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Research Paper

Histopathological Study of Endometrium in Abnormal Uterine Bleeding in Different Age Groups

Pathology

KEYWORDS : - Abnormal uterine bleeding, dysfunctional uterine bleeding, endometrium, histopathology

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ABSTRACT

Objective

1. To evaluate patterns of endometrial histological findings in women with abnormal uterine bleeding.

2. To find the histopathological pattern of endometrium in abnormal uterine bleeding in different age groups.

Methods

The slides of 564 patients with history of abnormal uterine bleeding 2006 to 2012 were studied. Our study includes reproductive, perimenopausal and menopausal age groups. The patients were divided into three groups: Group I adolescents/reproductive (18-40) years, Group II perimenopausal (41- 45) years and Group III postmenopausal (> 45 years).

Results

Out of 564 endometrial samples major bulk 300 (53.2%) of cases revealed no organic pathology and a smaller group of cases 256 (45.4%) showed definitive endometrial pathology. Maximum numbers of cases were observed in 18-40 year age group. The most common organic lesion in 18-40 year age group was pregnancy related lesions, 41-45 year age group and >45 year age group it was endometrial hyperplasia

Conclusion

Histological pattern of the endometrium in abnormal uterine bleeding in different age groups should be studied as it helps in the management of the cases and especially in over 40 year age group to rule out malignancy.

1. Introduction

Abnormal uterine bleeding(AUB)may be defined as bleeding pattern that differs in frequency, duration and amount from a pattern observed during a normal menstrual cycle or after menopause.It interferes significantly with the quality of life in otherwise healthy women[1, 2]. It is a common problem having a long list of causes in different age groups hence information regarding age and menstrual history with clinical examination are a prerequisite to evaluate endometrial samples [1,3,4]. AUB can present in many patterns and can be evaluated by histopathology which remains the diagnostic standard for the clinical diagnosis of endometrial pathology. AUB may be the symptom of endometrial carcinoma in 8 – 50% of cases [1,5,6,7].Causes of AUB may be structural or functional [1,8]. Common structural causes include polyps, fibroids, complications of pregnancy endometrial hyperplasia, endometrial carcinoma[1,3].The large group of functional disorders called as dysfunctional uterine bleeding (DUB) can only be diagnosed after exclusion of structural, iatrogenic, medications, psychological and systemic disorders[1,9-11].

2. Objectives

1. To evaluate patterns of endometrial histological findings in women with abnormal uterine bleeding.
2. To find the histopathological pattern of endometrium in abnormal uterine bleeding in different age groups.

3. Materials and Methods

This is a retrospective study at department of pathology, Dr. B. R. Ambedkar medical college, Bangalore. The endometrial samplings of 564 patients with diagnosis of abnormal uterine bleeding were search between 2006 to 2012. The formalin fixed samples were routinely processed. The paraffin block sections were cut at 4-5µ. Then, the sections were stained by routine haemotoxylin and eosin (H&E) stains and additional special stains were used if required. The patients were divided into three groups viz, Group I (adolescents/reproductive): 18-40 years, Group II (perimenopausal): 41- 45 years and Group III (postmenopausal): >45 years).

Study criteria were divided as follows; 1) normal physiological changes: proliferative phase, secretory phase and anovulatory changes 2) abnormal physiological changes: pill endometrium, irregular shedding, disordered proliferative endometrium and decidualization3) inflammatory conditions; chronic endometritis4) pregnancy related conditions: products of conception, molar pregnancy - partial and complete 5) benign condition: endometrial polyp 6)preneoplastic condition: endometrial hyperplasia - simple and complex hyperplasia with or without atypia7) malignant conditions and 8) unsatisfactory for evaluation.

4. Results

During the study period, a total of 564 endometrial samples presenting with abnormal uterine bleeding were obtained.Three hundred(53.2%) cases revealed no organic pathology but 256 (45.4%) cases showed definitive endometrial pathology.The unsatisfactory samples were8(1.4%) cases. (see Table 1). The age of the patient ranged from 18-83 years .**Maximum numbers of cases were observed in 18-40 year age group.** (Table 2) The most common organic lesion in 18-40 year age group was pregnancy related lesions, in 40-45 year age group and >45 age group it was endometrial hyperplasia (Table 2 &3).

