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Original Research Article

Study of Histopathological Pattern of Endometrium in Abnormal Uterine Bleeding – A Study of 150 Cases

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Abstract: Abnormal uterine bleeding (AUB) is one of the commonest presenting symptoms in gynaecology out-patient department. The term dysfunctional uterine bleeding is used to describe abnormal uterine bleeding for which no specific cause has been found. Evaluation of histopathological pattern of endometrium is essential for appropriate management of patient with abnormal uterine bleeding. Endometrial biopsy could be effectively used as the first diagnostic step in DUB. This study was done to evaluate histopathology of endometrium for identifying the endometrial causes of DUB. This is a prospective study, undertaken in the department of pathology. This study consisted of 150 cases of hysterectomy specimens and endometrial scrapings received in the department of Pathology, Bhaskar Medical College and Satya Diagnostic Centre, Hyderabad, Telangana State. Total duration of study was 2 years i.e from June 2014 to November 2016. 150 endometrial lesions diagnosed on histopathology were selected for the final analyses. The most common age group presenting with DUB was 40–49 years (49.3%). The commonest pattern in these patients was proliferative endometrium (29.3%),followed by secretory endometrium (14%) and simple cystic hyperplasia (9.3%). Other patterns identified were endometrial polyp, complex hyperplasia without atypia, endometrial carcinoma, pill endometrium ,complex hyperplasia with atypia , endometritis , atrophic endometrium and adenomatous hyperplasia. Endometrial causes of DUB and age pattern was statistically significant with P value <0.05. Histopathological examination of endometrium should be done generously in women presenting with abnormal uterine bleeding especially after the age of 40 years to rule out malignancy. It is useful for diagnosis, to assess therapeutic response and to know the pathological incidence of organic lesions in cases of dysfunctional uterine bleeding prior to surgery.

Keywords: Abnormal uterine bleeding, Endometrial hyperplasia, Endometrial carcinoma, Endometrium.

INTRODUCTION

Endometrium is a hormonally sensitive and responsive tissue which constantly undergoes changes during the active reproductive life. Women suffers from many gynaecological diseases. One among them is dysfunctional uterine bleeding, which has significant morbidity in that it interferes with their personal, family and social life. Abnormal uterine bleeding is one of the commonest conditions for which patients seek advice in the gynaecological outpatient department. The term dysfunctional uterine bleeding is used to describe abnormal uterine bleeding for which no specific cause has been found. 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.AUB can present in many patterns and can be evaluated by histopathology which remains the diagnostic standard for the clinical diagnosis of endometrial pathology. It is estimated that 9-30% of women of reproductive age suffer from abnormal uterine bleeding. The prevalence increases with age, peaking just prior to menopause. Because most cases are associated with anovulatory menstrual cycles, adolescent and perimenopausal women are particularly vulnerable. It is the diagnosis of exclusion made when there is no other recognizable medical cause. The endometrial biopsy is chosen to evaluate abnormal uterine bleeding because it has several advantages over other diagnostic methods.

AIM OF THE STUDY

To know the commonest age group and common pathology causing abnormal uterine bleeding by studying histopathological findings in endometrial tissue samples.

MATERIALS AND METHODS

This is a prospective study on histopathology of endometrium in patients presenting with Abnormal uterine bleeding, undertaken in the department of pathology of Bhaskar medical college and Satya diagnostic centre, Hyderabad, Telangana State. Total duration of study was 2 years i.e from June 2014 to November 2016. Material for the study consisted of endometrial tissue obtained by Dilatation and Curettage of patients presenting with Abnormal Uterine Bleeding, who were either attending OPD or admitted in Obstetrics and Gynaecology department of our hospital, which were sent for histopathological study to the department of Pathology.

Inclusion criteria

Endometrial tissue from patients of all age groups clinically diagnosed as AUB(in whom there is no organic pathology) like 1. Normal ovulatory AUB, 2.Anovulatory AUB like insufficient follicular development, 3. Ovulatory AUB like in Persistent corpus luteum.

Exclusion criteria

1.Patients presenting with AUB due to pregnancy related complications.2.Organic lesions involving the genital tract and organs like leiomyomas and adenomyosis, genital tract infections, systemic causes and other lesions. 3. Hysterectomy specimens. The endometrial tissue was fixed in 10% formalin and then entire tissue was taken for routine processing 0.5 micron mt thickness sections taken from paraffin blocks were stained with Haematoxylin and Eosin (H & E) and studied microscopically. Relevant clinical data was collected from the hospital and laboratory records. Microscopic examination was done by team of Pathologists and a second opinion was taken to reduce the observer bias.

