

Diagnostic Utility of Endometrium Study in Abnormal Uterine Bleeding- An Institutional Study

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Abstract: Background: Abnormal uterine bleeding (AUB) is a clinical term to describe any type of bleeding that does not fall within the normal ranges for amount, frequency, duration or cyclicity. It causes considerable morbidity and affects patient's life. The aim of the study was to analyse the histopathological patterns of endometrium in patients presenting with AUB and also to determine the incidence of AUB in various age groups.

Materials and Methods: This is a prospective study that included 317 patients with clinical diagnoses of AUB during 3 years study period from June 2015 to May 2018 in Department of Pathology at Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha. Data was entered in Microsoft excel and analysed in form of percentages and represented as tables where necessary.

Results: Proliferative endometrium (n=127, 40%) is the most frequent finding in endometrial patterns followed by extraneous hormonal effect (n=55, 17%), secretory endometrium (n=34, 11%) and atrophic endometrium (n=29, 9%). Retained product of conception (n=20, 6%), hyperplasia (n=23, 7%) and endometrial carcinomas (n=8, 3%) should be ruled out.

Conclusion: Histopathological examination of endometrium should be done in patients presenting with abnormal uterine bleeding in all age groups.

Keywords: Endometrium, Abnormal uterine bleeding, Dysfunctional uterine bleeding

Date of Submission: 21-09-2019

Date of Acceptance: 10-10-2019

I. Introduction

Abnormal uterine bleeding (AUB) is a clinical term. FIGO defined it as a term used to describe any type of bleeding that does not fall within the normal ranges for amount, frequency, duration or cyclicity¹. AUB includes menorrhagia, metrorrhagia, polymenorrhoea and intermenstrual bleeding. Dysfunctional uterine bleeding (DUB) – term is used after excluding pregnancy or pregnancy-related disorders, medications, iatrogenic causes, obvious genital tract pathology, and systemic conditions. DUB is the most common cause of AUB in adolescent age group. Histopathological examination is the standard diagnostic procedure for the assessment of abnormal uterine bleeding. The aim of the study was to analyse the histopathological patterns of endometrium in patients presenting with AUB and also to determine the incidence of AUB in various age groups.

II. Materials And Methods

This is a prospective study that included 317 patients with clinical diagnoses of AUB during 3 years study period from June 2015 to May 2018 in Department of Pathology at Hi-Tech Medical College and Hospital, Bhubaneswar, Odisha (India).

Patients with leiomyoma, adenomyosis, cervical or vaginal pathology were excluded and those with isolated endometrial causes of abnormal uterine bleeding were included in the study.

All specimens were preserved in 10% formalin and sent to histopathology section where gross morphology was recorded. Endometrial samples were submitted in total. Representative bits were taken from hysterectomy specimens. These tissue bits were processed and paraffin blocks were made. Tissue sections (4-6 microns) were cut and stained with hematoxylin and eosin stain (H&E) and microscopically examined.

III. Results

A total of 161 endometrial specimens and 301 hysterectomy specimens with a clinical diagnosis of AUB were studied (Table1).

Table 1 Distribution of cases

	Total number of cases
Endometrial specimens	161
Hysterectomy specimens	301
Total	462

Isolated endometrial pathology as a cause of AUB was observed in 317 patients. The remaining 145 patients who had leiomyoma, adenomyosis and cervical pathology with or without endometrial lesions were excluded from our final diagnosis (Table 2).

Table 2 Distribution of endometrial pathology

	Total number of cases
Isolated endometrial pathology	317
Leiomyoma+ endometrial pathology	59
Adenomyosis + endometrial pathology	86
Total	462

Patients' age ranged from 20 years to 79 years and most of them were seen in the age group of 40-49 years, followed by 30-39 years (Table 3).

Table 3 Distribution of patients with abnormal uterine bleeding in different age groups (n=317)

Age(in years)	No. of patients	Percentage
20-29	32	10.09%
30-39	68	21.45%
40-49	150	47.32%
50-59	42	13.25%
60-69	19	5.99%
>70	6	1.89%
Total	317	100%

Histopathological examination showed proliferative endometrium as the predominant finding 127 (40%) followed by extraneous hormonal effect (17%). Endometrial carcinoma comprised of 8 (3%) of the cases. The distribution of endometrial patterns in abnormal uterine bleeding is given in table 4.

Table 4 Distribution of endometrial patterns in abnormal uterine bleeding patients

Endometrial pattern	No. of patients	Percentage
Atrophic endometrium	29	9%
Atypical hyperplasia	12	4%
Chronic endometritis	8	3%
Endometrial carcinoma	8	3%
Extraneous hormonal effect	55	17%
Hyperplasia without atypia	11	3%
Polyp	13	4%
Proliferative endometrium	127	40%
Retained products of conception	20	6%
Secretory endometrium	34	11%
Total	317	100%

The most histopathological pattern in the AUB patients in age group of 20-29 years was retained products of conception (13) followed by proliferative endometrium (10). Across all other age groups, the most frequent finding is proliferative endometrium. Extraneous hormonal effect is the next common finding in the reproductive age group (30-39years) and perimenopausal age group (40-59 years). Diagnosis of endometrial carcinoma was made in 8 patients (3%) across different age groups. The comparison of histological patterns in different age groups is given in table 5.