Among 564 cases, the functional lesions of AUBwere found as follows: secretory phase 132 (23.4 %) cases, proliferative phase 156 (27.7 %) cases, disordered Proliferation 1 (0.2%) case, luteal phase insufficiency (0.2%) case, lytic phase 9 (1.6 %) cases, irregular shedding (0.2%) case. (Table 3) For organic lesions, pregnancy related causes was the most commonly seen accounting for 136 (24.1%) cases followed by endometrial hyperplasia 98 (17.4%) cases, Carcinomas 6 (1.1%) cases, Chronic endometritis 4 (0.7%) cases, Tuberculousendometritis 2 (0.4%) cases, Endometrial polyps 2 (0.4%) cases, Atrophic endometrium 6 (1.1%) cases, and leiomyomas were 2 (0.4%) cases (Table 4) (figure 1- 5).

Table 1. Main outcome of endometrial samples presenting with AUB

Type of lesion	No. (%) of cases
Functional lesions (dysfunctional uterine bleeding)	300 (53.2%)
Organic lesions	256 (45.4%)
Unsatisfactory	8 (1.4%)
Total	564 (100%)

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Table 2.Functional lesions of AUB in different age groups

Causes	18-40 yrs	41-45 yrs	>45 yrs	Total
Secretory phase	112	13	7	132
Proliferative phase	94	31	31	156
Disordered Proliferation	-	-	1	1
Luteal phase insufficiency	1	-	-	1
Lytic phase	8	-	1	9
Irregular shedding	-	1	-	1
Total	215	45	40	300

Table 3. Organic lesions of AUB in different age groups

Causes	18-40 yrs	41-45 yrs	>45 yrs	Total
Endometrial hyperplasia	41	37	20	98
Chronic endometritis	1	2	1	4
Tuberculousendometritis	2	-	-	2
Endometrial polyps	2	-	-	2
Pregnancy related	135	1	-	136
Atrophic endometrium	-	-	6	6
Leiomyomas	2	-	-	2
Carcinoma	1	2	3	6
Total	184	42	30	256

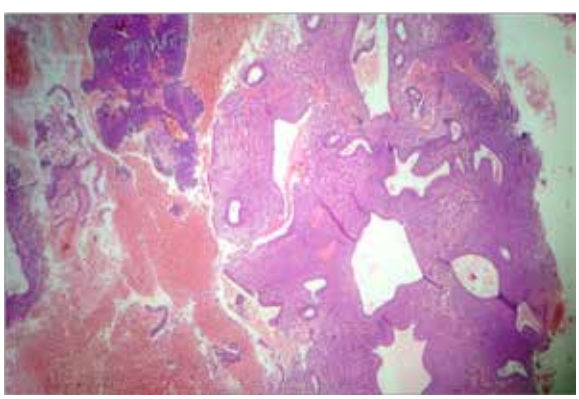

Figure 1.Endometrial biopsy showed disordered proliferative endometrium (H&E x10).

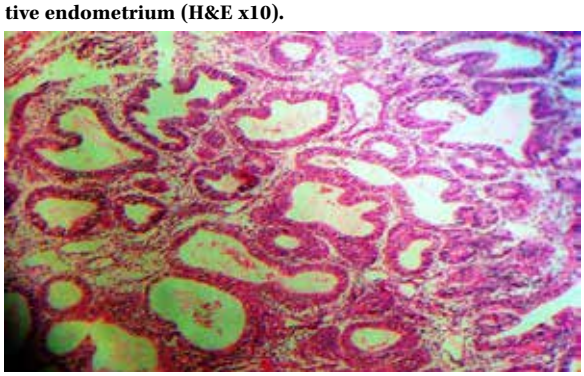

Figure 2.Endometrial biopsy showed complex hyperplasia endometrium without atypia(H&E x10).

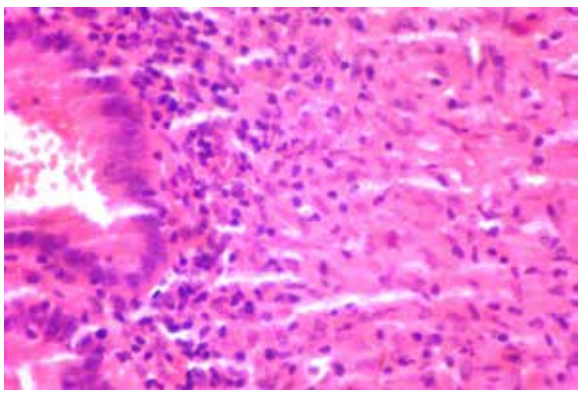

Figure 3. Endometrial biopsy showed tuberculous endometritis (H&E x40)

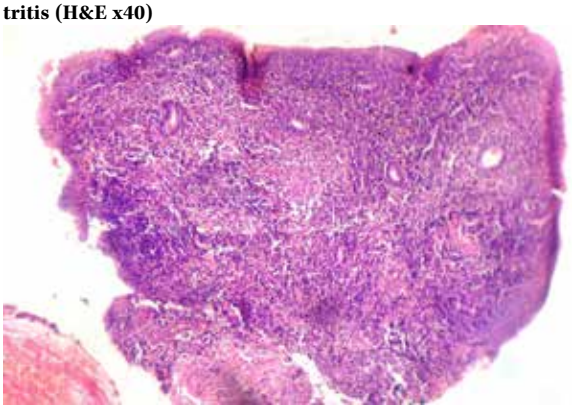

Figure 4. Endometrial biopsy showed atrophic endometrium (H&E x10).

