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Original Research Article

Endometrial patterns in abnormal uterine bleeding: a retrospective study

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is a common reason for women of all ages to consult their gynecologist and is one of the most common debilitating menstrual problems ending up in hysterectomy in developing countries. The aim of the present study was to determine the clinical spectrum and frequency of pathologies in endometrial biopsy of patients with AUB in our population. We also tried to observe the incidence of various pathologies in different age groups presenting with abnormal uterine bleeding.
Methods: The study was conducted in SRM Medical College Hospital and Research Centre, Tamil Nadu over a period of eight months. This was a retrospective study done on 217 patients presenting with abnormal uterine bleeding who underwent endometrial sampling in our hospital. The pattern of endometrial changes were studied and classified.
Results: Age of the patients in our study ranged from 25 years to 68 years with maximum in the age group of 41-50 years. The commonest clinical feature was menorrhagia followed by metrorrhagia. Evaluation of the endometrium revealed various histopathological patterns like proliferative endometrium, secretory endometrium, disordered proliferative endometrium, pill endometrium, shedding endometrium, simple hyperplasia, complex hyperplasia, atrophic endometrium, endometrial polyp, carcinoma endometrium etc.The incidence of malignancy was 1.84%.
Conclusions: Histopathological examination of the endometrium showed a wide spectrum of pathological changes ranging from normal endometrium to malignancy thus emphasizing the importance of endometrial sampling as an important diagnostic tool in the management of abnormal uterine bleeding. Accurate analysis of endometrial samplings is the key to effective therapy and optimal outcome.

Keywords: Abnormal uterine bleeding, Dilatation and curettage, Endometrium, Histopathology

INTRODUCTION

Menstruation is a very complex process involving oestrogen and progesterone and their receptors, endometrial vasculature, endometrial vasoactive substances, processes of tissue break down and remodelling and endometrial repair and regeneration. Abnormal Uterine Bleeding (AUB) is defined as any bleeding that does not correspond with the frequency, duration or amount of blood flow of a normal menstrual cycle and could be a sign of simple hormonal imbalance or a serious underlying condition necessitating aggressive treatment including a major surgical procedure.

It affects 10-30% of reproductive aged women and upto 50% of perimenopausal women.[1] Pattern and causes of abnormal uterine bleeding differs in different age group and reproductive status of women. Abnormal uterine

bleeding is a common reason for women of all ages to consult their gynaecologist and is one of the most common debilitating menstrual problems that has remained one of the most frequent indications for hysterectomy in developing countries.[2] It includes both organic and inorganic causes. The most common presentations are menorrhagia, polymenorrhoea, metrorrhagia and intermenstrual bleeding.

Since endometrium is the best accessible tissue for histopathological evaluation of uterine bleeding, several methods are used for endometrial sampling among which Dilatation and Curettage is used as standard practice in our set up. The aim of the present study was to determine the clinical spectrum and frequency of pathologies in endometrial biopsy of patients with AUB in our population. We also tried to observe the incidence of various pathologies in different age groups presenting with abnormal uterine bleeding.

METHODS

This was a retrospective study carried out in the Department of Obstetrics and Gynecology, SRM Medical College Hospital and Research Centre, Kattankulathur, Tamil Nadu from November 2015 to June 2016 for a period of 8 months. All women in the age group of 19 years and above who had presented with abnormal uterine bleeding and had undergone endometrial biopsy or curettage were included in the study. Women with pregnancy complications, thyroid disorders and coagulation disorders were excluded from the study.

217 women with abnormal uterine bleeding who had undergone endometrial curettage or biopsy who satisfied the inclusion criteria were selected. Data on the age, presenting clinical feature, procedure done and the histopathological report were retrieved using records from gynecology OPD, gynecology ward, operation notes, patient case sheets and pathology reports. Age, pattern of bleeding, duration of abnormal uterine bleeding and observed histopathological spectrums were recorded and classified.

Various endometrial patterns were classified as follows: Proliferative, Secretory, Atrophic, Unsatisfactory, Chronic Endometritis, Polyp, Hyperplasia and Carcinoma. Endometrial Hyperplasia was classified according to World Health Organization (WHO), originally proposed by Kurman and Norris, into simple and complex on the basis of architecture and each was further subdivided into typical and atypical, based on cytology. Data was collected and analyzed. Analysis was done in the form of percentage and represented as tables and figures where necessary.

