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Original Research Article

Histopathology of Endometrium in Patients Presenting with Abnormal Uterine Bleeding

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Abstract

Background: Abnormal uterine bleeding (AUB) is the most commonand challenging problems presenting to gynaecologists now-a-days. Any bleeding pattern deviated from normal menstrual cycle results in AUB.

Aims and objectives: The present study was conducted to study the histopathological patterns of endometrium in patients presenting with AUB and to elucidate the causes of AUB in different age-groups.

Materials and Methods: 200 cases were analysed in Index Medical College Research centre and Hospital, Indore. The study was conducted after satisfying the specific inclusion and exclusion criteria. The specimens were routinely processed and H & E stained slides were studied. A statistical analysis between the age of presentation and specific endometrial finding was done using Chi-square test.

Result: The most common age group presenting with AUB was perimenopausal (40-50 years) with 107(53.7%) cases followed by reproductive (<40 years) age group with 83 (41.5%) cases. The most common histopathological pattern in perimenopausal patients was simple hyperplasia in 34 (31.78%) cases followed by proliferative phase in 29 (27.10%) cases. Overall proliferative phase was in 64 (32%) cases, simple hyperplasia in 53 (26.50%) cases, secretory phase in 46 (23%) cases, atrophic endometrium in 14(7%) cases, asynchronous endometrium in 9 (4.50%) cases, complex hyperplasia in 6 (3%) cases, endometrial polyp in 4 (2%) cases, endometrial carcinoma in 4 (2%) cases.

Conclusion: The study of histopathological pattern of endometrium in AUB cases is helpful to diagnose and properly manage the cases. There is an age specific association of endometrial findings.

Keywords: Abnormal Uterine Bleeding; H&E Stain & Histopathological Findings.

Introduction

The uterine bleeding is said to be abnormal if it is excessive or scant or if it occurs at wrongtime.It is one of the most common problems and isresponsible for one third of all outpatients gynecologicalvisits [1]. AUB describes the spectrum of abnormal uterine bleeding not fulfilling the criteria of normal menstruation that is bleeding from secretory endometrium associated with an ovulatory cycle not exceeding a length of 5-7 days within an interval of 28-35 days. It presents either as a normal physiological state or can be a sign of underlying pathology. It may be a symptom of endometrial carcinoma in 8-50% cases. It causes iron deficiency anaemia in

developed countries and chronic illness in developing countries. AUB mainly results due to hormonal variations. The current concept states that AUB is due to local causes in endometrium which are primary or secondary to abnormalities in hypothalamus-pituitary-ovarian (HPO) axis.

PALM-COEINis a classification system developed by the International Federation of Gynecology and Obstetrics for the causes of abnormal uterine bleeding in reproductive age group [2]. This includes polyp, adenomyosis, leiomyoma, malignancy, hyperplasia,coagulopathy, ovulatory dysfunction, endometrial, iatrogenic and not yet classified. The cases of AUB may present in reproductive, premenopausal, post-menopausal age group with variations.

Materials and Methods

The study was conducted in Department ofPathology and Obstetrics and Gynecology ofIndex Medical College and their associated hospitals for a duration of 2 years. The study was a cross sectional study which includes D&C and hysterectomy specimen of clinically diagnosed 200 AUB patients, received from Gynecology Department of Index Medical College and Hospital.

The study included all endometrial biopsies or hysterectomy specimen of patients presenting with their self-described history of blood loss pattern whether being regular or irregular.

The study excluded patients below 15 years of age and those with intrauterine devices (IUD).

The endometrial biopsies or hysterectomy specimen were fixed in 10% formalin for 12-24 hours and paraffin blocks were prepared. 3-5µm thick sections were prepared from paraffin blocks and were stained with Haematoxylin and Eosin (H & E) and then studied. The histopathological findings were noted and then these findings were correlated.

Results

Table 1 shows the distribution of cases according to age group in relation to complaints.

The most commonly observed complaint was menorrhagia in 48 (57.83%)cases in reproductive age group, polymenorrhagia in 4 (40.00%) cases in postmenopausal age group, metromenorrhagia in 12 (11.21%) cases in perimenopausal age group.

There was no statistically significant association seen between complaints and age group (P>0.05), showing that complaints are independent of the age group.

Table 2 shows the distribution of cases according to HPE findings. Overall proliferative phase was the most common HPE finding followed by simple hyperplasia and then secretory phase.

