

Histopathological Spectrum of Endometrial Lesions in Patients Presenting With Abnormal Uterine Bleeding

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ABSTRACT

INTRODUCTION: Abnormal uterine bleeding (AUB) is a very common gynaecological condition affecting all age group. AUB is defined as changes in frequency of menses, duration of flow or amount of blood flow. The causes of abnormal uterine bleeding include a wide spectrum of diseases of the reproductive system and non-gynecological causes as well. Dysfunctional Uterine Bleeding is a diagnosis of exclusion when there is no underlying medical pathology. Dilation and curettage is a diagnostic as well as therapeutic procedure for the AUB workup.

AIMS AND OBJECTIVES:

1. To Study the histopathological pattern of Endometrium in patients presenting with abnormal uterine bleeding.
2. To compare the histopathological pattern of Endometrium in patients presenting with abnormal uterine bleeding in various age groups and to ascertain the underlying pathology responsible for such abnormal bleeding.

MATERIAL AND METHOD: The study was conducted in the Department of Pathology at a tertiary care centre of Kashmir valley. It was carried over a period of 1 and ½ years from June 2015 to November 2016. The Study Material included specimens consisting of Endometrial Samples (Endometrial curettage and biopsy) and hysterectomy Specimens. Patients with isolated endometrial causes of abnormal uterine bleeding like Endometrial Hyperplasia, Endometrial Polyp, Chronic Endometritis and Endometrial Carcinoma were included in this study. Patients with Leiomyomas, Cervical Pathology, Vaginal Pathology, Hemostatic Disorders, were excluded.

RESULTS: A total of 150 cases were studied during a period of 1 and ½ year. Maximum incidence of AUB was observed in reproductive age group, followed by perimenopausal and post-menopausal age group. The most common symptom was menorrhagia (55.64%). Out of 150 cases, 144 cases (96%) were benign whereas 6 cases (4%) were malignant. Proliferative Endometrium (40/150; 27%) was more common in reproductive age where as hyperplasia (57/150; 38%) was more common in perimenopausal and post-menopausal women. In endometrial hyperplasia, maximum number of cases (46 cases, 31%) showed non atypical endometrial hyperplasia and 11 cases (7%) showed atypical Endometrial hyperplasia. All cases of endometrial carcinoma were noticed in age group of more than 50 years.

CONCLUSION: The histopathological study of endometrium in patients presenting with Abnormal Uterine Bleeding plays an important role in diagnosing various histopathological patterns, aetiopathological factors and management of abnormal uterine bleeding. In our Study, functional causes of Abnormal Uterine Bleeding (like proliferative and secretory endometrium) were much more common in reproductive age group whereas in perimenopausal and post-menopausal age group, organic lesions (like endometrial hyperplasia, endometrial carcinoma) were responsible for Abnormal Uterine Bleeding. Thus endometrial curettage is recommended in women of perimenopausal and post-menopausal age group presenting with Abnormal Uterine Bleeding to rule out pre-neoplastic conditions (like atypical endometrial hyperplasia) and malignancy which has excellent prognosis if detected early.

Keywords: endometrium, abnormal uterine bleeding.

INTRODUCTION

Abnormal uterine bleeding (AUB) is a very common gynaecological condition affecting all age groups^[1]. AUB is defined as changes in frequency of menses, duration of flow or amount of blood flow. Dysfunctional Uterine Bleeding is diagnosis of exclusion when there is no underlying medical pathology^[2]. The causes of abnormal uterine bleeding include a wide spectrum of diseases of the reproductive system and non-gynecologic causes as well. Organic cause of abnormal uterine bleeding may be subdivided into reproductive tract disease, iatrogenic causes and systemic disease. In about 25% of the patients, the abnormal uterine bleeding is the result of a well defined organic abnormality^[3]. Dilation and curettage is a diagnostic as well as therapeutic procedure^[4] for the AUB workup. The sensitivity of endometrial biopsy for the detection of endometrial abnormalities has been reported to be as high as 96%^[5, 6].

AIMS AND OBJECTIVES:

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4. To compare the histopathological pattern of Endometrium in patients presenting with abnormal uterine bleeding in various age groups and to ascertain the underlying pathology responsible for such abnormal bleeding.

