

# Histopathological Pattern Of Endometrial Sample In Abnormal Uterine Bleeding

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**Abstract: Background:** Histological characteristic of endometrial biopsy material as assessed by light microscopy, remain the diagnostic standard for the clinical diagnosis of endometrial pathology. Management of abnormal uterine bleeding is not complete without tissue diagnosis. The aim of the study was to find out the histopathological pattern of the endometrium in abnormal uterine bleeding. **Materials and Methods:** A retrospective study in which Haematoxyline and Eosin (H&E) section of endometrial curetting of 230 patient were evaluated. Diagnosis was made by correlating the morphological findings with the clinical history. **Results:** Out of 230 cases of AUB, Organic causes 58(25.21%), Nonorganic causes 170 (73.91%), Insufficient for diagnosis 2(0.8%). Of the organic causes of AUB, low grade endometrial hyperplasia was the most frequent case (75.68%) then endometritis of 8.6%. The most common histological pattern in AUB were proliferative phase of endometrium (55.29%) followed by secretory pattern (23.52%).

**Keywords:** Abnormal Uterine bleeding, Endometrium, Hyperplasia, Endometritis, Endometrial Carcinoma.

## Introduction:

Menstrual disorders are a common indication for medical visits among women of reproductive age(1)& heavy menstrual bleeding affect upto 30% of women throughout their reproductive life time<sup>(2)</sup>.

Although abnormal uterine bleeding can be caused by well defined organic pathological condition, such as chronic endometritis, endometrial polyp, submucosal leiomyomas or endometrial neoplasm. The largest Single group encompasses functional disturbances referred to as Dysfunctional uterine bleeding (DUB). DUB is defined as any excessive bleeding (excessively heavy, prolonged/frequent of uterine origin) which is not due to demonstrable organic disease, complications of pregnancy/systemic disease.

An endometrial biopsy should be performed on all women are 35 years with menorrhagia to rule out endometrial cancer or premalignant lesion (e.g. Atypical hyperplasia). Endometrial biopsy also should be considered in women between the age 18 and 35 years with AUB who have risk factors of endometrial cancer or if AUB does not resolve with medical management<sup>(3)</sup>.

Management of abnormal uterine bleeding (AUB) is not complete without tissue diagnosis especially in peri menopause and post menopause .AUB may be the symptom of endometrial carcinoma in 8.50% cases<sup>(4)</sup>.

The aim of this study was to find the histopathological

pattern of endometrium in abnormal uterine bleeding in all age group.

## Material and Methods:

It is retrospective study done in the department of histopathology of SMIMER hospital, Surat, Gujarat. A total of 230 patients presenting with abnormal uterine bleeding over a period of 1 year from January 2012 to December 2012 were included in the study.

For each case representative slides were retrieved and the pattern of uterine histopathological changes identified and classified according to age groups.

The patient were further divided into the three age groups. Young /early reproductive age <40 years .women of latter reproductive age/ peri menopausal (40-55 year) . post menopausal women (55 year or older).

The first category includes patient with AUB due to organic causes includes  
Endometrial polyp  
Endometritis  
Low grade endometrial hyperplasia including Simple/complex/atypical  
Endometrial carcinoma  
Pregnancy related conditions  
Cervical lesion

The Second category include Patient with AUB due to non organic causes includes

Secretory endometrium  
 Proliferative endometrium  
 Atrophic endometrium  
 Disorder Proliferative endometrium  
 Decidual reaction  
 Hormonal imbalance  
 Pseudodecidual reaction (progstein effect)  
 Corpus luteal insufficiency  
 Secretory phase with Area stella reaction

The third category include patient with specimens were insufficient for diagnosis.