Table 1: Distribution of complaints in relation to different age groups

Complaints	Reproductive age group (<40 years)	Perimenopausal Group (40-50 years)	Postmenopausal age group (>50 years)	Total
Menorrhagia	48 (57.83%)	55 (51.40%)	5 (50.00%)	108 (54.00%)
Polymenorrhagia	16 (19.28%)	16 (14.95%)	4 (40.00%)	36 (18.00%)
Metromenorrhagia	7 (8.43%)	12 (11.21%)	1 (10.00%)	20 (10.00%)
Metrorrhagia	8 (9.64%)	17 (15.89%)	0 (0.00%)	25 (12.50%)
Oligomenorrhea	4 (4.82%)	7 (6.54%)	0 (0.00%)	11 (5.50%)
Overall	83 (100.00%)	107 (100.00%)	10 (100.00%)	200 (100.00%)

Pearson Chi-Square = 7.674, DF = 8, P value = 0.466, Not significant

Table 2: Distribution of HPE grading leading to various causes in relation to age groups

HPE Grading leading to causes of AUB	Age Group			Total
	Reproductive age group(<40 years)	Peri-menopausal age group (40-50 years)	Post-menopausal age group (>50 years)	
Proliferative phase	35 (42.17%)	29 (27.10%)	0 (0.00%)	64 (32.00%)
Secretory phase	28 (33.73%)	18 (16.82%)	0 (0.00%)	46 (23.00%)
Simple hyperplasia	14 (16.87%)	34 (31.78%)	5 (50.00%)	53 (26.50%)
Complex hyperplasia	0 (0.00%)	5 (4.67%)	1 (10.00%)	6 (3.00%)
Asynchronous endometrium	5 (6.02%)	4 (3.74%)	0 (0.00%)	9 (4.50%)
Atrophic endometrium	0 (0.00%)	10 (9.35%)	4 (40.00%)	14 (7.00%)
Endometrial polyp	1 (1.20%)	3 (2.80%)	0 (0.00%)	4 (2.00%)
Endometrial adeno-carcinoma	0 (0.00%)	4 (3.74%)	0 (0.00%)	4 (2.00%)
Total	83 (100.00%)	107 (100.00%)	10 (100.00%)	200 (100%)

Pearson Chi-Square = 53.663, DF = 14, P value = 0.0001, Significant

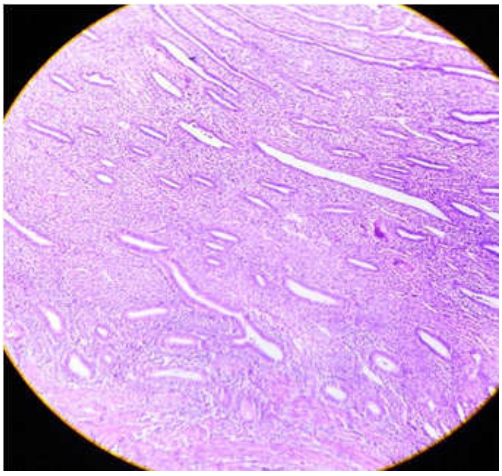

Fig. 1: Proliferative phase (H & E, 10X), Figure shows straight and tubular endometrial glands.

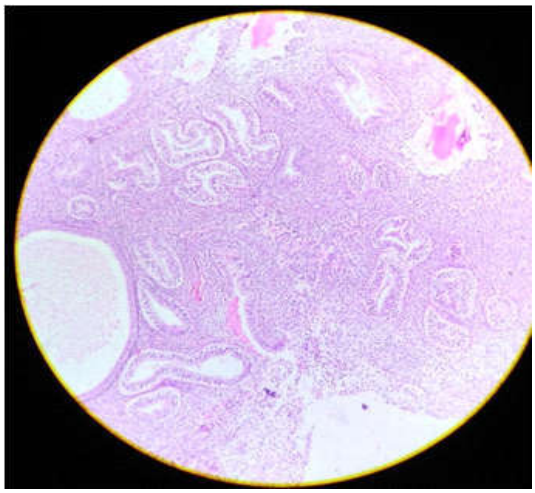

Fig. 2: Secretory Phase (H & E, 10X), Figure shows subnuclear-vacuolations in coiled secretory glands

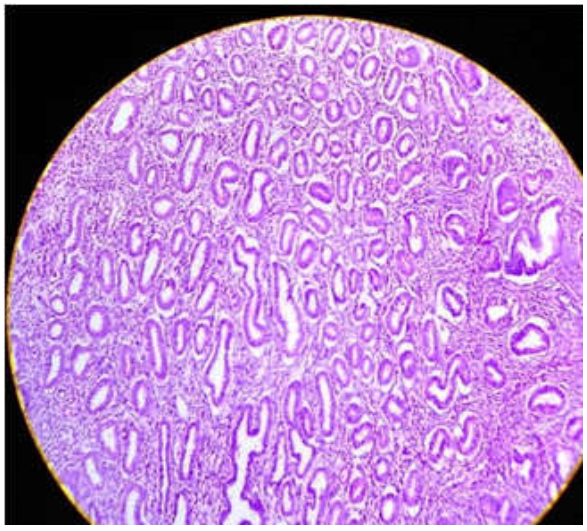

Fig. 3: Simple hyperplasia (H & E, 10X), Figure shows increased gland to stromal ratio