RESULTS

A total of 217 patients were included in the study. The patients were categorized into five groups based on their age. Age of the patients in our study ranged from 25 years to 68 years with a mean of 47 years. Maximum patients with abnormal uterine bleeding presented in the age group of 41-50 years and the predominant pattern was proliferative changes which were followed by disordered proliferative changes. Many participants presented with menorrhagia which was the most common clinical feature followed by metrorrhagia. The presenting clinical patterns of these patients are summarized in table (Table 1).

Table 1: Pattern of bleeding in abnormal uterine bleeding.

Pattern of bleeding	30 years or less	31-40 years	41-50 years	51-60 years	60 years or more	Total
Menorrhagia	5	33	55	2	-	95 (43.78%)
Metrorrhagia	2	15	23	-	-	40 (18.43%)
Polymenorrhea	1	4	4	-	-	9 (4.15%)
Polymenorrhagia	2	9	17	-	-	28 (12.9%)
Continuous bleeding	3	6	10	-	-	19 (8.75%)
Postmenopausal	-	-	6	12	8	26 (11.98%)
Total	13	67	115	14	8	217 (100%)

Evaluation of the endometrium revealed various histopathological patterns like proliferative endometrium, secretory endometrium, disordered proliferative endometrium, pill endometrium, shedding endometrium, simple hyperplasia, complex hyperplasia, atrophic endometrium, endometrial polyp, carcinoma endometrium etc. Endometrial pathologies were observed in 48 patients whereas 162 patients had physiological patterns. In 7 cases, the endometrial curettings were scanty and inadequate for any diagnostic opinion. Among the physiological patterns proliferative changes were most common followed by disordered proliferative changes.

Among the pathological patterns, simple hyperplasia was most common. Hyperplasia was noted in 36 patients out of which 32 were simple hyperplasia and 4 were complex hyperplasia. 1 patient had atypical changes. There were 4

cases of endometrial carcinoma and 5 cases of endometrial polyp. All cases of endometrial carcinoma were adenocarcinoma, out of which 3 patients had risk factors like obesity and diabetes mellitus.

Table 2: Endometrial pattern in abnormal uterine bleeding.

Endometrial patterns	Age					
	30 years or less	31-40 years	41-50 years	51-60 years	60 years or more	Total
Proliferative	3 (4.76%)	11 (17.46%)	46 (73.01%)	2 (3.17%)	1 (1.59%)	63 (29.03%)
Secretory	2 (7.41%)	12 (44.44%)	13 (48.15%)	-	-	27 (12.44%)
Disordered proliferative	4 (8.33%)	17 (35.42%)	23 (47.92%)	4 (8.33%)	-	48 (22.12%)
Pill endometrium	-	3 (50%)	3 (50%)	-	-	6 (2.76%)
Shedding	2 (14.29%)	5 (35.71%)	7 (50%)	-	-	14 (6.45%)
Simple hyperplasia	-	14 (43.75%)	15 (46.88%)	3 (9.38%)	-	32 (14.75%)
Complex hyperplasia without atypia	-	-	2 (66.67%)	-	1 (33.33%)	3 (1.38%)
Complex hyperplasia with atypia	-	-	1 (100%)	-	-	1 (0.46%)
Chronic endometritis	-	3 (100%)		-	-	3 (1.38%)
Atrophic	--		1 (25%)	2 (50%)	1 (25%)	4 (1.84%)
Endometrial polyp	2 (40%)	1 (20%)	2 (40%)	-	-	5 (2.3%)
Carcinoma endometrium	-	-	1 (25%)	-	3 (75%)	4 (1.84%)
Scanty	-	1 (14.29%)	1 (14.29%)	3 (42.86%)	2 (28.57%)	7 (3.23%)
Total	13 (5.99%)	67 (30.88%)	115 (53%)	14 (6.45%)	8 (3.69%)	217

There were 7 samples of scanty endometrium mainly in the postmenopausal age group. The various histopathological patterns are shown in table (Table 2).

DISCUSSION

AUB is the overarching term used to describe any departure from normal menstruation or from a normal menstrual cycle pattern.[3]

Abnormal uterine bleeding is one of the most frequently encountered conditions in gynecology world over. AUB is of concern as it can have serious medical and social consequences by causing anemia, disruption of women's daily activities and sexual life.

In normal cycles, the menstrual shedding is followed by endometrial proliferation under estrogenic stimulation. During this phase the endometrial glands grow and become tortuous.

The secretory activity in the second half of the menstrual cycle is characterised by endothelial proliferation, thickening of the wall, and coiling of the spiral arterioles.

