

Histopathological Pattern of Endometrial Biopsies in Women with Abnormal Uterine Bleeding in A Tertiary Care Hospital in Central Gujarat

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How to citation this article: Dr. Suruchi Akbari, Dr. Nidhi Shah, Dr. Shobhana Prajapati, Dr. Roopam Gidwani, “Histopathological Pattern of Endometrial Biopsies in Women with Abnormal Uterine Bleeding in A Tertiary Care Hospital in Central Gujarat”, IJMACR- February - 2025, Volume – 8, Issue - 1, P. No. 216 – 222.

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Type of Publication: Original Research Article

Conflicts of Interest: Nil

Abstract

Background and Aims: Endometrial biopsies are obtained for a symptom called AUB (Abnormal Uterine Bleeding) which simply means bleeding that occurs outside the normal menstrual cycle. To determine the etiology of AUB, endometrial biopsy is proved to be a valuable diagnostic tool. The etiology of AUB can be attributed to structural as well as non-structural causes. The aim of the present study is to evaluate the spectrum of histomorphological patterns in women with AUB amongst different age groups and parity.

Materials and Methods: The study is carried out in Department of Pathology, on specimens received over one year period (July 2022 to June 2023). Total 165 samples of endometrial biopsies from women presenting with AUB is sent to Histopathology lab were analysed.

Specimens received in compromised condition (Autolysis) were excluded from the study.

Results: Most patients were in the age group of 41-50 years (46.7%), with normal cyclical finding as the most common histopathological finding. Malignant lesion was noted in 4.5% women with majority of them being older than 50 years. The second most common cause observed was Endometrial hyperplasia without Atypia. Structural causes were noted in 6 cases (3.6%).

Conclusion: Normal cyclical changes account for the highest proportion of histopathological patterns. However, Endometrial hyperplasia and Malignancies are important causes of AUB among perimenopausal and postmenopausal women. Endometrial biopsy is proved to be highly effective in diagnosing premalignant and malignant cases.

Keywords: Abnormal uterine bleeding, AUB, Endometrial biopsy, Histopathology

Introduction

Abnormal uterine bleeding (AUB) is defined as a pattern of bleeding that occurs outside the normal menstrual cycle and it is characterized by changes in the frequency, volume and duration of the menstrual flow⁽¹⁾. It is one of the most common presenting symptom encountered in Gynecology OPDs. The etiology of AUB can be attributed to structural as well as non-structural causes¹ and it varies with age. In young women in reproductive age group, it is mostly attributed to hormone imbalance, while in peri-menopausal and post-menopausal women, it is attributed to endometrial hyperplasia or malignancies.⁽²⁾ To determine the etiology of AUB, histopathological examination of endometrial biopsies and curetings by the light microscope is proved to be a valuable diagnostic tool because of the relative ease and safety of obtaining samples and reasonable diagnostic accuracy.⁽³⁾ The interpretation of endometrial sampling is of great challenge to due to hormone responsiveness and dynamic variation according to normal menstrual cycle⁽³⁾. Endometrial biopsy is equally important in evaluating patient with infertility. Other indications of endometrial samplings are dating of endometrium by its histological appearance which is used to determine ovulation, hormonal status assessment and cause of AUB⁽⁴⁾.

Aim and Objectives

- The aim of the present study is to evaluate the spectrum of histomorphological patterns in women with AUB.
- Correlation of histomorphological patterns with different age groups and parity.

Materials and Methods

The study is carried out in Department of Pathology on specimens received over one year period (July 2022 to June 2023). Total 165 samples of endometrial biopsies from women presenting with AUB are subjected to histopathological evaluation. The endometrial samples received from Obstetrics and gynecology department in histopathology section are fixed in 10% formalin. After that they are subjected to processing, paraffin blocks are made and sectioned under microtomy (4 to 5 microns thickness), stained with Hematoxylin and Eosin stain and evaluated under light microscope. Histopathological examination of endometrial samplings are done and clinical correlation made. The endometrial samples are categorized into different age groups and histomorphological patterns. Specimens received in compromised condition (Autolysis) were excluded from the study.

Design

Retrospective cross-sectional study.