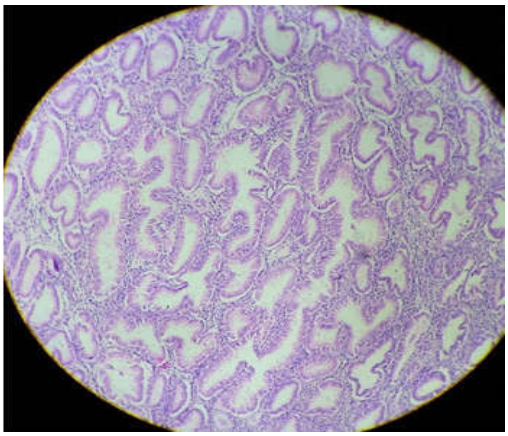

Fig. 4: Complex hyperplasia(H & E, 10X), Figure shows back to back arrangement of glands

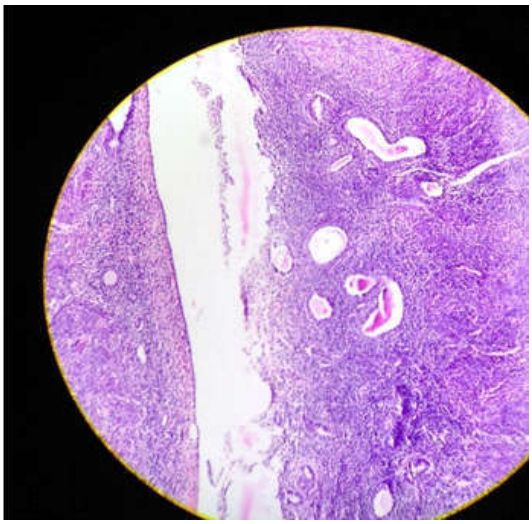

Fig. 5: Atrophic endometrium (H & E, 10X), Figure shows round dilated glands with no cellular activity

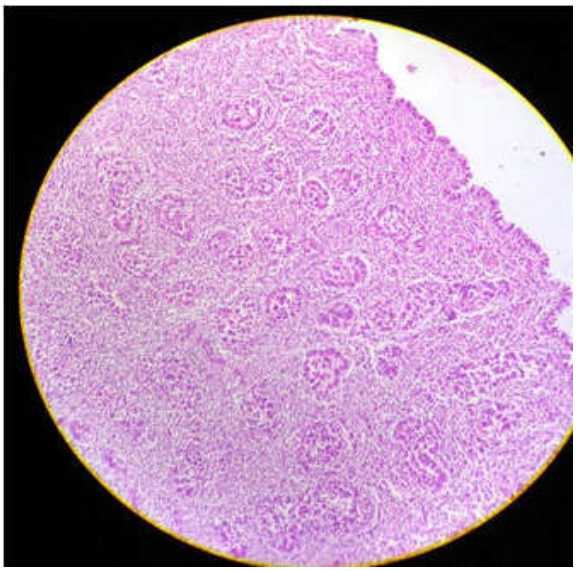

Fig. 6: Asynchronous endometrium (H & E, 10X),Figure showing asynchrony in maturation of glands

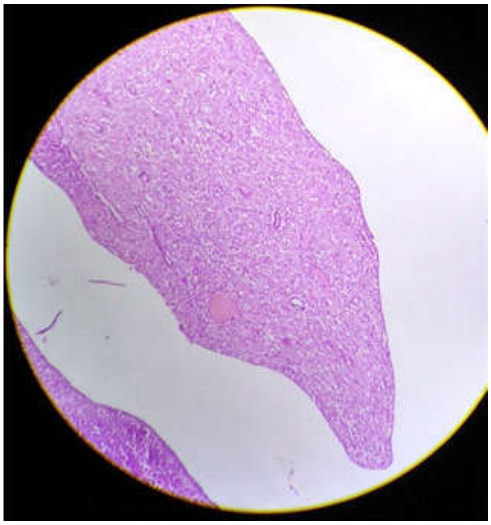

Fig. 7: Endometrial polyp(H & E, 10X), Figure shows polypoid structure with endometrial lining along with endometrial glands and thick walled blood vessels

