RESEARCH PAPER | Medical science | Volume : 6 | Issue : 6 | June 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

Histophological Patterns of Endometrial Biopsy in Abnormal Uterine Bleeding

KEYWORDS: Abnormal uterine bleeding(AUB), Endometrium

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ABSTRACT *Abnormal uterine bleeding is a common presenting complain in gyanecology out patient department. Histopathological evaluation of the endometrial samples play an important role in the diagnosis of abnormal uterine bleeding. The present study was carried out to determine the histopathological pattern of the endometrium in women of various age groups presenting with abnormal uterine bleeding. A total of 250 endometrial biopsies and curettings were analyzed. The age of the patients ranged from 18 to 60 years. Normal cyclical endometrium was seen in 115 (46%) cases, followed by 65 (26%) cases of disordered proliferative endometrium and 60 (24%) cases of hyperplasia. Malignancy was seen in 10 (4%) cases. Hyperplasia and malignancy were more common in the perimenopausal and postmenopausal age groups Endometrial evaluation is specially recommended in women of perimenopausal and postmenopausal age groups presenting with AUB, to rule out a possibility of any preneoplastic condition or malignancy.*

Introduction

Abnormal uterine bleeding (AUB) is one of the commonest presenting symptoms in gynecology out-patient department. It is defined as bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause. It includes both organic and non organic causes of uterine bleeding. It can be caused by a variety of systemic diseases such as endocrine disorders or drugs, pregnancy, anovulation, fibroids, polyps, adenomyosis and endometrial causes like endometritis, hyperplasia,disordered proliferative endometrium,cyclical endometrium,polyp and malignancy.[1] Endometrial biopsy or curettage is a safe and effective diagnostic step in evaluation of abnormal uterine bleeding after ruling out medical causes.[2] This study was done to evaluate the endometrial causes of AUB and to determine the specific pathology in different age groups.

Material and Methods

This study was conducted at the Department of Pathology,Assam Medical College and Hospital, Dibrugarh Assam. A total of 250 patients presenting with abnormal uterine bleeding over a period of one year were included in the study. The histopathological findings of AUB were categorized into functional and organic causes. The functional causes of AUB included in this study were normal cyclical endometrium (proliferative and secretory), atrophic endometrium and disordered proliferative endometrium . Organic causes of AUB in this study included chronic endometritis, hyperplasia, polyp and endometrial carcinoma. Patients were also categorized into the following age groups: reproductive (18-40 years), perimenopausal (41-50 years) and postmenopausal (> 50 years). Patients with bleeding due to vaginal and cervical pathology, leiomyoma, pregnancy related complications such as abortions, gestational trophoblastic diseases or ectopic pregnancy were excluded from the study. Endometrial specimens were obtained by either endometrial biopsy or curetting and fixed in 10% formalin. The specimens were processed routinely and stained with Haematoxylin and Eosin (H&E) stain and examined.

RESULTS

A total of 250 endometrial biopsies and curettings from patients with abnormal uterine bleeding (AUB) were analyzed. The cause of AUB could be determined in only 230 out of 250 endometrial biopsies as 20 biopsy specimens were inadequate for evaluation. Out of the 230 cases, 170 (73.9%) were due to functional causes as no organic pathology was found, while the remaining 60 cases (26.1%) showed definite endometrial pathology (Table-1).

Table-1: Distribution of cases of AUB according to cause

Causes of AUB	Total	Percentage (%)
Functional Causes	170	73.9
Organic Lesions	60	26.1
Total	230	100

Out of the 170 functional cases of AUB, secretory endometrium and proliferative endometrium were the most common patterns and were seen in 66(38.8%) and 40 (23.6%) cases respectively. This was followed by 49 (28.8%) cases of disordered proliferative endometrium and atrophic endometrium 15(8.8%). Amongst the 60 organic lesions causing AUB, endometrial hyperplasia was the most common and seen in 28(46.7%) cases. Hyperplasia without atypia was the most common type of hyperplasia and was observed in 22 (78.6%) patients. The other organic causes of AUB observed in this study included 12 (20.0%) cases of endometrial polyp, 12 (20.0%) cases of chronic endometritis and 8 (13.3%) cases of malignancy.

In our study the age of the patients presenting with AUB ranged from 18 to 60 years . A total of 115 (50.0%) patients presenting with AUB were seen in the perimenopausal age group, followed by 80(34.8%) patients in the reproductive age group and 35(15.2%) in the postmenopausal age group (Table 2).

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Table 2 : Age group of patients presenting with AUB

Age group (Years)	Total	Percentage (%)
18 – 40 (Reproductive)	80	34.8
41 – 50 (Perimenopausal)	115	50.0
≥ 51 (Postmenopausal)	35	15.2
Total	230	100

Histopathological examination of the endometrium showed various histological patterns in different age groups (Table 3). Predominant pattern seen in all the three age groups was of normal cyclical endometrium (proliferative and secretory phases) and was seen in 106 (46.1%) cases.