Photographs

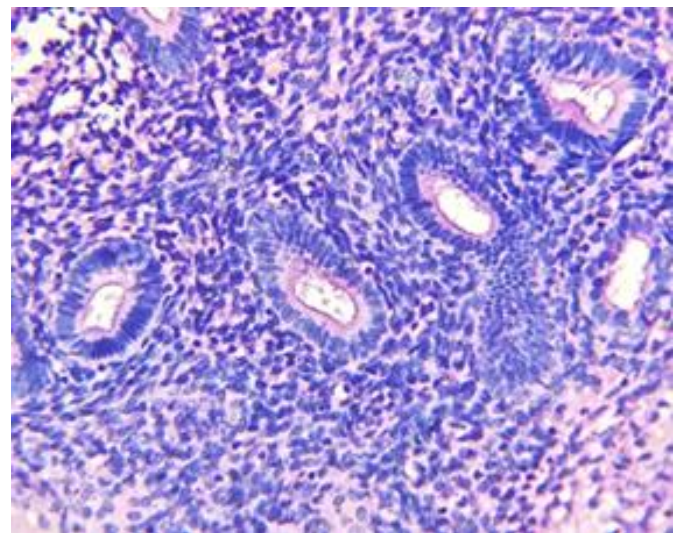


Figure 1: Proliferative Phase endometrium (10x H and E stain)

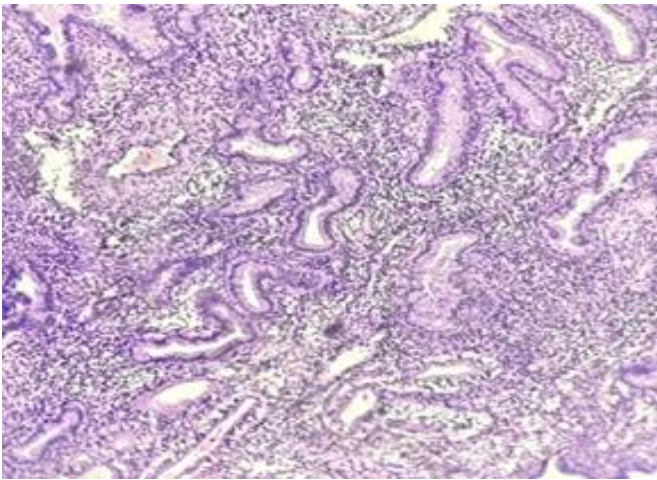


Figure 2: Secretory phase endometrium (10x H and E stain)

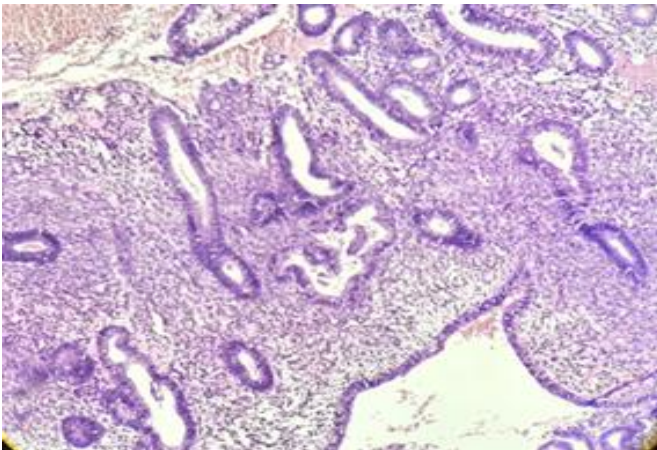


Figure 3: Endometrial hyperplasia with Atypia (10x H and E stain)

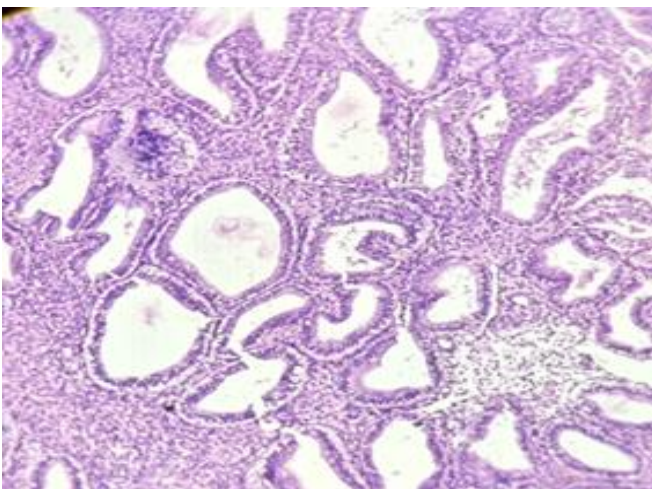


Figure 4: Endometrial hyperplasia without Atypia (10x H and E stain)