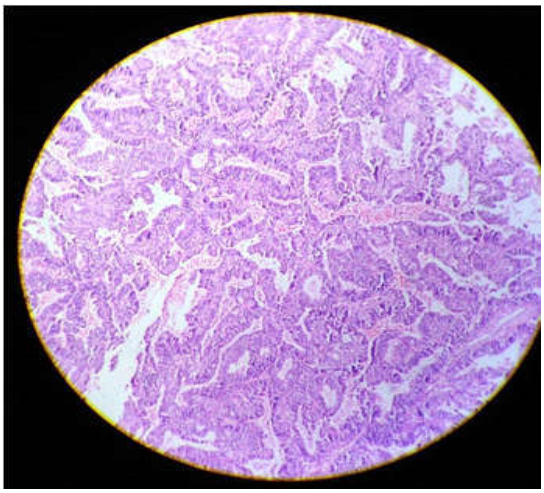

Fig. 8: Endometrial carcinoma (H & E, 10X), Figure shows fibrovascular core, stratification, high N/C ratio and back to back arrangement in gland

There was a statistically significant association (P<0.05) seen between the HPE findings and the age groups showing that age group impacts the HPE findings.

Discussion

Abnormal uterine bleeding (AUB) is now-a-days a complex and most frequently encountered problem faced by gynaecologists. It is often difficult to diagnose and troublesome to treat. The study of histopathological pattern of endometrium in cases of AUB is the single most important investigation that helps the clinician to better understand the mysterious disorder and then to treat it effectively. The postmenopausal bleeding is of special concern because it is the only common clinical indication for the presence of endometrial carcinoma. AUB may present at any age between puberty and menopause, based on it the patients were classified into reproductive (<40 years); perimenopausal (40-50 years) and postmenopausal (>50 years) age group.

In our study, out of 200 cases, we found maximum cases in perimenopausal age group i.e 107 (53.5%) cases followed by 83 (41.5%) cases in reproductive age group and this corresponds to various other studies which were conducted by Gopalanet et. al. (2017) [3] who in their study detected 54.7% cases in perimenopausal age group, 23.4% cases in reproductive age group. Fatima and Dombale et. al. (2017) [4] detected 37.32% cases in perimenopausal age group followed by 35.56% cases in reproductive age group. Talukdar et. al. (2016) [5] detected 63.89% cases in perimenopausal age group, Agrawal et al (2016)[6] found 37.8% cases to be maximum in perimenopausal age group. Salvi et. al. (2015)[7] detected 52% cases in perimenopausal age group supporting the present study. In contrast the studies of Rizvi et. al .(2017)[8] in their study detected 64.8% cases in premenopausal age group with Riju et. al. (2016)[9] studied 51.6% cases to be maximum in reproductive age group. Similarly in making a comparison in presenting complaint, in perimenopausal age group menorrhagia was detected to be the most common complaint. Talukdar et. al. (2016) [5] in 44.44% cases detected menorrhagia to be the commonest complaint supporting the present study where we detected 55 (51.40%) cases presenting with menorrhagia in perimenopausal age group.

With regard to histopathological findings overall, proliferative endometrium was the commonest finding being detected by Salvi et. al. (2015) [7] in 53.8% cases, Agrawal et. al. (2016) [6] detected in 51.2%, Nithyanand et. al. (2017)[10] detected maximum 21 cases, Gopalanet et. al. (2017)[3] detected 47.73% cases to be in proliferative endometrium as major finding supporting the present study where we detected 64(32%) cases with proliferative endometrium. In reproductive age group, we found proliferative phase in 35(42.17%) cases followed by secretory phase in 29(27.10%) cases which was similar to the study conducted by Rizvi et. al. (2017)[8] who in their study detected proliferative endometrium in 48% cases followed by secretory endometrium in 31% cases. In perimenopausal age group we in our study found simple hyperplasia in 34(31.78%) cases followed by proliferative endometrium in 29(27.10%) cases, secretory endometrium in 18 (16.82%) cases, considering simple hyperplasia to be the most common finding and thisis being supported by the studies of Rizvi et. al. (2017) [8]who in their study detected simple hyperplasia in 41% cases and Talukdar et. al. (2017) [5] detected hyperplasia in 83(46.11%) cases. In present study simple hyperplasia was the most frequent finding, it might be because in this age group menstrual