RESULTS

The present study comprised a total of 150 cases of endometrial lesions as shown in the table 1. All the endometrial samples included for the study were obtained by dilatation and curettage (D&C) method and the age of the patients ranged from 21-78 years with a mean of 49.5 years. Highest incidence of DUB was found in 40-49 years of age group. The commonest complaint was menorrhagia in 73 patients (48.6%). The commonest pathology in these patients as shown in table-2 was proliferative endometrium (29.3%), followed by secretory endometrium ((14%) and simple cystic hyperplasia (9.3%). Other patterns identified were endometrial polyp(9.3%), complex hyperplasia without atypia(8%), endometrial carcinoma(6%), pill endometrium (5.3%) ,complex hyperplasia with atypia (4.7%),endometritis(4.7%), atrophic endometrium(4%) and adenomatous hyperplasia(2%). In women under 40 years of age proliferative endometrium was found in 44 cases (29.3%) patients and secretory endometrium in 21 cases (14%) patients. Endometrial polyp (9.3%), pill endometrium (5.3%) and endometritis (4.7%) were also common in the 4th decade.

Table 1: Age Wise Distribution of Cases

Age Group (Years)	Number of Cases	Percentage
20-29 Years	06	4%
30-39 Years	42	28%
40-49 Years	61	40.7%
50-59 Years	22	14.7%
60-69 Years	15	10%
70-79 Years	04	2.6%
Total	150	100%

Table 2: Histopathological Lesions of Endometrium

Endometrium Pattern	Number Of Cases	Percentage
Proliferative Endometrium	44	29.3%
Secretory Endometrium	21	14%
Pill Endometrium	08	5.3%
Atrophic Endometrium	06	4%
Endometritis	07	4.7%
Endometrial Polyp	14	9.3%
Simple Cystic Hyperplasia	19	12.7%
Adenomatous Hyperplasia	03	2%
Complex Hyperplasia Without Atypia	12	8%
Complex Hyperplasia With Atypia	07	4.7%
Endometrial Carcinoma	09	6%
Total	150	100%

Incidence of endometrial hyperplasia and endometrial carcinoma was highest after the 4th decade of life suggesting that the incidence of endometrial hyperplasia and endometrial carcinoma increases with age. Atrophic endometrium was mostly seen in elderly patients with the most common finding is postmenopausal bleeding next to endometrial carcinoma.