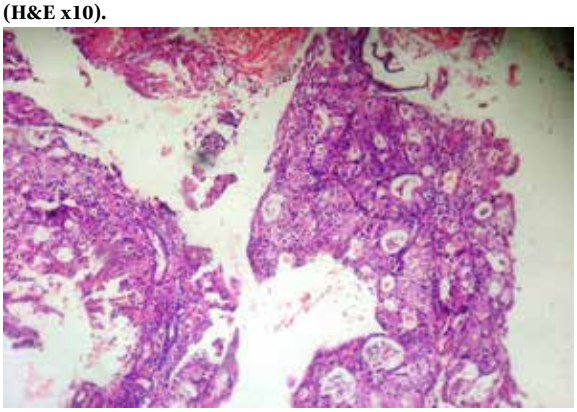

Figure 5. Endometrial biopsy showed endometrial adenocarcinoma (H&E x10).

5. Discussion

AUB without structural pathology is more common in adolescent and perimenopausal women although it can occur in reproductive women of all ages.[7,11] In our study most common organic cause of bleeding was due to pregnancy related causes (24.1%). All the cases were in 18- 40 yrs age group except for one case which was in 41-45 yrs age group. The next common cause among all age groups and especially 41-45yrs and >45 yrs age group was endometrial hyperplasias (17.4%). This is consistent with other studies carried out by Mirza et al,Mogal N (11.1%) and by Anwer et al. (62.8%) [1,12,13].This finding supports the hyperestrogenic significance as an important stimulus to proliferation. In contrast Shagufta et al. showed endometrial hyperplasia only in 4.9 %cases.[1,14] The reason probably being that they considered only the reproductive age group whereas our study includes reproductive age with largely perimenopausal and menopausal age groups. Therefore the effects of estrogen ex-

cess appear to be more marked in later ages. Asim et al. showed the frequency of endometrial hyperplasia (10%) to be less than endometrial carcinoma and benign lesions in postmenopausal females [1,15]. Frequency of endometrial hyperplasia (27%) in postmenopausal females was much higher than of endometrial carcinoma (6%) in a study byMirza et aland Sarfaraz et al.[1,16] So considering all age groups most common lesion presenting with abnormal uterine bleeding is Endometrial hyperplasia.

Malignancy was seen in 6 (1.1 %) cases in our series which was slightly higher than the results ofMuzzaffar et al (0.4%) but lower than Mirza et al(5%),Anwar et al (15.8%) and Bhatta et al(17.9%) [1,8,11,13]. Our study revealed organic causes especially malignancy increased with increasing age this is quite similar to Bhatta et al , Mirza et al , Asim et al and Dangalstudies, most probably consistent with unopposed estrogenic effects in later years.[1,7,11,13] Malignant neoplasm are relatively uncommon causes of postmenopausal bleeding with endometrial carcinoma being involved in 7 to17.7% patient.[7,11,17]

DUB is more common in early and late reproductive years and most of the cases submitted for abnormal uterine bleeding had no organic lesion and belonged to the functional grouping largely related to hormonal imbalance in reproductive age group.This problem constitutes a big bulk of curettage biopsies done for the alarming clinical indication in earlier ages. Similar results were obtained in other studies.[1,11]Anovlatory cycle causes changes in endometrium, which results in irregular bleeding in perimenopausal years. The bleeding pattern is unpredictable and irregular in Chronic anovulation ranging from short cycles with scanty bleeding to prolonged period with irregular heavy loss. Normal menstruation occurs due to withdrawal of both progesterone and oestradiol. If ovulation doesn't occur then the absence of progesterone results in an absence of secretory change in the endometrium, accompanied by abnormalities in the production of steroid receptors, prostaglandins and other locally active endometrial products. Persistent proliferative or hyperplastic endometrium occurs due to unopposed estrogen and estrogen withdrawal bleeding is characteristically painless and irregular.[11]

Functional lesions were more common in reproductive and perimenopausal age group. Endometrial hyperplasias and malignancy was frequently seen in perimenopausal and post menopausal age group. This indicates the importance of endometrial sampling to rule out preneoplasia and malignancy. Hence histopathological examination should be done generously in women presenting with AUB to rule out malignant pathology.

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