Our study received maximum number of cases from the perimenopausal age group which is comparable to the studies carried out by Vaidya et al, Agrawal et al and Salvi et al.[4-6] But literature have mentioned studies where majority of cases were from the reproductive age group.[7,8] Age was directly associated with the type of lesion,as more progressive lesions were observed in the perimenopausal and postmenopausal age group. The commonest age group presenting with excessive bleeding in our study was 41-50 years. A similar incidence was reported by Doraiswami et al, Yusuf et al and Muzaffar et al.[9-11] This may be due to the fact that these women are in their climacteric phase when they tend to become anovulatory due to decline in the number of ovarian follicles and the estradiol level.

A significant number of cases in this study showed normal physiologic patterns like proliferative, secretory and atrophic endometrium. Bleeding in the proliferative phase may be due to anovulatory cycles and bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding. We found that the most common histopathological finding was prolierative endometrium in 63 cases (29%).Similar findings were also noted by Khare et al (26.8%), Saera et al (34.6%), Anuradha Salvi et al (37.2%) and Agarwal et al.[5-8]

A significant number of cases showed disordered proliferative endometrium in present study – 48 cases (22.12%). This was slightly more when compared with the findings of Bashir H et al and Vaidya et al which showed 12.17% and 13.4% respectively.[12,4] Disordered proliferative endometrium was commonly seen in perimenopausal age group similar to study of Doraiswami et al.[9] It denotes an endometrial appearance that is hyperplastic but without an increase in endometial volume.There is no significant increase in the overall

ratio of glands to stroma.[13] It resembles a simple hyperplasia, but the process is focal rather than diffuse.

Irregular shedding of the endometrium is apparently due to slow degeneration of the corpus luteum with prolonged exposure to progesterone. Clinically, it manifests as cyclic prolonged menstruation. In present study, the total number of cases with shedding endometrium were 14 (6.45%). This correlated with the findings of Baral R and Pudasaini S.[13]

In present study, the most common pathological cause for abnormal bleeding was endometrial hyperplasia (16.5%). This is in consistent with the studies of Mirza et al, Anwer M et al in Karachi and Mogal N.[14-16] Endometrial hyperplasia is a precursor of malignancy. It is a common diagnosis in perimenopausal women often causing symptoms of irregular or prolonged bleeding. This is due to increased oestrogen levels. The overgrowth affects not only glands and stroma but there is also abnormal vascularisation.[12] The incidence of endometrial hyperplasia in our study was similar with the findings of Muzzafar et al which showed 18.3%.[11] Majority of the cases of hyperplasia were simple hyperplasia and women were in the perimenopausal age group.Many studies have showed a similar increased incidence in perimenopausal age group.[9,11,17,18]

Malignancy was seen in 4 (1.8%) cases in our study. Studies by Muzzaffar M et al and Mirza T et al showed the incidence of malignancy to be 0.4% and 5% respectively.[11,14] Most of the studies found majority of cases of malignancy in the postmenopausal age group.[19,20] The main histopathological variant in present study was adenocarcinoma.

Endometrial polyp was seen in 5 cases in our series (2.3%). Studies by Baral R and Zeeba et al showed an incidence of 1.3% and 1.7% respectively.[13,18] Polyp was observed mainly in the perimenopausal and reproductive age group than the postmenopausal age group. This was in contrast with the study of Mariam Abid et al who showed an increased incidence of endometrial polyps in perimenopausal and post menopausal age group.[2] None of the polyps in our study showed atypical changes.

We observed 4 cases of atrophic endometrium and all patients were in the postmenopausal age group. Anovulation in these women manifest as atrophic or inactive endometrium. Mechanism of bleeding due to atrophic endometrium in old age is stated in different studies as sclerotic degeneration of vessel wall or local abnormal haemostatic mechanism. This accounted for 1.8% of total cases. This was similar to the findings of Zeeba et al.[18] Authors in discordance with this had reported 2.4% and 7 %.[9,14]

There were 3 (1.4%) cases of chronic endometritis which was seen in the age group of 31-40 years. This was much low when compared to many other studies.[17,21-23] The diagnosis of chronic endometritis is made on the basis of the presence of plasma cells.[20]

CONCLUSION

Abnormal uterine bleeding is a common diagnosis and the commonest presentation is menorrhagia. Histopathological examination of the endometrium showed a wide spectrum of pathological changes ranging from normal endometrium to malignancy thus necessitating endometrial sampling as an important diagnostic tool in the management of abnormal uterine bleeding. Accurate analysis of endometrial sampling is the key to effective therapy and optimal outcome. This would help in individualizing the management of abnormal uterine bleeding with a view to conserve the uterus.

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