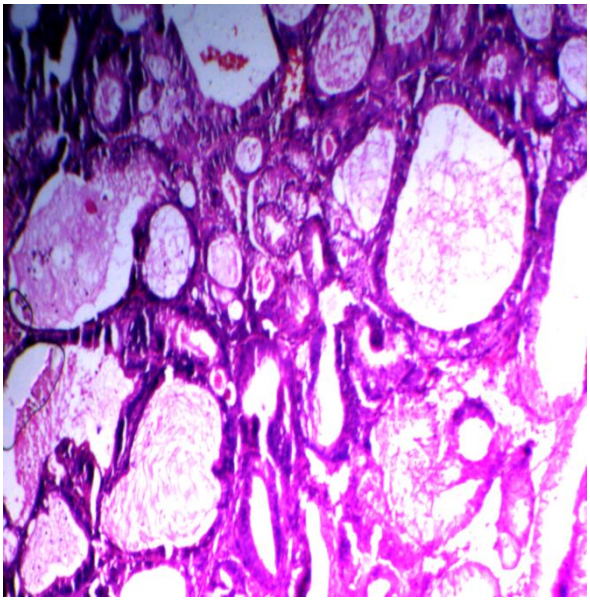

Fig-1: H & E 100 X: Cystic glandular Endometrial Hyperplasia

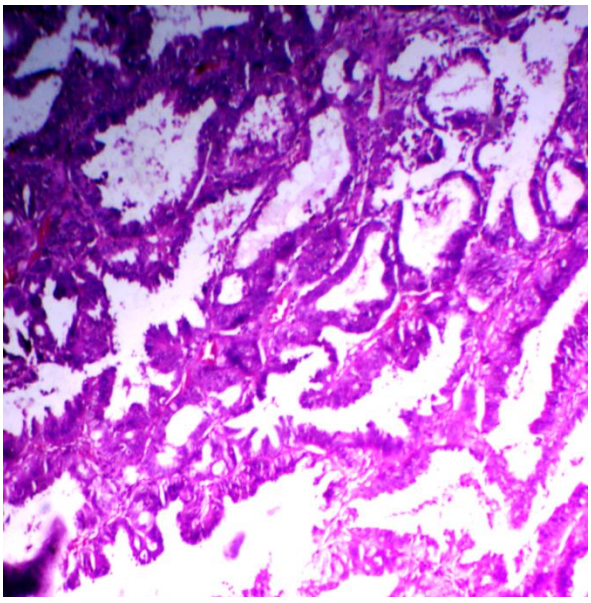

Fig-2: H & E 100 X: Complex Endometrial Hyperplasia Without Atypia

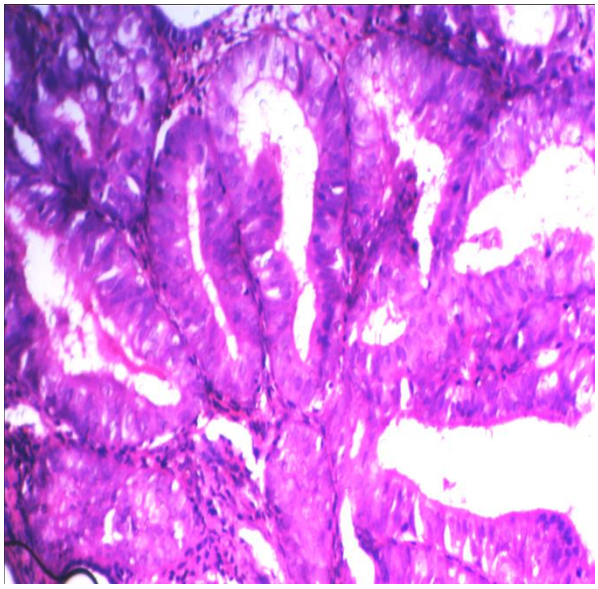

Fig-3: H & E 400 X: Complex Endometrial Hyperplasia With Atypia

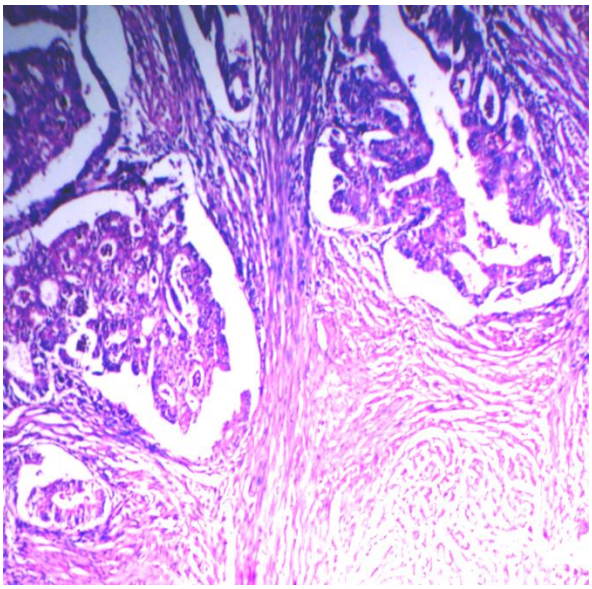

Fig-4: H & E 100 X: Endometrioid Adenocarcinoma With Tumor Cells In Glandular Pattern & Desmoplastic Stroma

DISCUSSION

Abnormal uterine bleeding is defined as any bleeding from uterus other than menstrual bleeding. Since long it has been classified as AUB secondary to organic pathology or dysfunctional uterine bleeding [1]. Abnormal uterine bleeding without structural pathology occurs in reproductive women of all ages but is more common in adolescent and perimenopausal women [2]. In perimenopausal years anovulatory cycle is most frequent which in turn causes changes in endometrium, which results in irregular bleeding [3]. Chronic anovulation is associated with an irregular and unpredictable pattern of bleeding ranging from short cycles with scanty bleeding to prolonged period with irregular heavy loss. Normal bleeding occurs in response 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. Unopposed estrogen gives rise to persistent proliferative or hyperplastic endometrium and estrogen withdrawal bleeding is characteristically painless and irregular [4].