MATERIAL AND METHOD:

The study was conducted in the Department of Pathology at a tertiary care centre of Kashmir valley. It was carried over a period of 1 and ½ years from June 2015 to November 2016. This study was approved by Ethical Committee of the institution. The Study Material included specimens consisting of Endometrial Samples (Endometrial curettage and biopsy) and hysterectomy Specimens. Inclusion criteria included Patients with isolated endometrial causes of abnormal uterine bleeding like Endometrial Hyperplasia, Endometrial Polyp, Chronic Endometritis and Endometrial Carcinoma. Patients with Leiomyomas, Cervical Pathology, Vaginal Pathology, Hemostatic Disorders, were excluded.

The gross morphology was recorded with total submission of endometrial samples and representative tissue was taken from the hysterectomy specimens. The tissue bits were processed and paraffin blocks were prepared. Tissue sections were cut and stained with hematoxylin and eosin stain (H&E). Statistical analysis was done using SPSS version 16.0 software.

RESULTS: A total of 150 cases of Endometrial Curettings/specimens were included in the study. Types of specimens /biopsies received are shown in Table 1. Majority of the specimen were benign (96%) (Table 2). The age wise distribution of cases of AUB with histopathological pattern of endometrium is shown in Table 3. The distribution of endometrial lesions according to the histopathology is shown in Table 4. Menorrhagia was the most common clinical presentation and was seen in 82 patients presenting with abnormal uterine bleeding (Table 5). Distribution of Endometrial causes of AUB according to Age Group of Patients is shown in Table 6. Menorrhagia was the most common clinical presentation in 18 – 40 years age group, Polymenorrhea was the most common clinical presentation in 41-50 years age group and Postmenopausal bleeding was the most common clinical presentation in >50 years age group. (Table 7)

DISCUSSION:

In our study, 119 cases (79.3%) were Endometrial Curettings followed by Hysterectomy specimens i.e. 25 cases (16.7%). Cases received for review were 4 (2.7%). Endometrial Polyps were least common specimens received i.e. 2 cases (1.3%). In our study, 6 cases (4%) were found to be neoplastic and 144 (96%) were non-neoplastic. All the cases of endometrial carcinoma in our study were seen in postmenopausal age group. All the cases of endometrial carcinoma were in Stage I and were well differentiated to moderately differentiated. Majority of Endometrial lesions comprised of non-neoplastic lesions. Dadhania B *et al* (2013) in their study found 4 cases (2.67%) to be neoplastic and 146 (97.33%) were non neoplastic.^[7] Bolde SA *et al* (2014) in their study found 5 cases (1.5%) to be neoplastic and 135 cases (96%) were non neoplastic. Thus their majority of endometrial lesions comprised of non-neoplastic lesions like in our study.^[8] S Vaidya *et al* (2013) in

their study found 10 (2.48%) cases of endometrial carcinoma mostly seen in postmenopausal women like in our study and 393 cases (98%) were non neoplastic lesions.^[9] In our study, in reproductive age group Proliferative endometrium (functional cause) was the most common finding accounting for 39 cases (48%) followed by Secretory endometrium (functional cause) 18 cases (22%) and Endometrial hyperplasia (organic lesion) 17 cases (21%). In perimenopausal age group endometrial hyperplasia was the most common finding accounting for 24 cases (53%) followed by proliferative endometrium 11 cases (24%) and in postmenopausal age group endometrial hyperplasia was the most common finding accounting for 16 cases (70%). Diagnosis of endometrial hyperplasia is important as they are precursors of endometrial carcinoma. The calculated risk of progression of hyperplasia to cancer is 5-10%.^[10] According to the new WHO classification^[11], endometrial hyperplasia is classified into non atypical endometrial hyperplasia and atypical endometrial hyperplasia. Chronic Endometritis was diagnosed in 6% cases. All cases were observed in 35 - 50 years age i.e. peri-menopausal age group. The endometritis was diagnosed on the basis of presence of plasma cells. Chronic endometritis is often a result of intra uterine contraceptive devices (IUCD), pregnancy and incomplete abortions.^[12] This pathology needs to be diagnosed and kept in mind while dealing with a case of AUB because with specific treatment, endometrium can be reverted back to normal state. Endometrial polyps (5/150; 3.33%) were seen in reproductive age group and peri-menopausal age group in equal amount. Polyp in reproductive age group was benign functional polyp and in perimenopausal age group was benign hyperplastic polyp. Functional polyp is peculiar to the cyclic nature of endometrium in reproductive age group. There is compelling difference between endometrial polyp and normal endometrium in receptor expression, cell proliferation and apoptosis regulation suggesting that polyp may provide a suitable background for the advancement of malignancy.^[13] **Khare A et al (2012)** in their study, found the following observation. In reproductive age group, proliferative endometrium was the most common finding (26.8%) followed by irregular maturation (25%). Complex hyperplasia was seen in 6 cases, out of which 1 case showed atypia. Nineteen

