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Original Research Article

A study of histomorphological patterns of endometrium in abnormal uterine bleeding

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ABSTRACT

Introduction: Abnormal uterine bleeding(AUB) is one of the most common gynaecological problems, which accounts for about 33% of out patient referrals. It is a debilitating condition with high direct and indirect costs. AUB is considered as a cause of significant health care burden for women, their families and society as a whole.
Aims and objective: To study the various histomorphological patterns of endometrium in AUB.
Materials and Methods : This is a retrospective study done in Department of Pathology, tertiary care hospital, JJMMC Davangere for a period of 2 years from January 2016 to December 2017. 212 cases of endometrial biopsies were reviewed in AUB. The slides were obtained from departmental archives and clinical data from the histopathological forms. The data was entered and interpreted in Microsoft Excel and the analysis was done in percentages and proportions and was represented in tables, graphs and pie charts wherever necessary.
Results: A total of 212 cases were analysed and the age of females ranged from 20-62 yrs. The most common histomorphological pattern was Endometrial Hyperplasia without atypia in 43.0% of cases followed by Secretory endometrium in 15.6% of cases. Proliferative endometrium was seen in 14.6% of cases and Disordered proliferative endometrium was seen in 14.2% of cases. There were also 2 cases with Simple atypical hyperplasia.
Conclusion: The cause of AUB can be identified by the histopathological study of endometrial curettages and biopsies. This helps to plan for successful management of the females presenting with AUB.

1. Introduction

Abnormal uterine bleeding(AUB) is one of the most common gynaecological problems. It accounts for about 33% of out patient referrals.

Acute AUB is “an episode of bleeding in a woman of reproductive age, who is not pregnant, that is of sufficient quantity to require immediate intervention to prevent further blood loss.”

Chronic AUB is “ bleeding from the uterine corpus that is abnormal in duration, volume, and/or frequency and has been present for the majority of the last 6 months.”[1]

It is a debilitating condition with high direct and indirect costs. AUB is considered as a cause of significant health care burden for women, their families and society as a whole.

The causes of Abnormal uterine bleeding may be physiological, pathological or pharmacological.[2] It is associated with any type of endometrium ranging from normal endometrium to hyperplasia, irregular ripening, chronic menstrual irregular shedding and atrophy.[3] It may be due to fibromyoma, adenomyosis, endometrial polyp, ovarian tumor, pelvic inflammatory disease (PID), endometrial hyperplasia, endometrial carcinoma, hormonal imbalance (like hypothyroidism), or hypothalamic-pituitary diseases.

It is important to understand the clinical questions, systematic and practical approach to evaluate the endome-

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trial biopsies. Abnormal uterine bleeding is associated with endometrial carcinoma in approximately 10% of cases. Endometrial hyperplasia with atypia is found to be a precursor of endometrial carcinoma and may progress to endometrial carcinoma in 5-25% of patients. Endometrial hyperplasia with atypia is associated with a coexisting endom etrial carinoma in approximately 20% of patients.[4]The sensitivity of endometrial biopsy for detection of endometrial abnormalities has been reported to be as high as 96%.[5]Even though, endometrial biopsy has high sensitivity for endometrial carcinoma, its sensitivity for detecting endometrial hyperplasia with atypia is found to be low as 81%.[6,7]

The aim of this study is to study the various histopathological patterns in the endometrial biopsy of patients presenting with abnormal uterine bleeding.

2. Materials and Methods

This was a retrospective study conducted in Department of Pathology, JJM medical college fr om January 2016 to December 2017. A total of 212 endometrial biopsies were reviewed in AUB. The slides were obtained from departmental archives and clinical data from the histopathological forms. The data was entered and interpreted in Microsoft Excel. The analysis was done in percentages and proportions and was represented in tables, graphs and pie charts wherever necessary.

3. Results

A total of 212 endometrial biopsy or curettage samples of women with abnormal uterine bleeding were studied. Age range d from 20 years to 62 years. Out of the 212 patients with abnormal uterine bleeding, maximum was in the age group 36-40 years- 51 patients followed by 50 patients in the age group 41-50 years. 44 patients were in the age group 46-50 years and 30 patients were in the age group 31-35 years. There were 3 patients in the age group 56-60 years and 1 patient above 60 years.

The most frequent histomorphological pattern was Endometrial Hyperplasia without atypia found in 91 patients (43.0%) followed by secretory endometrium in 33 patients (15.6%). Disordered proliferation was found in 31 patients (14.6%), prolife rative endometrium found in 30 patients (14.2%), irregular shedding seen in 8 patients(3.8%) and menstrual endometrium seen in 5 patients (2.4%). Functional endometrial polyp seen in 3 patients (1.4%). Atypical endometrial hyperplasia, arrested secretion, products of conception, hormonal therapy, chronic non-specific endometritis seen in 2 patients each (0.9%) and acute endometritis seen in 1 patient (0.5%).