In the present study, a total of 150 endometrial biopsies of woman ranging from 21-78 years received in the department of Bhaskar medical college and Sathya diagnostic centre, Hyderabad, Telangana state were included. Relevant clinical data were collected from the requisition forms and the case sheets. In the present study, the maximum incidence of AUB was in the 40-49 years of age. The incidence of AUB in >49

years of age was lower as compared to those between 40-49 years. Our study and other studies have maximum incidence of AUB in the perimenopausal age group [5-9].

As women approach menopause, cycles shorten and often become intermittently anovulatory due to decline in the number of ovarian follicles and fluctuation in the estradiol level [10]. Our study and other studies found menorrhagia as the most common complaint [5]. Most of our patients were in the multiparity category.Most of the studies reported higher incidence of AUB with increase in parity [5, 11]. Among the non-organic causes of endometrial pattern in peri-menopausal women, most common pattern was the proliferative endometrium.The bleeding In proliferative phase may be due to anovulatory cycle. These findings are similar to Vijay kumar et al [12] and Sahid khan, Sadia Hameed & Aneela Umber [1]. Secretory phase endometrium which is the second most common pattern observed in this study and was seen in 14 % cases which was correlating with the Bhosle et al study and Sajitha et al study (16.6 % and 26 % respectively) [1, 13]. Bleeding in the Secretory phase is due to adulatory dysfunctional uterine bleeding [14].

Among the organic causes endometrial hyperplasia is the most common pathology we have noticed. Endometrial hyperplasia was observed in 27.4% of cases. K. Sajitha *et al* found it to be 56.4% which is higher than that of our findings which may be due to age group and number of cases in their study. Endometrial hyperplasia is important because they are thought to be the precursors of endometrial carcinoma [15]. The overall risk of progression of hyperplasia to cancer is 5-10%.[16] Simple (SH) [Figure 1], Complex (CH) [Figure 2] , simple atypical (SAH), and complex atypical hyperplasia (CAH) [Figure 3], have different progression risks of 1%,3%, 8% and 29% respectively to carcinoma [16]. The different types of hyperplasias observed in this study were SH -19 (12.7%), Adenomatous hyperplasia-3 (2%), CH -12 (8%), and CAH -7 (4.7%).

The incidence of endometrial polyps in our study is 9.3% which is similar to that seen in Junu *et al* , Khans *et al* and Acharya *et al* which is 9.65%, 9.8% and 10% respectively [1, 17, 18]. Endometritis was found in 4.7% cases which correlates with the study done by Junu et al study which shows 5.2% cases [17].

In our study, Pill endometrium was seen in 5.3% cases which correlated with the study done by Sajitha *et at* study which showed 7.6% [5]. In this pattern,the endometrium shows a combination of inactive glands, abortive secretions, decidual reaction and thin blood vessels [19]. This pattern was predominantly seen in the perimenopausal age group. This was probably due to increased number of patients in this age resorting to early medical management for bleeding.

Atrophic endometrium is the most common cause of bleeding in the post menopausal stage [20]. Thin walled veins, superficial to the expanding cystic glands, make the vessels vulnerable to injury and lead to excessive uterine bleeding. Atrophic endometrium was seen in 4% cases which was similar to that of Cornitescu *et al* and Sajitha *et al* study which showed 4.3% and 5.1% respectively [5, 20].

The predominant type of endometrial carcinoma was Endometroid type [Figure 4.] which constituted 6 cases out of 9 cases of endometrial carcinoma. Three cases of endometroid adenocarcinoma, one case of villoglandular variant and 2 cases of endometroid carcinoma with squamous differentiation. The most common presentation in these cases were post menopausal bleeding which was correlating with that of Baral R *et al* study [21].

CONCLUSION

Endometrial lesions vary according to the patient's age. Anovulatory bleeding was common especially in premenopausal women. Endometrial sampling by Dilatation and Curettage is an effective and reliable diagnostic test. Its interpretation can be quite challenging and also may show considerable interobserver variability. Clinical information regarding age, menstrual history,parity and imaging studies are important prerequisites in the interpretation of endometrial samples. D&C reveals the endometrial patterns in various forms of AUB and also helps to exclude the presence of any organic pathology. Thus, histopathological evaluation of endometrium is especially indicated in women over 40 years to rule out preneoplastic lesions and malignancies.

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