cases (16.4%) showed associated endometritis. No case of malignancy was observed in this group. In perimenopausal age group, simple hyperplasia was the most frequent finding (29.8%). Complex hyperplasia was seen in 3 cases, out of which 1 revealed atypia. Three cases of malignancy (6.4%) were reported. In postmenopausal age group, most frequent finding was complex hyperplasia seen in 8 cases (33.3%), out of which 2 cases showed atypia. Six cases (25%) of simple hyperplasia and 4 cases (16.7%) of malignancy were reported.^[14] **Dadhania B et al (2013)** in their study found that the most common pattern was proliferative endometrium (32/150) followed by secretory endometrium (23/150) and hyperplasia in (40/150).^[7] **Bolde SA et al (2014)** in their study reported that the most common histological pattern of endometrium includes proliferative endometrium (22.8%) followed by endometrial hyperplasia (19.40%), atrophic endometrium (7.16%), secretory endometrium (5.97%), irregular shedding (1.80%), irregular ripening (1.20%) and anovulatory endometrium (0.59%). Organic lesions encountered in AUB cases were leiomyoma (17.92%), endometrial polyp (1.79%), endometrial carcinoma (1.50%), endometriosis (0.59%) and choriocarcinoma (0.29%).^[8] **Goel A et al (2016)** in their study found that proliferative pattern (49.62%) was most predominant followed by secretory pattern seen in 23.48%.^[15] In our study, maximum number of patients were in the reproductive age group of 18-40 years i.e. 74 cases (49%) followed next by the perimenopausal age group of 41-50 years i.e. 45 cases (30%). The etiology of AUB is different for various age groups – adolescent (12-18 years), reproductive (19-40 years), perimenopausal (41-50 years) and post-menopausal age group (>50 years). The youngest patient in this study was 22 year old female (reproductive age group) and eldest was 70 year old post-menopausal women. Maximum incidence of AUB in our study was observed in reproductive age group, followed by perimenopausal and post- menopausal. We also observed that increasing age was significantly associated with aggressiveness of the lesion. Cyclic endometrium (70/150; 46.67%) was more common in reproductive age where as hyperplasia (57/150; 38%) was commonly encountered in peri-menopausal and menopausal women. All cases of endometrial carcinoma were noticed in age group of more than 50

years. Similar distribution of cases was observed by Abid M *et al.*^[16] Increased prevalence of lesions in higher age group could be due to the fact that endometrium is exposed to estrogen for a longer period of time as compared to patients with younger age group. **Khare A *et al* (2012)** in their study found 62% of cases in reproductive age group followed by 25.1% cases in perimenopausal age group and 12.8% of cases in postmenopausal age group.^[14] **Forae GD *et al* (2013)** in their study found 89.6% of cases in reproductive and perimenopausal age groups and 10.4% of cases in postmenopausal age group.^[12] **Goel A *et al* (2016)** in their study found 37.5% of cases in reproductive age group and 36% in perimenopausal age groups.^[15] In our study, menorrhagia was the most common clinical presentation and was seen in 82 patients presenting with abnormal uterine bleeding, followed by postmenopausal bleeding in 30 patients. **Goel A *et al* (2016)** in their study of 264 cases found most common pattern of bleeding was menorrhagia (62.5%) followed by metrorrhagia (14%), postmenopausal bleeding (12%), menometrorrhagia (6.1%) and polymenorrhea (5.3%).^[15] **Jetley S *et al* (2013)** in their study found most common clinical presentation was represented by menorrhagia (46.4%) followed by metrorrhagia (20%), menometrorrhagia and polymenorrhea.^[18] **Bolde SA *et al* (2014)** in their study found most common clinical presentation was represented by menorrhagia (46.86%).^[8] **Masood A *et al* (2014)** in their study found most common clinical presentation was represented by menorrhagia (70%) followed by metrorrhagia (15%) and polymenorrhea (15%).^[19]