Disordered proliferative endometrium and hyperplasia were the next common histological patterns which were seen in 49(21.3%) and 28 (12.2%) cases, respectively. Both these patterns were commonly seen in the perimenopausal age group. Out of the 28 cases of hyperplasia, there were 22 (9.6%) cases of hyperplasia without atypia and 6(2.6%) cases of hyperplasia with atypia. Both endometrial polyp and chronic endometritis were seen in 12(5.2%) cases each and was predominant in the perimenopausal age group. Atrophic endometrium comprised of 15 (6.5%) cases which was seen mostly in postmenopausal age groups. Malignancy was a cause of AUB in only 8(3.5%) cases, 5 (2.2%) of which were diagnosed after menopause

Table-3: Histopathological patterns according to different age group

Histopathological patterns	Age group (Years)			Total	Percentage (%)
	18-40	41-50	≥ 51		
Proliferative	15	22	3	40	17.4
Secretary	31	28	7	66	28.7
Atrophic	0	03	12	15	6.5
Disordered proliferative	20	24	5	49	21.3
Hyperplasia without atypia	7	12	3	22	9.6
Hyperplasia with atypia	0	4	2	06	2.6
Endometrial polyp	2	9	1	12	5.2
Chronic Endometritis	4	7	1	12	5.2
Endometrial Carcinoma	0	3	5	8	3.5
Total				230	100

DISCUSSION:

The term abnormal uterine bleeding has been used to describe any bleeding not fulfilling the criteria of normal menstrual bleeding.The causes include both functional and organic lesions like fibroids, polyps, huperplasia, endometrial carcinoma and pregnancy complications. When an organic cause of AUB cannot be found, then by exclusion, a diagnosis of dysfunctional uterine bleeding (DUB) is assumed. Our study included 250 cases for abnormal uterine bleeding over a period of one year. Out of these 20 samples were inadequate for reporting due to presence of scant amount of fragmented glands and stromal tissue and large areas of haemorrhage.How ever very few literature is available regarding the criteria for adequacy of endometrial samples. In about 25% of the patients, the abnormal uterine bleeding is the result of a well defined organic abnormality .In our study functional causes of abnormal uterine bleeding was observed in 73.9% of cases and organic lesions in 26.1% cases which is almost consistent with the study by Ara et al which showed organic cases as 21.73% and functional cases as 78.27%.[3]

Abnormal and excessive endometrial bleeding occurs in women of all age group.A gradual increase in patients with respect to age was observed in our study .The most common age group presenting with AUB in our study was 41-50 years. Our study significantly revealed that the occurrence of menstrual disorders increases with advancing age. The commonest age group presenting with excessive bleeding in our study was 41–50 years. A similar incidence was reported by Yusuf et al.[4] and Muzaffar et al.[5] in their study of endometrium. An increased number of cases in this age group could be due to the fact that as menopause approaches, decreased number of ovarian follicles and their increased resistance to gonadotrophic stimulation, results in low level of oestrogen which cannot keep the normal endometrium growing.

Histopathological examination of the endometrial biopsies and curettings revealed various patterns ranging from physiological to pathological lesions of the endometrium. In this study, proliferative and secretory endometriums were the two most common histopathological patterns which were seen in all the three age groups. Similar observation was made in a study by S Vaidya et al [6]and Abdullah et al[7]. Together, both these patterns were seen in 106 (46.1%) cases in our study. Data from similar studies vary from 28.36% to 53.91%.12,16,18,20-22. Disordered proliferative pattern was seen in significant number of cases, 49(21.3%) cases and this was consistent with other studies by Gredmark T et al[8]. and S Vaidya et al. Organic cause of AUB was determined in 60 (26.1%) cases in this study which is consistent with data published by S Vaidya et al. (19.0%) ,Ara et al. (21.73%) and Moghal et al [9](22.5%).Endometrial hyperplasia was the most common organic cause of AUB which was seen in 28 (12.2%) cases. Similar observations was made by S Vaidya et al.(10.9%) and Abdullah et al.(9.1%) while the incidence was lower(5.8%) in a study by Jairajpuri et al[10]. and higher in studies by Baral et al[11]. (18.3%) and Muzaffar et al (24.7%). In our study hyperplasia was more commonly seen in the perimenopausal age group (57.1%) and was predominantly hyperplasia without atypia (75.0%). This was consistent with other studies by Abdullah et al and Baral et al.

Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma. The present study showed the detection of endometrial cancer increases with age. In this study, endometrial carcinoma was seen in 10 (2.48%) cases which was similar to that reported by Sarwar et al (2%) [12]. Lower incidences of 0.4%28 and 0.47%18 have also been reported in the literature. Likewise, higher incidences of 3.33% and 4.4% have been reported by Mencalgia et al [13] and Doraiswami et al[14] respectively.

Atrophic endometrium comprised of 15(6.5%) cases and was seen predominantly in the 51–60 years age group. This data correlated with the study by S Doraiswami et al. The exact cause of bleeding from the atrophic endometrium is not known. It is postulated to be due to anatomic vascular variations or local abnormal hemostatic mechanisms.

The incidence of benign endometrial polyps in this study was high in 41–50 years age group. Lower incidence of the endometrial polyps in the younger age group may be attributed to a possible spontaneous regression mechanism,

Volume : 6 | Issue : 6 | June 2016 | ISSN - 2249-555X | IF : 3.919 | IC Value : 74.50

which is characteristic of the cycling endometrium in reproductive age group.

In our study chronic endometritis was diagnosed in 12 patients and this was consistent with the study by S Vaidya et al. One case showed epithelioid granuloma suggestive of tuberculosis. Patients with chronic endometritis can present with AUB, pelvic pain and infertility and this condition needs to be diagnosed because with specific treatment, endometrium can start functioning normally.

Conclusion:

Abnormal uterine bleeding is an age- related pathology. Histopathological examination of the endometrial biopsy and curettage is an important diagnostic tool in evaluation of AUB especially in perimenopausal women to rule out possibility of pre-neoplastic condition or malignancy and thus could help the physician to plan therapy for successful management of AUB.

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