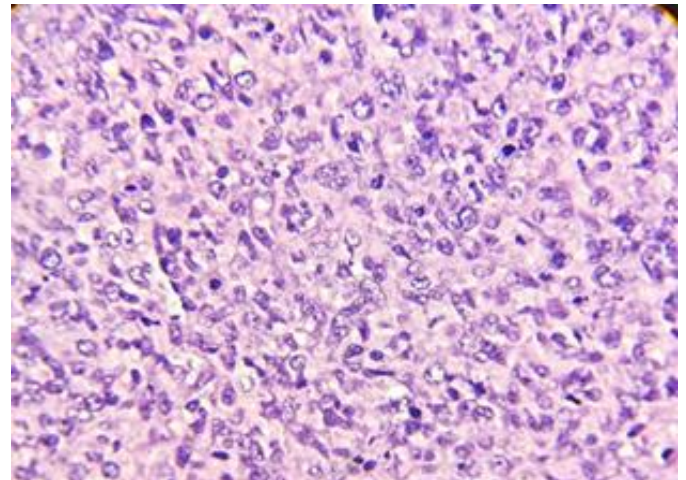


Figure 5: Endometrial carcinoma (40x H and E stain)

Results

The study comprises 165 endometrial samples from different age groups.

Most patients were in the age group of 41-50 years (46.7%), with normal cyclical findings (63%) as the predominant histomorphological pattern followed by endometrial hyperplasia without atypia (13.3%). Malignant lesions were noted in 4.5% women with majority of them being older than 50 years. The second most common cause observed was endometrial hyperplasia without Atypia. Structural causes were noted in 6 cases (3.6%).

Table 1: Age wise distribution of endometrial samples

Age Group	No. of cases	Percentage (%)
<20	0	0
21-30	12	7.3
31-40	50	30.3
41-50	77	46.7
51-60	18	10.9
>60	8	4.8
Total	165	100

Table 2: Distribution of histomorphological pattern of endometrium

Pattern	No. of cases	Percentage (%)
Proliferative endometrium	80	48.5
Secretory endometrium	24	14.5
Disordered proliferative endometrium	11	6.6
Atrophic endometrium	3	1.8
Endometrial Polyp	6	3.6
Endometrial Hyperplasia with Atypia	1	0.6
Endometrial Hyperplasia without Atypia	22	13.3
Endometrial Carcinoma	7	4.5
Any other	11	6.6
Total	165	100

Table 3: Histomorphological patterns of endometrium in different age groups

Pattern	Age groups		
	Reproductive age group	Peri-menopausal age group	Post-menopausal age group
	21-40 Years	41-50 years	>50 years
Proliferative Endometrium	28	46	6
Secretory Endometrium	24	8	2
Disordered Proliferative endometrium	6	4	1
Atrophic Endometrium		1	2
Endometrial Polyp		4	2
Endometrial Hyperplasia with Atypia	1		
Endometrial Hyperplasia without Atypia	7	12	3
Endometrial Carcinoma	1		6
Any other	5	2	4

Discussion

AUB is the most frequently presenting complaint among gynaecology outdoor patients and endometrial samplings from these cases have been routinely received in histopathology⁽²⁾.The histopathological reporting of endometrium is highly subjective and of great challenge

due to its dynamic cyclical changes and spectrum of histomorphological pattern in response to hormones. The pathologist plays a significant role in early detection of endometrial precursor lesions and exclusion of malignancy. AUB without any underlying organic cause is by exclusion termed as dysfunctional uterine bleeding

(DUB). It is of great importance as it leads to anemia and significantly affects the quality of life. ⁽⁵⁾

In our study of 165 cases, the peak incidence is seen among the age group of 41-50 years (77 cases, 46.7%). AUB usually peaks in the this decade as the physiologic phenomenon of menopausal transition takes place. ^(12,13) Second most common age group was 31-40 years

Table 4:

	Present study	Vijayaraghvan et al. ⁽⁴⁾	Prathipa R. et al ⁽³⁾	Puneet kaur et al ⁽²⁾
Most common age group	41-50 years, 77/165 cases, 46.7%	41-50 years, 90/160 cases, 56.3%	41-50 years, 108/256 cases, 42.19%	>50 years, 76/214 cases, 36%
Least common age group	>50 years 26/165 cases, 15.7%	>50 years 25/160 cases, 15.6%	<30 years, 25/256 cases, 9.77%	>50 years, 26/214 cases, 12%