CONCLUSION:

To conclude, the histopathological study of endometrium in patients presenting with Abnormal Uterine Bleeding plays an important role in diagnosing various histopathological patterns, aetiopathological factors and management of abnormal uterine bleeding. In our Study, functional causes of Abnormal Uterine Bleeding (like proliferative and secretory endometrium) were much more common in reproductive age group whereas in perimenopausal and post-menopausal age group, organic lesions (like endometrial hyperplasia, endometrial carcinoma) were responsible for Abnormal Uterine Bleeding. Thus endometrial curettage is recommended in women of perimenopausal and post-menopausal age group

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Table 1: Types of Samples Received

Type of specimen	No of cases	Percentage
Endometrial Curettings	119	79.3%
Endometrial Polyps	2	1.3%
Hysterectomy	25	16.7%
Review	4	2.7%

Table 2: Distribution of Endometrial Curettings / Hysterectomy Specimens into Benign & Malignant Lesions

MALIGNANT LESIONS	BENIGN LESIONS	TOTAL
6(4%)	144(96%)	150

Table 3: Age Wise Distribution of cases of AUB with histopathological pattern of endometrium

Age groups/ Histopathology of endometrium	< 20 years	21-30 years	31-40 years	41-50 years	51-60 years	> 60 years
Proliferative Endometrium	1	9	29	11	0	0
Secretory Endometrium	1	9	8	2	0	0
Hyperplasia	0	3	14	24	6	10
Endometrial Polyp	0	0	2	2	1	0
Chronic Endometritis	0	0	4	5	0	0
Endometrial Carcinoma	0	0	0	0	5	1
Non Diagnostic	0	0	2	1	0	0
Total	2	21	59	45	12	11

Table 4: Distribution of Endometrial causes of Abnormal Uterine Bleeding according To Histopathology

S. No.	Histopathological Type	No. of cases	Percentage
1	Non atypical endometrial hyperplasia	46	31%
2	Proliferative Endometrium	40	27%
3	Secretory Endometrium	30	20%
4	Atypical Endometrial hyperplasia	11	7%
5	Chronic Endometritis	9	6%
6	Endometrial Polyp	5	3%
7	Endometrial Carcinoma	6	4%
8	Non Diagnostic	3	2%

Table 5: Clinical Presentation of Patients presenting with Abnormal Uterine Bleeding

S.No.	Symptom	No. of Cases	Percentage
1	Menorrhagia	82	55%
2	Polymenorrhea	18	12%
3	Post menopausal bleeding	30	20%
4	Metorrhagia	12	8%
5	Menometorrhagia	8	5%

Table 6: Distribution of Endometrial causes of AUB according to Age Group of Patients

S. No.	Age group (years)	No. of cases	Percentage
1	18 – 40 years (reproductive)	60	40%
2	41 – 50 years (perimenopausal)	59	39%
3	>50 years (postmenopausal)	31	21%
	Total	150	

Table 7: The age wise distribution of clinical presentation of patients presenting with abnormal uterine bleeding

S.No.	Age groups/ Clinical Presentation	18-40 years	41-50 years	>50 years
1	Menorrhagia	65	17	0
2	Polymenorrhea	2	16	0
3	Post-menopausal bleeding	0	0	30
4	Metorrhagia	6	6	0
5	Menometorrhagia	4	4	0
	Total	77	43	30