Table 1: Total number of cases

Cases	Number
Abnormal uterine bleeding	212

4. Discussion

4.1. Endometrial hyperplasia without atypia

In our study this phase was the most common endometrial pattern seen in 91 cases (43.0 %). Our study was in coordination with that of Talukdar et al[8](41.66%), Sanjitha et al[9](25.0%) and was second most common in the study by Sudhamani et al[10](20.74%). In contrast, the studies done by Gopalan et al[11](5.4%) and Badary et al[12] (3.6%) found this to be in slight predominance.

4.2. Secretory phase

It's divided into early, mid and latte secretory phases.[13] In our study this phase was the second common endometrial pattern seen in 33 cases (15.6%). Our study was in coordination with that of Talukdar et al[8] (16.11%), Sanjitha et al[9] (16.7%), Mahapatra et al[14](30.0%) and in contrast with Badary et al[12](2.4%). It was most common pattern in study done by Jetley et al[15](32.4%)

4.3. Disordered proliferation

It is considered as transitional form to simple (glandular cystic) hyperplasia and was the third common endometrial pattern seen in 31 cases (14.6%). Our study was in coordination with that of Sanjitha et al[9](12.2%). It contrast, it was slightly seen in study done by Jetley et al[15](6.8%) and Badary et al[12](6.8%).

4.4. Proliferative phase

Proliferative phase suggests an anovulatory phase of the endometrial cycle. In our study this phase was the next common endometrial pattern seen in 30 cases (14.2%). Our study was in coordination with t hat of Talukdar et al[8](20.56%), Sanjitha et al[9] (12.2%) and Badary et al[12](4.7%). It contrast, it was most common pattern seen in study done by Gopalan et al,[11] Sudhamani et al[10]and Jetley et al[15](30.6%).

4.5. Endometrial polyps

It was seen in 3 cases (1.4 %) of endometrial biopsies in our study. Our study was in coordination with that of Gopalan et al[11](1.1%), Talukdar et al[8](2.22), and Jetley et al[15](2.7%). There was slight predominance seen in Sanjitha et al[9](5.12%), Sudhamani et al[10](3.65%), Mahapatra et al[14]and was in contrast with Badary et al[12](37.9%)

Table 2: Age distribution of cases

Age groups (in years)	Number of cases	Percentage (%)
≤20	01	0.5
21-25	09	4.2
26-30	20	9.4
31-35	30	14.1
36-40	51	24.1
41-45	50	23.6
46-50	44	20.8
51-55	3	1.4
56-60	3	1.4
>60	1	0.5
Total	212	100

Table 3: Distribution of Endometrial patterns

Endometrial patterns	Number	Percentage (%)
Proliferative	30	14.2
Secretory	33	15.6
Disordered proliferative	31	14.6
Endometrial hyperplasia without atypia	91	43.0
Atpical Endometrial hyperplasia	02	0.9
Menstrual endometrium	05	2.4
Chronic non specific endometritis	02	0.9
Acute endometritis	01	0.5
Functional Endometrial polyp	03	01.4
Irregular shedding	08	03.8
Hormonal Therapy	02	0.9
Products of conception	02	0.9
Arrested secretion	02	0.9
Total	212	100

4.6. Chronic non-specific endometritis

There were 2(0.9%) cases of Chronic non-specific endometritis. Tuberculosis is one of the major cause of granulomatous endometritis, especially in developing countries like India. Once the endometrium is affected, it suggests a more widespread disease affecting the genital tract; especially the fallopian tubes. Our study correlated with that of Sanjitha et al[9] (0.64 %), Gopalan et al[11] (0.7%) and Talukdar et al[8] (2.22%). Sudhamani et al[10] observed 2.43 % cases, Jetley et al[15] observed 9.1% cases and Badary et al[12] in 4. 1% cases.

4.7. Atypical Endometrial hyperplasia

In our study there were 2 cases (0.9%) of atypical endometrial hyperplasia. Our study correlated with that of Gopalan et al[11] (0.8%) and in Talukdar et al[8] (4.44%), and in Badary et al[12] was seen in 6.2% cases.

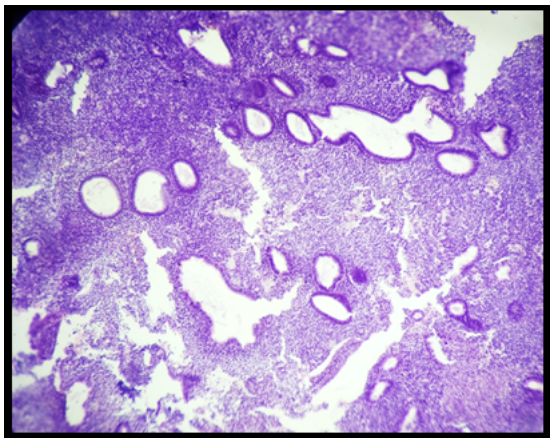

Fig. 1: Endometr ial hyperplasia without atypia, H and E, 10X

5. Conclusion

In our study, the endometrial hyperplasia without atypia was the most common histomorphological pattern seen in females with abnormal uterine bleeding followed by secretory phase endometrium, disordered proliferation and proliferative phase endometrium. The cause of AUB can be identified by the histopathological study of endometrial curettages and biopsies. Endometrial curettages and biopsy are important diagnostic procedures for assessing all cases of abnormal uterine bleeding to detect endometrial