### Results:

A total number of 230 cases of AUB enrolled in this study, 58 (25.21%) were due to organic causes while 170(73.91) were due to non organic dysfunctional in nature and two (0.8%) specimen were insufficient for diagnosis.(Table-1)

**Table No.1 : Distribution of cases of AUB according to cause**

Cause of AUB	Total	%
Nonorganic causes	170	73.91
Organic causes	58	25.21
Insufficiesnt for diagnosis	02	0.86
Total	230	

**Table No.2 Distribution of patients according to age group.**

Diagnosis group	Age (years)			Total
	<40	40-55	>55	
AUB due to organic causes	15(25.86%)	37(63.8%)	6(10.3%)	58(25.21%)
AUB due to nonorganic causes	67(39.4%)	96(56.47%)	7(4.11%)	170(74%)
Insufficient for diagnosis	1(0.5%)	1(0.5%)	0(0%)	2(0.8%)
Total	83	134	13	230

Out of 170 nonorganic cases of AUB secretory endometrium and proliferative endometrium were the most common pattern and were seen 40(23.5%) and101 (59.41%) cases respectively. Amongst the 58 organic lesion causing AUB, endometrial hyperplasia was the most common and seen in 44cases (75.8%). Simple hyperplasia without atypia was the most common type of hyperplasia and was observed in 39(88.63%) patients. The other organic causes of AUB observed in this study include 5(8.6%) cases of endometritis, 4(6.81%) case of endometrial carcinoma and 3(5.17%) cases of endometrial polyp.

**DUB:Table-3Abnormal uterine bleeding to Nonorganic causes.**

Histopathological diagnosis	Age ( years)			Total (%)
	<40	40-55	>55	
Secretory endometium	20	20	0	40(23.5%)
Proliferative endometrium	35	59	7	101(59.41% )
Atrophic endometrium	0	1	0	1(0.5%)
Disordered proliferative endometrium	0	1	0	10.5%)
Decidual reaction	7	4	0	11(6.4%)
Hormonal imbalance	0	1	0	1(0.5%)
Pseudodecidual reaction (progesterone effect)	3	8	0	11(6.4%)
Corpus luteal insufficiency	1	1	0	2(1.17%)
Secretary phase with area stella reaction	1	1	0	2(1.17%)
Total	67	96	7	170

**Table-4 Abnormal Uterine Bleeding due to Organic cases**

	Age (years)			Total (%)
	<40	40-55	>55	
Endometrial polyp	1	1	1	3(5.17%)
Endometritis (TB)	3	2	0	5(8.6%)
Low grade endometrial hyperplasia	10	32	2	44(75.86%)
Endometrial ca	0	2	2	4(6.8%)
Pregnancy related condition	1	0	0	1(1.7%)
Cervical lesions	0	0	1	1(1.7%)
Total	15	37	6	58(100%)

Histopathological examination of endometrium showed various histopathological pattern in AUB.(Table 3,4&5) Pattern of normal cyclical endomerium (proliferative and secretory phase) were the most common and seen 134(58.23%) cases presenting with AUB.

There were also the predominant patterns seen in all the

**Table -5 Types of Hyperplasia**

	<40	40-55	>55	Total (%)
Simple hyperplasia without atypia	10	29	0	39(88.63%)
Simple hyperplasia with atypia	0	1	0	1(2.2%)
Complex hyperplasia without atypia	0	1	0	1(2.2%)
Complex hyperplasia with atypia	0	1	2	3(6.8%)
Total	10	32	2	44

three age groups.

Endometrial hyperplasia, Decidual reaction, progesterone effect were the next common histological pattern which were seen in 44(75.86%), 11(6.4%) and 11(6.4%) cases respectively. All these pattern were commonly seen in the peri menopausal age group.

Out of 44 cases of hyperplasia there were 39(88.63%) cases of simple hyperplasia without atypia and 3(6.8%) cases of complex hyperplasia without atypia.

Atrophic endometrium comprised of 1(0.5%) which was seen in 40-55 years age group. Malignancy was a cause of AUB in only 4(6.8%) cases, 2 case in premenopausal & 2 were diagnosed after menopause.

**Discussion:**

Abnormal uterine bleeding is a commonly encountered gynecological problem<sup>(5)</sup>. 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 is without demonstrable organic cause<sup>(7)</sup>. In most instances dysfunctional uterine bleeding is due to the occurrence of an anovulatory cycle<sup>(8)</sup>. It can be diagnosed after exclusion of structural, iatrogenic, medications, psychological and systemic disorders by various diagnostic techniques<sup>(9)</sup>.

