [16]

In the present study, the highest incidence of AUB was seen in multiparous (83%), which is in concordance with the results of the studies by Bodhisatwa Behera [17] (52%). The lowest incidence was seen in nulliparous women (3%) in the present study which is in concordance with the results of the studies by Bodhisatwa Behera (18%). By these observations, it may be implied that incidence of AUB is highest in parous women in general 97% and multipara in particular 82%.

In the present study, heavy menstrual bleeding was the commonest type of bleeding (40.04%) followed by post-menopausal bleeding (29.64%), intermenstrual bleeding (15.70%), heavy and prolonged bleeding (6.85%), frequent menstrual bleeding (4.42%) and oligomenorrhea (3.31%) in that order, whereas in the study by Bodhisatwa Behera showed heavy menstrual bleeding was the commonest type of bleeding followed by postmenopausal bleeding, intermenstrual bleeding, frequent menstrual bleeding, heavy and prolonged bleeding and oligomenorrhea.

In the present study proliferative phase (53.53%) was found to be most common histologic pattern followed by secretory phase (35.39%), gland stroma asynchrony (3.53%), endometrial polyp (2.21%), endometrial carcinoma (1.54%) chronic endometritis (1.32%),

endometrial hyperplasia (1.10%), atrophic endometrium (0.88%) and disordered proliferative (0.44%). In the study done by Suman thapa et al [18], proliferative phase was most common histological pattern followed by secretory phase, disordered proliferative, endometrial hyperplasia, endometrial polyp, chronic endometritis, atrophic endometrium and endometrial carcinoma in that order.

Majority of the studies including the present study indicate that, the incidence of hyperplasia in AUB ranges from 1% to 34.98% whereas, Rujuta [14] reported a higher incidence 34.98% while the lowest incidence 1.10% reported by present study. Usman [19] reported most common diagnosis of Endometrial polyp and least common diagnosis Atrophic endometrium and Rita D [21] reported most common diagnosis Endometrial hyperplasia and least common diagnosis Endometrial polyp and present study reported most common diagnosis of hormonal causes and least common diagnosis of Atrophic endometrium in cases of post-menopausal bleeding.

## CONCLUSIONS

Histopathological examination of endometrium is the gold standard to evaluate Abnormal Uterine Bleeding. It is useful not only find out organic causes like polyps, hyperplasia endometritis but also endometrial carcinoma which has a good prognosis if detected early. Accurate analysis of endometrial sampling is the key to effective therapy.

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