

ORIGINAL RESEARCH

The investigation of abnormal uterine bleeding as it relates to endometrial pathology**¹Dr. Sonu Jain, ²Dr. Reena Agarwal, ³Dr. Rajeev Goel**^{1,2}Associate Professor, ³Assistant Professor, Department of Pathology, Santosh Medical College & Hospital, Ghaziabad, Uttar Pradesh, India**Corresponding author**

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Abstract**Aim:** The investigation of abnormal uterine bleeding as it relates to endometrial pathology**Materials and methods:** Patients who had isolated endometrial causes of abnormal uterine bleeding were included in the research. The pathology laboratory received all of the specimens preserved in 10% formalin while they were transported there. It was decided to document the gross morphology. A LEICA automated tissue processor was used to treat the tissue fragments, and paraffin blocks were formed as a result. After cutting tissue into slices of 4-6 microns in thickness, the sections were stained with hematoxylin and eosin, and then examined using a light microscope. A histopathological study of the endometrial samples that were taken was performed, and a clinical connection was established.**Results:** This research used a total of two hundred endometrial samples from AUB participants. The proliferative pattern was observed to be the most common histological finding, accounting for 55% of all cases. This was followed by the secretory phase (42%), endometrial hyperplasia without atypia (6%), pill endometrium (4%), atrophic endometrium (4%), endometrial carcinoma (3.5%), inadequate sample (2.5%), polyp (1.5%), endometrial hyperplasia with atypia (1.5%).**Conclusion:** Endometrial lesions may seem quite different depending on the age of the patient. Endometrial sampling accomplished by dilatation and curettage is a diagnostic procedure that is both effective and dependable. Its interpretation may be fairly difficult, and it is possible for there to be a significant amount of interobserver variability. Dilatation and curettage are two diagnostic procedures that help rule out the existence of any organic disease and disclose the endometrial patterns that are present in the different kinds of AUB.**Keywords:** Abnormal uterine bleeding, endometrial**Introduction**

In gynaecological clinics, abnormal uterine bleeding, often known as AUB, is one of the most frequently occurring symptoms that patients report with. The prevalence of AUB in women who have not yet reached menopause is between 9 and 14%. There have been reports indicating that the frequency of AUB in India is around 17.9% [1]. Alterations in the frequency of menstruation, length of flow, and volume of blood loss are the three components that comprise AUB. Menstruation typically lasts between 4 and 7 days, and the typical amount of blood lost per a cycle is 35 millilitres. It encompasses both organic and inorganic

factors that may be responsible for uterine haemorrhage. In the examination of abnormal uterine bleeding, endometrial biopsy or curettage is a safe and effective diagnostic method that should be performed when medical explanations have been ruled out [2]. When age, the phase of the menstrual cycle, and the usage of any exogenous hormones are taken into consideration, histological patterns of the endometrium may be used to diagnose the underlying condition. Younger patients are more likely to have pregnancy-related and dysfunctional uterine haemorrhage, while elderly patients are more likely to experience atrophy and organic lesions [3]. In 2011, the International Federation of Gynecology and Obstetrics (FIGO) initiated a new nomenclature system for the purpose of standardising the terminologies of AUB. This new nomenclature system is known by the acronym PALM-COEN (Polyp; Adenomyosis; Coagulopathy; ovulatory disorders; endometrial factors; iatrogenic; and not classified), and it is comprised of the following terms:

In the PALM-COEN approach, which is based on etiopathogenesis, structural reasons are described using PALM, while nonstructural causes of AUB are denoted using COEN. As a result, the FIGO nomenclature system will make it possible to standardise and maintain uniformity while carrying out future investigations. It also has the potential to solve the issue of inconsistent AUB administration [4]. The purpose of this research was to investigate the endometrial factors that contribute to AUB and to identify the unique pathophysiology that each age group exhibited.

Materials and methods

The patients who presented with AUB to the department of pathology were the subjects of this research, which was a retrospective investigation. Patients were chosen for the study on the basis of their clinical characteristics. Patients who had isolated endometrial causes of abnormal uterine bleeding were included in the research. Patients who had leiomyoma, cervical pathology, vaginal pathology, or hemostatic diseases were not included in the study. The pathology laboratory received all of the specimens preserved in 10% formalin while they were transported there. It was decided to document the gross morphology. A LEICA automated tissue processor was used to treat the tissue fragments, and paraffin blocks were formed as a result. After cutting tissue into slices of 4-6 microns in thickness, the sections were stained with hematoxylin and eosin, and then examined using a light microscope. A histopathological study of the endometrial samples that were taken was performed, and a clinical connection was established.

Results

This research used a total of two hundred endometrial samples from AUB participants. The proliferative pattern was observed to be the most common histological finding, accounting for 55% of all cases. This was followed by the secretory phase (42%), endometrial hyperplasia without atypia (6%), pill endometrium (4%), atrophic endometrium (4%), endometrial carcinoma (3.5%), inadequate sample (2.5%), polyp (1.5%), endometrial hyperplasia with atypia (1.5%).