Table 5 Comparison of histological patterns in different age groups

Endometrial Pattern	Age Group (in Years)						Grand Total
	20-29	30-39	40-49	50-59	60-69	>70	
Atrophic endometrium			11	9	8	1	29
Atypical hyperplasia	1	4	4	1		2	12

Chronic endometritis	1		6		1		8
Endometrial carcinoma		1	1	3	2	1	8
Extraneous hormonal effect	2	12	30	10	1		55
Hyperplasia without atypia	1	4	4	1	1		11
Polyp	1	2	5	2	2	1	13
Proliferative endometrium	10	32	69	11	4	1	127
Retained products of conception	13	4	3				20
Secretory endometrium	3	9	17	5			34
Grand Total	32	68	150	42	19	6	317

IV. Discussion

AUB comprises almost 25% of gynaecological operations and 20% of outpatients visits². Abnormal uterine bleeding is a commonly encountered gynaecological problem³. It includes both dysfunctional uterine bleeding (DUB) and bleeding from structural causes like fibroids, polyps, endometrial carcinoma and pregnancy complications⁴. Dysfunctional uterine bleeding is defined as abnormal uterine bleeding without a demonstrable organic cause⁵. In the present study, isolated endometrial pathology as a cause of AUB was observed in 317 patients ranging from 20 years to 79 years.

The most common age group presenting with AUB in this study was 40-49 years. Similar observations were also made by Doraiswami et al⁶, Jairajpuri et al⁷, Vaidya et al⁸, Yusuf et al⁹ and Muzafar et al¹⁰. The reason for increased incidence of abnormal uterine bleeding in this age group (40-49 years) may be due to the fact that these patients are in their climacteric period⁶. As women approach menopause, cycles shorten and often become intermittently anovulatory due to a decline in the number of ovarian follicles and the estradiol level⁶.

The incidence of AUB between 50 and 69 years was lower as compared to those between 40 and 49 years. The reason for this finding may be due to the fact that the patients were evaluated much earlier and treated appropriately thereby decreasing the incidence in later age group as also observed by Doraiswami et al⁶.

In the present study, proliferative endometrium (n= 127, 40%) was most frequent finding in histopathological examination as comparable to Bhatta et al¹¹ (38.5%) whereas most other studies show a lower incidence with 20.56%, 29.16% and 35.09%^{12,13,14}. Secretory endometrium seen in 11% of cases which is lower as compared to Talukdar B et al.¹² (16.11%), Jairajpuri et al⁷ (28.9%), Abdullah¹⁵ (24.9%) and most other studies. The bleeding in the proliferative phase may be due to anovulatory cycles and bleeding in the secretory phase is due to ovulatory dysfunctional uterine bleeding.

Pregnancy is the first consideration in women of childbearing age who present with abnormal uterine bleeding. Patients presenting with abnormal uterine bleeding in this age range should be investigated and evaluated for pregnancy¹⁶. A total of 20 patients (6%) with retained products of conception presented with abnormal uterine bleeding, most of them fall in the age group of 20-29 years (n=13).

Effects of exogenous hormones (pill endometrium) were seen in 55 (17%) cases of AUB. In other studies its incidence was lower and varied from 1.7%- 4.81%^{7,10,17,18}. As in other studies,^{7,10,17,18} pill endometrium was commonly seen in our study in the reproductive and perimenopausal age groups.

Atrophic endometrium comprised of 29 (9%) cases of AUB and was most common in the 40-49 years age group. In other studies,^{6,7,15,22} 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 mechanisms⁶.

Endometrial hyperplasia without atypia and atypical hyperplasia are considered to be precursors of endometrial carcinoma¹⁹. Progression to well-differentiated endometrial carcinoma occurs in 1-3% of women with hyperplasia without atypia²⁰ and 14-fold risk in cases of atypical hyperplasias²⁰. In the present study 7% hyperplasia (4% atypical hyperplasia and 3% hyperplasia without atypia) were seen which is higher comparable to Jairajpuri et al⁷ (5.79%) and lower as compared to Abdullah¹⁵ (9.1%), Vaidya et al⁸ (10.92%) and Muzafar et al¹⁰ (24.7%).

Endometrial carcinoma was reported in 3% cases which is comparable to Vaidya et al⁸ (2.48%) and Mencalgia (3.33%) but lower as compared to Doraiswami et al⁶ (4.4%). As reported in the literature,^{13,6,15,18} endometrial carcinoma was also commonly seen in the post menopausal age group in our study.

Chronic endometritis was seen in 3% of patients in the present study which is comparable to Vaidya et al⁸ (3.23%). Higher incidence varying from 5.8 to 24% have been reported in the literature^{7,15,22}. It is often as a result of intra-uterine contraceptive devices (IUCD), pregnancy and incomplete abortions⁷.

V. Conclusion

The histopathological patterns seen in patients of abnormal uterine bleeding varies among different age groups. It is important to rule out retained products of conception in younger patients as it directly affects clinical outcome. Precursor lesions and malignancy should be ruled out in perimenopausal and postmenopausal patients.

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Dr.Tapaswini Bhuyan. "Diagnostic Utility of Endometrium Study in Abnormal Uterine Bleeding- An Institutional Study." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, vol. 18, no. 10, 2019, pp 15-18.