**Fig. 1:** Gross photograph of hysterectomy specimen showing endometrial polyp and increased endometrial thickness.

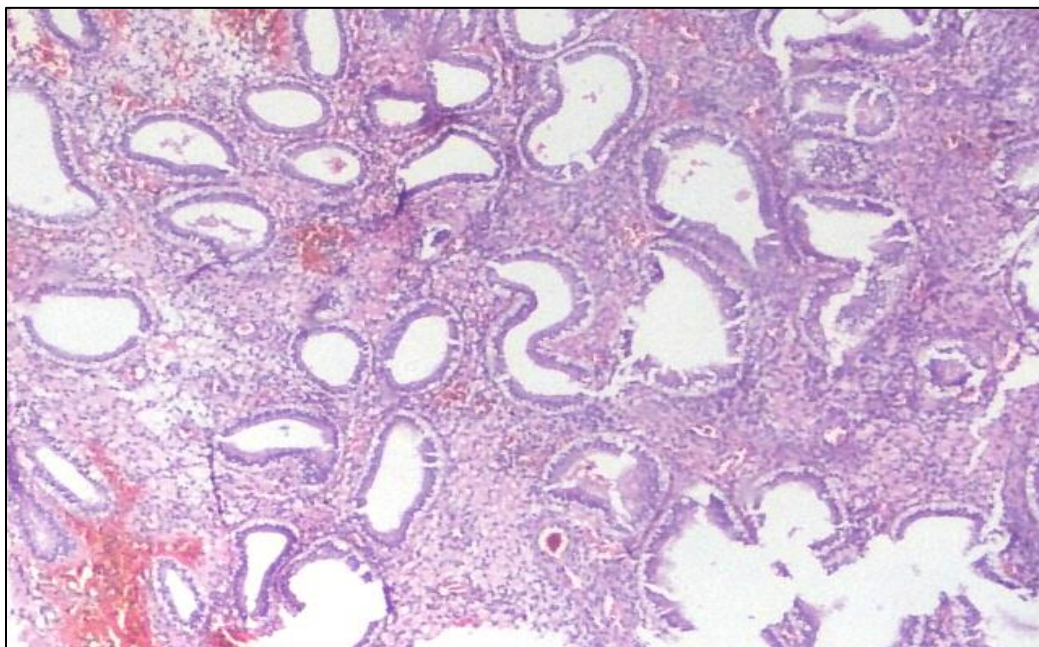


Fig. 2: Photomicrograph showing secretory endometrium. (40X, H&E)

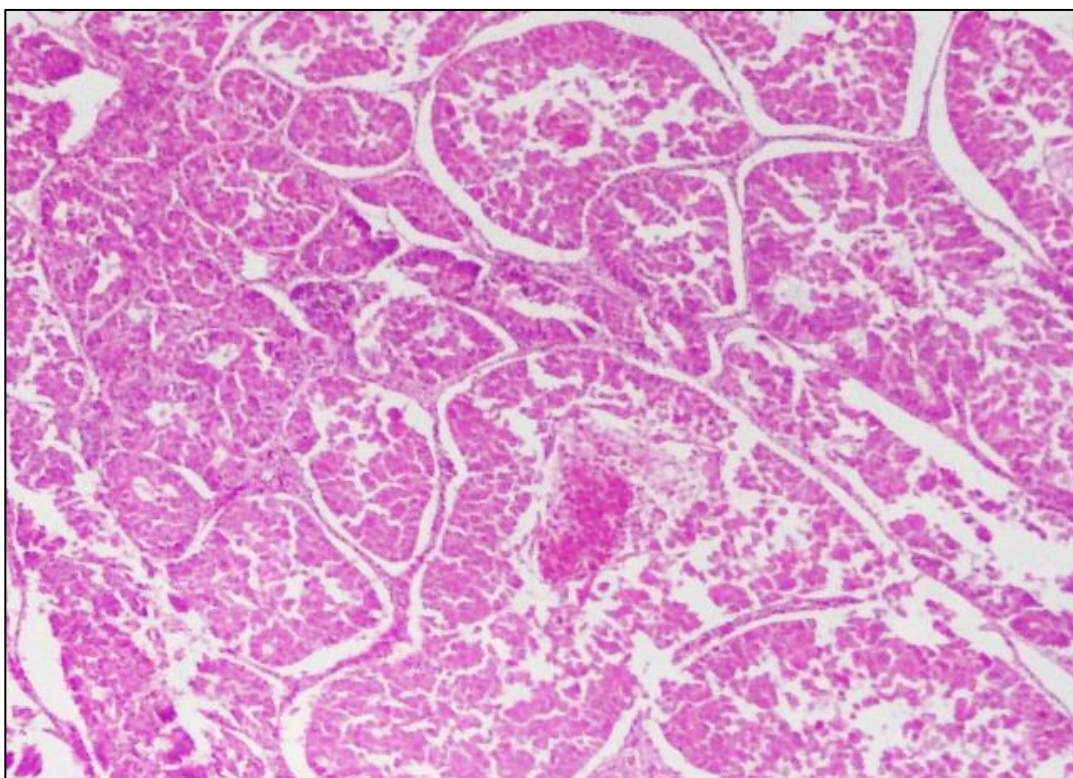


Fig.3: Photomicrograph showing well differentiated endometrial carcinoma (40X, H&E)