Table 1: Age wise distribution of endometrial samplings in AUB

Age in years	No. Of cases	Percentage
20-30	24	12
30-40	80	40
40-50	70	35
50-60	18	9
60-70	5	2.5
>70	3	1.5

In our study most of the endometrial samples were between 30 – 40 years of age.

Table 2: Abnormal uterine bleeding with isolated endometrial causes according to age group

Histopathology	Age in years						Total	%
	20-30	30-40	40-50	50-60	60-70	>70		
Proliferative endometrium	16	46	42	6	-	-	110	55
Secretory endometrium	6	20	12	4	-	-	42	21
Endometrial hyperplasia without atypia	-	4	6	2	-	-	12	6
Pill endometrium	1	3	3	1	-	-	8	4
Non-secretory atrophic endometrium	-	1	3	2	1	1	8	4
Endometrial carcinoma	-	2	1	2	1	1	7	3.5
Inadequate	1	-	1	1	1	1	5	2.5
Polyp	-	1	1	-	1	-	3	1.5
Endometrial hyperplasia with atypia	-	1	1	-	1	-	3	1.5
Tuberculous endometritis	-	2	-	-	-	-	2	1
Total	24	80	70	18	5	3	200	100

In women aged 30 to 40, uterine bleeding was a regular occurrence, and the major pattern seen was proliferative, followed by secretory endometrium. Secretory endometrium was also a typical finding. 160 of the samples used for the histological investigation of the endometrial samples were taken by dilatation and curettage, while the other 40 samples were obtained through hysterectomy specimens.

Discussion

AUB is responsible for roughly a quarter of all gynaecological operations and twenty percent of all outpatient visits [5]. In the course of the research, we analysed the histology of endometrium to determine the factors that lead to endometrial conditions. In addition, we monitored the prevalence of a variety of diseases across a range of ages and investigated how these factors are related to having children. In our research of 200 cases, the highest incidence was noted in the age ranges of 30-40 years (80 cases, 40%). This is in comparison with studies carried out by Sharma K et al[6] (37.26), Singh s et al[7] (34%), Punitha R.D et al(48.70%),Samal R et al[8], and Bindroo S et al[9] (43.2%). Our investigation found that the proliferative pattern was the most common morphological pattern. When compared to the work by Singh s et al[6], our study found that the incidence of the proliferative pattern was much higher at 55%.

According to the findings of our research, the secretory phase was the second most prevalent histological pattern, accounting for 42 (21%) of all cases. The research by Rajagopal and colleagues [10] served as a point of comparison for our occurrence. According to the findings of our research, pill endometrium was present in 8 (4% of instances). The research that we did was compared to research done by Rajagopal et al. [10]. The vast majority of the women who participated in this research had typical cycle patterns of endometrial, which included secretory, proliferative, and atrophic endometrium.

The ability of pathologists to recognise endometrial hyperplasia as well as the conditions that might lead to endometrial cancer is of the utmost significance. There is a 5–10% chance that endometrial hyperplasia may proceed into cancer over the course of a lifetime. In the course of our research, we found that endometrial hyperplasia without atypia was present in 12 (6%),

while endometrial hyperplasia with atypia was present in 3 (1.5%) of the patients. According to the findings of the research that was conducted by Sharma K et al[6], it was found that 90% of endometrial hyperplasia displays no atypia and 10% displays atypia. Endometrial polyps are noncancerous growths that protrude from the uterine cavity and are made up of glands, stroma, and blood vessels [11]. In our investigation, the presence of endometrial polyps was found in three women (1.5%). This finding was consistent with the findings of a study by Sharma K et al[6] and was found in the perimenopausal age range. In the course of our research, we found that 4% of women had atrophic endometrium. The lack of oestrogen that occurs after menopause is the cause of the atrophic endometrium, and the rupture of blood vessels that are dilated underneath the thin endometrium is the cause of abnormal uterine haemorrhage [12]. A correlation between the atrophic endometrium and the age group of women who have passed menopause was found in a research that was carried out by Prabha G et al[13].

In this particular research, endometrial cancer only made up 3.5% of cases overall. According to the findings of our research, postmenopausal women were more likely to have endometrial cancer. The incidence of endometrial cancer was shown to be rather low in the research that was connected with ours by Sajeetha et al. [14]. According to the findings of our research, 2.5% of instances were due to an insufficient sample. A correlation was found between this research and the one done by Sajeetha K et al. [14]. According to the findings of this research, the incidence of tuberculous endometritis was just 2% (1%). There were many cases of amenorrhea shown, which is frequent in women of reproductive age. Research conducted by S.Gupta et al.[15] and ElevarasanRPT et al.[16] was shown to have a correlation with one another.

Conclusion

Endometrial lesions may seem quite different depending on the age of the patient. Endometrial sampling accomplished by dilatation and curettage is a diagnostic procedure that is both effective and dependable. Its interpretation may be fairly difficult, and it is possible for there to be a significant amount of interobserver variability. Dilatation and curettage are two diagnostic procedures that help rule out the existence of any organic disease and disclose the endometrial patterns that are present in the different kinds of AUB. Therefore, a histological study of the endometrium is particularly recommended for women over the age of 35 in order to exclude the presence of preneoplastic lesions and cancers. The risk of developing anaemia as a consequence of AUB has a substantial impact on the quality of life of women.

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