Table 4: Comparison of endometrial patterns among various studies

Endometrial Patterns	Sajitha et al [9]	Gopalan et al [11]	Mahapatra et al [13]	Sudhamani et al [10]	Jetley et al [15]	Badary et al [12]	Talukdar et al [8]	Present study
Proliferative	12.2	47.3	45.7	48.78	30.6	4.7	20.56	14.2
Secretory	16.7	16.1	30.0	17.08	32.4	2.4	16.11	15.6
Disordered proliferative	12.2	6.2	-	-	6.8	6.8		14.6
Endometrial hyperplasia without atypia	25.0	5.4	12.1	20.74	8.6	3.6	41.66	43.0
Atypical endometrial hyperplasia	-	0.8	-	-	-	6.2	4.44	0.9
Menstrual endometrium	1.28	-	-	-	-		1.67	2.4
Chronic non specific endometritis	0.64	0.7	-	2.43	9.1	4.1	2.22	0.9
Acute endometritis	-	-	-	-	-	-	-	0.5
Functional Endometrial polyp	5.12	1.1	5.0	3.65	2.7	37.9	2.22	1.04
Irregular shedding	-	-	-	-	-	-	-	3.8
Hormonal Therapy	-	-	-	-	2.7	2.4	-	0.9
Products of conception	-	-	-	-	-	-	-	0.9
Arrested secretion	-	-	-	-	-	-	-	0.9

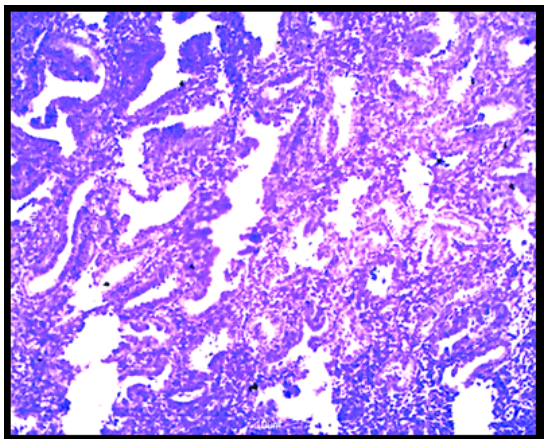

Fig. 2: Endometrial hyperplasia without atypia, H and E, 40X

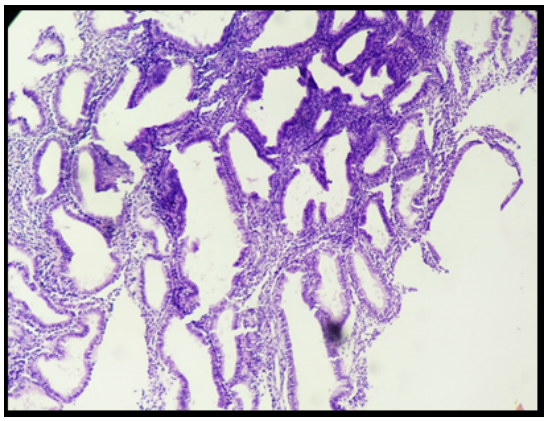

Fig. 4: Secretory Phase Endometrium, H and E, 10X

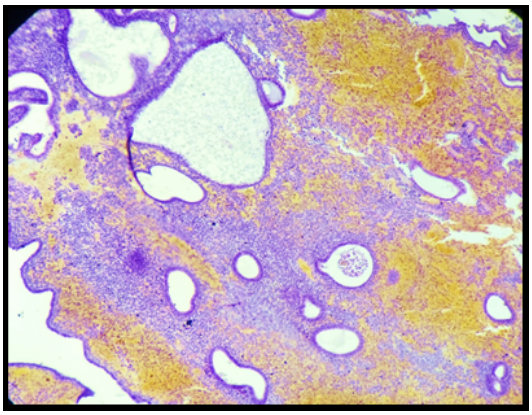

Fig. 3: Disordered Proliferative endometrium , H and E, 10X

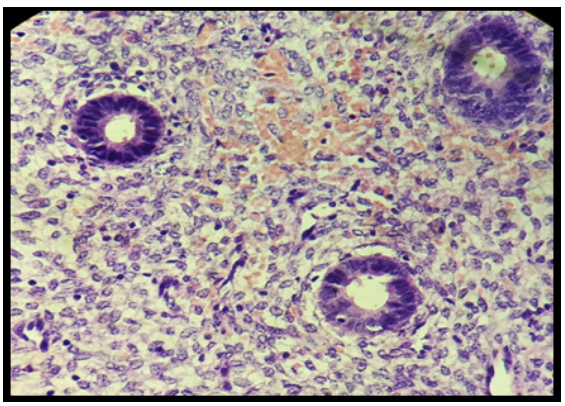

Fig. 5: Proliferative phase, Hand E, 40X

carcinoma and endometrial hyperplasia which has very good prognosis if detected and treated early. Thus, helps to plan for successful management of the females presenting with AUB.

6. Source of funding

None.

7. Conflict of interest

None.

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