cycles often become irregular due to decreased number of follicles and their increased resistance to gonadotropic stimulation, resulting in low level of estrogen which cannot keep the normal endometrium growing. In comparison, the studies conducted by others found proliferative endometrium to be the most frequent finding in perimenopausal group as by Riju et. al. (2016) [9] who detected proliferative endometrium in 35.6% cases, Agrawal et. al. (2016)[6] detected 51.2% cases and Salvi et al. (2015)[7] detected 53.8% cases as majority in proliferative endometrium. In postmenopausal age group, in our study we got hyperplasia as the major finding followed by atrophic endometrium. 5 cases(50%) were with simple hyperplasia, 1(10%) was with complex hyperplasia, 4 cases(40%) were with atrophic endometrium taking in account the study of Rizvi et al (2017) [8] who in their study detected complex hyperplasia in 33.3% cases followed by atrophic endometrium in 27% cases and there by supporting our study where we too detected hyperplasia to be the most frequent finding. Though the study conducted by Nithyanand et. al. (2017) [10] detected atrophic endometrium in maximum cases followed by hyperplasia. Similarly Talukdar et. al. (2016)[5] detected atrophic endometrium in 55.56% cases as major finding, Riju et. al. (2016) [9] detected atrophic endometrium in majority. Agarwal et. al. (2016) [6] detected atrophic endometrium in 43.9% cases and Salvi et al (2015) [7] detected atrophic endometrium in 30.77% cases followed by endometrial hyperplasia in 26.15% cases. These variations in the comparative studies may be due to small sample size of the present study.

Conclusion

The prevalence of Abnormal Uterine Bleeding is increasing so it is important to detect the exact pathology behind it. In our present approach, the study of endometrial histopathology in various age groups in patients clinically diagnosed as AUB is helpful to diagnose various underlying pathologies like endometrial polyp, hyperplasia and endometrial carcinoma. The endometrial biopsy for many years has been the method of choice for diagnosis of endometrial carcinoma in patients with perimenopausal and postmenopausal bleeding. Apart from it, the various endometrial histopathological patterns detected ranged from proliferative endometrium, secretory endometrium, simple and complex hyperplasia with or without atypia, asynchronous endometrium and atrophic endometrium. AUB is a problem detected commonly in perimemopausal group followed by reproductive age group. Menorrhagia was the commonest bleeding pattern observed. Proliferative endometrium and secretory endometrium were the common presentations in reproductive age group with simple hyperplasia in perimenopausal age group. Hysterectomy should be performed when the risk of preserving the uterus is greater than the risk of its removal or when there are disabling symptoms for which there is no successful medical treatment.

References

1. Awwad JT, Toth TL, Schiff I. Abnormal Uterine Bleeding in the Perimenopause. Int J Fertil Menopausal Stud. 1993 Sep-Oct;38(5):261-9.
2. Munro M, Critchleyc H, Broder M, Fraser I, FIGO Working Group on Menstrual Disorders. FIGO classification system (PALM-COEIN) for causes of abnormal uterine bleeding in non-gravid women of reproductive age. Int J Gynaecol Obstet.2011;113(1):3-13.
3. Ushadevi G, Sathiyakala R, Karnaboopathy R. Study of endometrial histopathology in women with abnormal uterine bleeding. IJRCOG 2017;6(3).
4. Fatima A, Dombale VD. Morphological Spectrum of Endometrium in Dysfunctional Uterine Bleeding. Indian Journal of Pathology. Research and Practice. 2017;6(2).
5. Talukdar B, Goswami RR, Mahela S, Ahmed NI. Histopathological pattern of endometrium in abnormal uterine bleeding of perimenopausal women. Int J ReprodContraceptObstet Gynecol. 2016;5(4):1162-66.
6. Agarwal P, Garg R, Rai N, Prakash P. Abnormal Uterine Bleeding. J South Asian Feder Menopause Soc. 2016;4(1): 22-26.
7. Salvi A, Mital P, Hooja N, Batar A, Soni P, Beniwal R. Spectrum of endometrial histopathology in women presenting with abnormal uterine bleeding. Sch J App Med Sci. 2015;3(1A):1-4.
8. Sarwat R, Rabia W, Ghazala S, Anum J, Rubar H. Clinicopathological Spectrum of Endometrium in Abnormal Uterine Bleeding. Study in a tertiary care hospital in Lahore. PJMHS. 2017;11(1):227-30.
9. Deka RR, Saikia T, Handique A, Sonowal B. Histopathological Spectrum of endometrial changes in women presenting with abnormal uterine bleeding with special reference to endometrial malignancies. A two years hospital based study. Annals of Applied Bi-Sciences. 2016;3(2).
10. Nithyananda BS, Bheeshma B, Anjum Fatima. Histopathological spectrum of endometrial lesions in perimenopausal and postmenopausal women in abnormal uterine bleeding. IJSR. 2017;6(7).