Histopathological examination of the endometrium shows spectrum of patterns in which normal cyclical pattern (104/165, 63 %) is the most recurrent and predominantly observed pattern. Proliferative pattern (48.5%) is the dominant histomorphological pattern in our study. It is comparable with other studies done by Vijayaraghvan et al⁽⁴⁾, Eman Hussein alshdaifat et al⁽¹⁾., Puneet Kaur et al ⁽²⁾ and Prathipa R.et al⁽³⁾

Table 5:

Histomorphological pattern	Present study	Vijayaraghvan et. al ⁽⁴⁾	Eman Hussein alshdaifat et al ⁽¹⁾	Prathipa R. et al ⁽³⁾	Puneet kaur et al ⁽²⁾
Proliferative pattern	80/165 cases, 48.5%	56/160 cases, 35%	1910/3233 cases, 59.1%	129/256 cases, 50.39%	69/214 cases, 33%

Reproductive age group (21-40 years): Among 165 cases, 62 cases were in reproductive age group, in which the predominant pattern was proliferative endometrium (28 cases), followed by secretory endometrium (24 cases).

Perimenopausal age group (41-50 years): Among 165 cases, 77 cases were in reproductive age group, in which the predominant pattern was proliferative endometrium (46 cases), followed by hyperplasia without atypia (12 cases).

(30.3%) and in the descending order 51-60 years (10.9%), 21-30 years (7.3%) was seen. Least common age group was >60 years (4.8%). It is comparable to other studies done by Vijayaraghvan et al. ⁽⁴⁾ , Puneet Kaur et al ⁽²⁾ (least common age group) and Prathipa R. et al ⁽³⁾ (most common age group)

Postmenopausal age group (> 50 years): Among 165 cases, 26 cases were in postmenopausal age group, in which majority of cases were proliferative endometrium (6 cases) and endometrial carcinoma (6 cases).

It is of critical importance for pathologists to diagnose endometrial hyperplasia, the precursors of endometrial carcinoma. The overall risk of progression of endometrial hyperplasia to malignancy is 5-10%. ⁽⁶⁾ Simple endometrial hyperplasia without atypia, complex endometrial hyperplasia without atypia, simple endometrial hyperplasia with atypia and complex

endometrial hyperplasia with atypia have variable progression risks of 1%, 3%, 8%, and 29%, respectively, to malignancy.⁽⁷⁾

In our study Endometrial hyperplasia is the second most common dominant pattern (23/165 cases, 13.9%) and it is observed predominantly in peri-menopausal age group (41-50 years). It is comparable to other study done by Vijayaraghvan et al.⁽⁴⁾ Out of 23 cases, 97% cases are without atypia and 3% cases are with atypia.

Disordered proliferative pattern(DPE) is characterised by the absence of uniform glandular development and resembles simple hyperplasia but it is focal in the process rather than diffuse.⁽¹⁰⁾ In our study, 11 cases were having DPE(6.6%), which is comparable to study done by Prabha et al. (4%).⁽¹¹⁾

In our study the incidence of endometrial malignancy is least common (7/165 cases, 4.5%) and is observed predominantly in post-menopausal age group. One case of malignancy was also found in age group of 21-30 years, which is rare presentation.

Endometrial polyp is the benign outgrowth from the uterine cavity composed of glands, stroma and blood vessels.⁽⁹⁾ In our study 3.6% shows endometrial polyp which is predominantly seen in peri-menopausal age group. which is comparable to the study by Sharma K et al⁽⁸⁾ (10 cases, 2.73%) and predominantly seen in the perimenopausal age group.

Other non-specific findings are present in approximately 11 cases (6.6%) which includes dilated or inactive glands, progesterational changes, keratinous debris and chorionic villi.

Conclusion

Abnormal uterine bleeding significantly affects the quality of life in women resulting in anemia. Endometrial sampling is considered in peri and post-

menopausal women and in reproductive age group not responding to medical treatment. Normal cyclical changes account for the highest proportion of histopathological patterns. However, Endometrial hyperplasia and Malignancies are important causes of AUB among perimenopausal and postmenopausal women. Endometrial biopsy is proved to be highly effective in diagnosing premalignant and malignant cases.

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