ROLE OF ENDOMETRIAL BIOPSY IN THE EVALUATION OF ABNORMAL UTERINE BLEEDING- A RETROSPECTIVE ANALYSIS OF 150 CASES

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ABSTRACT

BACKGROUND

Abnormal uterine bleeding is an important symptom of both benign and serious gynaecological disease. Early evaluation of abnormal uterine bleeding in the perimenopausal and postmenopausal women is essential to confirm the exact nature of the lesion and rule out malignancy.

This study is designed to analyse the various histopathological patterns seen in the endometrial samples of women with abnormal uterine bleeding and thereby guides the clinician to make a definitive diagnosis and treat the cause.

MATERIALS AND METHODS

The current retrospective descriptive study includes 150 women over the age of 20 years who presented with features of abnormal uterine bleeding in the Gynaecology outpatient department of Government Kasturba Gandhi Hospital, Chennai, during the period of October to December 2017. Relevant clinical data regarding the age, pattern and duration of abnormal bleeding, marital, menstrual and obstetric history were collected. Endometrial samples were obtained by dilatation and curettage or pipelle biopsy. Histological diagnosis was made by the pathologists. Data was entered in Microsoft Excel and statistical analysis was done using SPSS version 20.

RESULTS

The age of the patients ranges from 23 - 73 years. Maximum number of patients were in the age group of 41 - 50 years. The predominant pattern was secretory endometrium in 52 cases (34.6%) followed by proliferative endometrium in 45 cases (30%). Hyperplasia was noted in 22 cases (14.6%) and endometrial carcinoma was found in 8 cases (5.3%).

CONCLUSION

Endometrial sampling is the gold standard investigation in the evaluation of AUB. Histopathological examination of the endometrial samples in various forms of abnormal uterine bleeding helps to diagnose pathologic conditions like hyperplasia and endometrial carcinoma and facilitates appropriate treatment of the same. Therefore, histopathological examination of endometrium is especially indicated in women over 35 years to rule out pre-neoplastic and malignant conditions.

KEY WORDS

Endometrial Hyperplasia, Endometrial Carcinoma, Dilatation and Curettage.

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BACKGROUND

Abnormal uterine bleeding is the term used to describe any type of bleeding that does not fall within the normal limits for duration, amount and frequency.[1] It is an important clinical symptom of both benign and serious gynaecological disease conditions. Also, it is the most common reason for referral of patients with gynaecological complaints.[2] Excessive menstrual blood loss affects about 10% - 30% of menstruating women.[3] Women with abnormal uterine bleeding most commonly present in the gynaecological outpatient department with menorrhagia, polymenorrhoea, oligomenorrhoea, metrorrhagia and intermenstrual bleeding. AUB can be caused by a wide variety of conditions. Dysfunctional uterine bleeding is the most common reason for AUB in adolescents.

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Pregnancy related causes are common in young patients, whereas organic lesions and atrophic endometrium are the aetiologies for abnormal uterine bleeding in older adults. AUB in patients older than 40 years require the exclusion of endometrial polyp, fibroids, hyperplasia and carcinoma of the endometrium. Among the patients undergoing endometrial biopsy as a part of evaluation of abnormal uterine bleeding, endometrial hyperplasia is seen in up to 16% and endometrial carcinoma is found in about 10% of the cases.[4] Therefore, early evaluation of abnormal uterine bleeding in the perimenopausal and postmenopausal women is absolutely necessary to confirm the exact nature of the lesion and rule out malignancy. Dilatation and curettage, hysteroscopy and micro-hysteroscopy are some of the various clinical screening modalities for early detection of endometrial pathology in women with irregular uterine bleeding. Endometrial sampling by dilatation and curettage is considered the gold standard in the evaluation of Abnormal Uterine Bleeding. It also allows fractional curettage and separate sampling of endocervical and endometrial tissue. This study is designed to analyse the various histopathological patterns seen in the endometrial tissue samples of women with abnormal uterine bleeding and helps to define various endometrial pathologies associated with

Abnormal Uterine Bleeding, thereby guiding the clinicians to make a definitive diagnosis and treat the cause.

MATERIALS AND METHODS

The current retrospective descriptive study includes 150 women over the age of 20 years who presented with features of Abnormal Uterine Bleeding in the Gynaecology outpatient department of Government Kasturba Gandhi Hospital, Chennai, during the period of October to December 2017. Patients with gestational causes of bleeding, cervical or adnexal pathology on clinical examination or ultrasound, history or evidence of acute pelvic infection and haemostatic disorders were excluded from the study.

Relevant clinical data regarding the age, pattern and duration of abnormal bleeding, marital, menstrual and obstetric history were collected.

Endometrial samples were obtained by dilatation and curettage or pipelle biopsy. The tissues were fixed in 10% neutral buffered formalin, taken to the Department of Pathology, processed using automatic tissue processor and embedded in paraffin wax; 3 - 4 microns thick sections were made and stained with haematoxylin and eosin. The stained sections were examined microscopically, and histological diagnosis was made by the pathologists.