In about 25% of the patients, the abnormal bleeding is the result of a well defined organic abnormality<sup>(10)</sup>. Organic cause of AUB was determined in 58(25.21%) cases in this study which is consistent with data published by Ara et al. (21.73%) and Moghal (22.5%)<sup>(11,12)</sup>. Endometrial hyperplasia was the most common organic cause of AUB which was seen in 44 (61.11%) cases. Similar data (62.8%) was published by Anwer et al<sup>(13)</sup>.

Abnormal and excessive endometrial bleeding occurs in reproductive women of all age groups but is more common in adolescent and peri menopausal women<sup>(14)</sup>. Many studies have revealed that occurrence of menstrual disorders increase with advancing age<sup>(15,16)</sup>. A gradual increase in patients with respect to age also observed in this study.

Histopathological examination of the endometrial biopsies and curetting revealed various patterns ranging from physiological to pathological lesions of the endometrium. In this study, proliferative and secretory endometriums 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(17). Together, both these patterns were seen in a 134(58.26%) cases. Data from similar studies vary from 28.36% to 53.91%<sup>(11,15,17-20)</sup>.

Endometrial hyperplasia is a precursor of endometrial cancer. It is more commonly seen during the peri menopausal period<sup>(21)</sup>. 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>(22,23)</sup>.

In this study, hyperplasia was seen in 44(19.13%) cases. Similar observation (9.1% and 10%) were made Abdullah et al<sup>(17)</sup>, Gredmark et al<sup>(24)</sup>. however, its incidence was lower (5.79%) in study by Jairajpuri et al and higher in studies by Baral et al (18.3%)<sup>(22)</sup> and Muzaffar et al (24.7%)<sup>(16)</sup>. Similar to the data in other studies, the incidence of hyperplasia peaked in the perimenopausal age group<sup>(17,22)</sup>.

The present study shows the detection of endometrial cancer increases with age (Table-2). In this study, endometrial carcinoma was seen in 4(1.7%) cases which was similar to that reported by Sarwar et al (2%)<sup>(25)</sup>. Lower incidence of 0.4%<sup>(26)</sup> and 0.47%<sup>(18)</sup> have also been reported in the literature. Likewise, higher incidence of 3.33% and 4.4% have been reported by Mencalgia<sup>(27)</sup> and Doraiswami et al<sup>(15)</sup> respectively. As reported in the literature, endometrial, carcinoma was also commonly seen in the post menopausal age group in our study<sup>(15,17,23)</sup>.

Effects of exogenous hormones (pill endometrium) were seen in 12 (5.21%) cases of AUB. In other studies its incidence was lower and varied from 1.7%-4.81%<sup>(16,18,22,23)</sup>. As in other studies, pill endometrium was commonly seen in our study in the reproductive and peri menopausal age

groups.

Atrophic endometrium comprised of 1(0.4%) cases of AUB and was most common in the postmenopausal women. In other studies, its incidence varies from 1.1%-7%<sup>(11,15,17,18,20)</sup>. The exact cause of bleeding in atrophic endometrium is not known. It is thought to be due to anatomic vascular variation or local abnormal defective local haemostatic mechanisms<sup>(15)</sup>.

Chronic endometritis was diagnosed in 5 (2.17%) cases. Higher incidence varying 5.8 to 24% have been reported in the literature<sup>(11,17,18,25)</sup>. It is often as a result of intra-uterine contraceptive devices (IUCD), pregnancy and incomplete abortion<sup>(18)</sup>.

The other causes of AUB include 3 (1.30%) cases of endometrial polyp. Endometrial specimens were inadequate for evaluation in 2 (0.86%) cases. Those endometrial specimens labelled unsatisfactory for reporting showed scant amount of fragmented glands and stromal tissue and large areas of haemorrhage. Limited literature is available on the criteria for adequate and inadequate endometrial specimen<sup>(18)</sup>.

The endometrial biopsies and curetting on histopathology revealed various patterns ranging from normal endometrium to malignancy. Majority of the patients with AUB presented with normal cyclic endometrium, followed by disordered proliferative endometrium and hyperplasia. The incidence of endometrial hyperplasia and endometrial carcinoma were more common in the peri menopausal and post menopausal women. Hence, histopathological evaluation of the endometrium is specially recommended in women of these age groups presenting with AUB, to rule out possibility of preneoplastic condition or malignancy.

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