Data were entered in Microsoft Excel and statistical analysis was done using SPSS version 20 in the form of percentage and proportions, which have been represented in tables and figures where necessary.

The study was carried out after obtaining permission from the Institutional Ethics Committee.

RESULTS

The age of the patients ranges from 23 - 73 years. Maximum number of patients were in the age group of 41 - 50 years. Age distribution among the patients is illustrated in Table/Fig. 1.

The patients were divided into four groups under the following age ranges 21 - 30, 31 - 40, 41 - 50 and > 50 years and histopathological findings were analysed accordingly.

The predominant pattern was secretory endometrium in 52 cases (34.6%) followed by proliferative endometrium in 45 cases (30%). Hyperplasia was noted in 22 cases (14.6%) and endometrial carcinoma was found in 8 cases (5.3%). The proportion of various histopathological findings of endometrium amongst the cases is depicted in Table/Fig. 2 and 3.

Table/Fig. 4 and 5 shows the various histopathological findings observed in the endometrial samplings of the patients with Abnormal Uterine Bleeding.

Age Range (In Years)	Frequency	Percentage
21-30	4	2.7
31-40	37	24.7
41-50	100	66.6
>50	9	6.0
Total	**150**	**100**

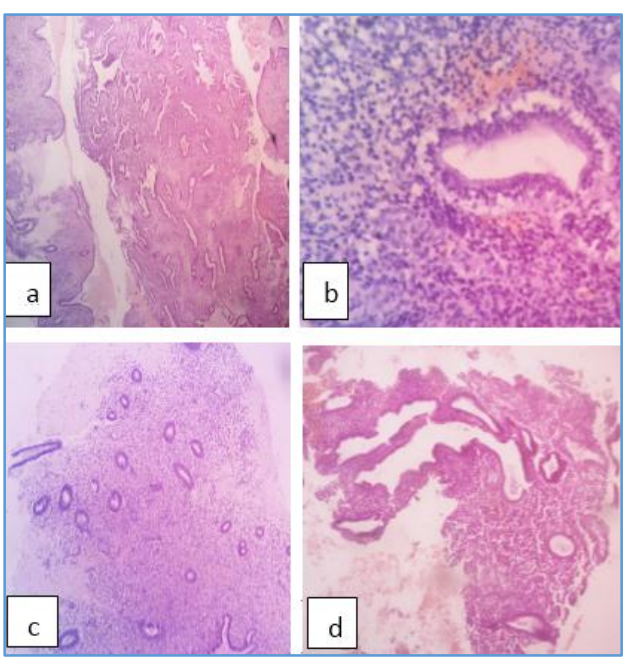
Table/Figure 1. Distribution of Patients with AUB in different Age Groups

HPE Findings	Frequency	Percent
Secretory	52	34.7
Proliferative	45	30
Disordered proliferative phase	15	10
Simple hyperplasia	13	8.7
Simple atypical hyperplasia	2	1.3
Complex hyperplasia	4	2.7
Complex atypical hyperplasia	3	2.0
Atrophic	3	2.0
Inadequate	5	3.3
Adenocarcinoma	8	5.3

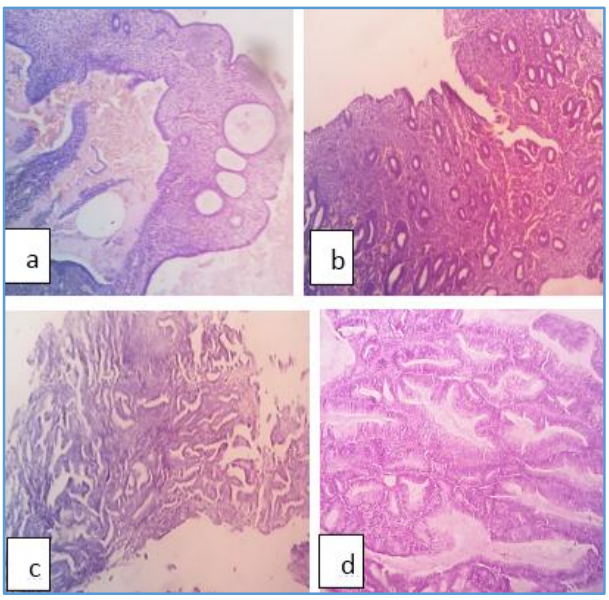
Table/ Figure 2. Distribution of Endometrial Patterns in AUB Patients

HPE Findings	Age Group			
	21-30	31-40	41-50	>50
Secretory	2 (3.8%)	13 (25%)	37 (71.2%)	0
Proliferative	1 (2.2%)	14 (31.1%)	29 (64.4%)	1
Disordered proliferative phase	0	4 (26.7%)	11 (73.3%)	0
Simple hyperplasia	1 (7.7%)	2 (15.4%)	10 (76.9%)	0
Simple atypical hyperplasia	0	0	2 (100%)	0
Complex hyperplasia	0	0	3 (75%)	1 (25%)
Complex atypical hyperplasia	0	2 (66.7%)	1 (33.3%)	0
Atrophic	0	0	0	3 (100%)
Inadequate	0	2 (40%)	3 (60%)	0
Adenocarcinoma	0	0	4 (50%)	4 (50%)

Table/ Figure 3. Comparison of Histopathology of Endometrium in various Age Groups



Table/ Figure 4. (a) Shows Endometrial Glands in Secretory Phase, H and E 100x, (b) Shows Endometrial Gland in Secretory Phase Exhibiting Subnuclear Vacuolation and Stroma showing Decidual Changes, H and E, 400x, (c) Shows Endometrial Glands in Proliferative Phase, H and E, 100x, (d) Shows Endometrial Glands in Disordered Proliferative Phase, H and E, 100x



Table/ Figure 5. (a) Shows Senile Cystic Atrophy of the Endometrial Glands, H and E, 100x, (b) Shows Simple Hyperplasia of Endometrial Glands, H and E, 100x, (c) Shows Complex Hyperplasia of Endometrial Glands, H and E, 100x, (d) Shows Endometrial Adenocarcinoma, Endometrioid Type, H and E, 100x

DISCUSSION

In this study, we have analysed the histopathology of endometrium in patients with Abnormal Uterine Bleeding to identify the endometrial causes and to facilitate appropriate treatment of the same.

According to various studies, incidence of Abnormal Uterine Bleeding is maximum in the perimenopausal age group[5,6,7,8] of 41 - 50 years. Menorrhagia has been the commonest presentation. In studies by Khan et al[9] and Takreem et al,[10] the incidence of endometrial hyperplasia has been reported as 12.6% and 15% respectively, whereas in our study the incidence of endometrial hyperplasia was 14.6%. In the current study the maximum incidence of hyperplasia is in the age group of 40 - 60 years, which is consistent with findings in other studies.[11,12]

Identification of endometrial hyperplasia is important, because they are thought to be precursors of endometrial carcinoma.[7] The overall risk of progression of endometrial hyperplasia to cancer is 5 - 10%. Simple hyperplasia, complex hyperplasia, simple atypical hyperplasia and complex atypical hyperplasia carry a risk of progression to endometrial carcinoma in 1%, 3%, 8% and 29% patients respectively.[13]

The proportion of different types of hyperplasia observed in this study were simple hyperplasia in 13 cases (8.7%), simple atypical hyperplasia in 2 cases (1.3%), complex hyperplasia in 4 cases (2.7%) and complex atypical hyperplasia in 3 cases (2%). In this study proliferative endometrium accounts for about 30% cases, whereas in other studies it accounts for about 33% and 32%.[12,14]

The proliferative lesions of endometrium have disordered proliferative phase at one end of the spectrum and endometrial carcinoma at the other end, having endometrial hyperplasia in the intervening stages. Disorderly proliferative endometrium, which occurs due to persistent oestrogen stimulation is an exaggeration of normal proliferative phase without significant increase in the overall gland-stromal ratio.[15] Such a pattern was seen in 15 cases (10%) in our study, which is concurrent with the study conducted by Khan et al.[9]

Atrophic endometrium is the most common cause of bleeding in the postmenopausal stage.[16] It occurs due to prolonged absence of oestrogenic hormonal stimulation. Thin atrophic endometrium is prone to trivial injuries, thereby leading to the rupture of underlying superficial dilated venules and can cause postmenopausal bleeding even in the absence of any organic lesion. In this study atrophic pattern constituted about 2% cases, whereas in a study conducted by Ara et al it was about 4.3%.[16]

Endometrial carcinoma occurs commonly in the sixth and seventh decades of life. Most of the patients have vaginal discharge or bleeding as the only presenting complaint and less than 5% of women diagnosed with endometrial cancer are asymptomatic. Patients with diabetes, hypertension, obesity and exogenous use of oestrogen have an increased risk of developing endometrial hyperplasia and adenocarcinoma. In our study endometrial carcinoma, endometrioid and villoglandular type were seen in 8 cases (5.3%), the commonest presentation of which was postmenopausal bleeding. All the 8 cases were in the perimenopausal and postmenopausal age group.

CONCLUSION

Endometrial pathology varies according to the age of the patient. Endometrial sampling by dilatation and curettage is the gold standard investigation in the evaluation of AUB. Though there are chances for interobserver variability, histopathological examination of the endometrial samples in various forms of Abnormal Uterine Bleeding reveals various endometrial patterns and helps to diagnose pathologic conditions like hyperplasia and endometrial carcinoma and facilitates early and appropriate treatment of the same. Therefore, histopathological examination of endometrium is especially indicated in women over 35 years to rule out pre-neoplastic and malignant conditions.

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