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Original Research Article

A Hospital Based Assessment of the Histological Patterns of the Endometrium in Women with Abnormal Uterine Bleeding (AUB) and Distinct Histopathological Patterns among Various Age Groups: An Observational Study

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Abstract

Aim: The aim of the present study was to evaluate the histological patterns of the endometrium in women with Abnormal Uterine Bleeding (AUB) and determine the distinct histopathological patterns among various age groups of women with AUB.

Methods: The present prospective study was done in the Department of Pathology. The period of study was one year. A total of 200 endometrial specimens with a clinical diagnosis of AUB were analysed by histopathological examination in the present study.

Results: Of 200 instances, 116 (58%) were perimenopausal, 64 (32%) were reproductive, and 20 (10%) were postmenopausal. AUB was most common in multiparous women (60%). In 200 AUB patients, 68% were normal weight, 22% overweight, and 7% obese. Most women with AUB had hypertension (35%), diabetes (24%), and thyroid problems (16%). Age-specific analysis. Menorhagia was the most prevalent bleeding pattern in perimenopausal and reproductive age groups ($p = 0.00$). Metrrohagia was the second most prevalent bleeding pattern in reproductive and perimenopausal women. Perimenopausal and postmenopausal women had the highest postmenopausal haemorrhage and were strongly linked. Functional causes of AUB with histological patterns in decreasing order were proliferative, secretory, disorganized, menstrual, and atrophic endometrium in all age groups.

Conclusion: It is essential to conduct endometrial studies on women who are in the perimenopausal and postmenopausal age groups in order to facilitate the early detection of endometrial disease and the treatment of instances with adenouterine bulge (AUB). One of the most common comorbidities related with AUB was obesity, followed by hypertension, diabetes, and hypothyroidism.

Keywords: Abnormal uterine bleeding, Mennorrhagia, Endometrium, Hyperplasia

Introduction

Abnormal uterine bleeding (AUB) is a prevalent and incapacitating illness that affects women of all age groups. Chronic Abnormal Uterine Bleeding (AUB) is characterized by irregular, excessive, or untimely bleeding from the uterus that has persisted for most of the last 6 months. [1] In India, the illness has a documented prevalence incidence of 17.9%. [2] According to the Federation of Gynaecology and Obstetrics categorization, uterine bleeding may arise from several benign and malignant disorders including endometrial hyperplasia, endometrial polyps, adenomyosis, leiomyoma, and malignancy. [1] 50% of instances of AUB are not linked to a biological cause and are referred to be dysfunctional uterine bleeding. [3]

Until now, endometrial biopsy or curettage has been the primary diagnostic procedure for various endometrial abnormalities. This invasive surgery necessitates hospitalization and exposes the patient to risks such as anaesthesia, surgical trauma, and acquired infections. [4] Therefore, it is not appropriate for widespread screening of patients for endometrial cancer. [5] Over the last ten years, endometrial aspiration cytology (EAC) has become a favourable option instead of biopsy for early detection of endometrial abnormalities. It is a quick and noninvasive technique that may be performed in

an outpatient department without the need for anaesthesia. [6] Adenomyosis is the primary gynaecological issue accounting for up to one-third of all outpatient gynaecological appointments. The condition might manifest as heavy menstrual bleeding (HMB), frequent periods, irregular cycles, post-coital bleeding, or post-menopausal bleeding (PMB). It affects females throughout all age groups from youth to menopause. It indicates the root cause, such as a hormone imbalance or cancer, which may need intensive therapy. Alcohol use behaviour has a notable impact on the quality of life of women. [7] Abnormal uterine bleeding (AUB) may result from several events disrupting the body's equilibrium, such as hormone imbalances, infections, structural abnormalities, and malignancies. The International Federation of Gynaecology and Obstetrics (FIGO) created a classification in 2011 called PALM-COEIN to categories the causes of Abnormal Uterine Bleeding (AUB) based on potential underlying reasons. PALM accounts for structural characteristics such as polyps, adenomyosis, leiomyoma, and malignancy. COEIN focuses on addressing non-structural reasons such as coagulation abnormalities, ovulatory dysfunction, endometrial causes, iatrogenic causes, and unclassified causes. [8] Endometrial biopsy is used as a diagnostic tool for Abnormal Uterine Bleeding (AUB). It is used as an initial diagnostic test in women over the age of 45 who are experiencing abnormal uterine bleeding. Endometrial biopsy is performed on individuals under 45 years old who have a history of unopposed oestrogen exposure, unsuccessful medical treatment, and ongoing abnormal uterine bleeding. [9] The main objective is to eliminate precursor lesions such as hyperplasia and severe endometrial cancer. [8]

The current research aimed to analyse the histopathological patterns of the endometrium in women with abnormal uterine bleeding (AUB) and identify the varied histopathological patterns in various age groups of women with AUB.

Materials and Methods

This prospective research was conducted in the Department of Pathology, Government Medical College, Purnea, Bihar, India for one year

200 endometrial tissues diagnosed with AUB were analysed by histological investigation in this research. All endometrial biopsies, curettages, and hysterectomy tissues with a history of abnormal uterine bleeding were included in the study for histopathological evaluation. This research excluded women with Abnormal Uterine Bleeding caused by pregnancy. The relevant clinical records were gathered. All patients were analysed for histological characteristics using sections stained with Haematoxylin and Eosin.

The various histomorphological patterns were studied and classified. Statistical analysis was done using SPSS software version.

Results

Table 1: Demographic and clinical data distribution of cases

Parameters	N	%
Age		
Reproductive group (18-40)	116	58
Perimenopausal group (41-50)	64	32
Postmenopausal group (>50)	20	10
Parity		
Nulliparous	12	6
Primiparous	68	34
Multiparous	120	60
BMI		
19-24.9kg/m2(normal weight)	136	68
25 – 29.9kg/m2(overweight)	44	22
>30kg/m2(obese)	14	7
No data	6	3
Co-morbidities		
Hypertension	70	35
Diabetes	48	24
Thyroid dysfunction	32	16
Unknown	44	22

Among 200 instances, 116 (58%) were in the Perimenopausal group, 64 (32%) in the Reproductive age group, and 20 (10%) in the Postmenopausal age group. Most incidences of Abnormal Uterine Bleeding (AUB) occurred in women who had given birth many times (60%). Out

of 200 instances with AUB, 68% were of normal weight, 22% were overweight, and 7% were obese. Most women presenting with abnormal uterine bleeding had a connection to hypertension (35%), with diabetes (24%) and thyroid dysfunction (16%) being the next most common associations.

Table 2: Distribution of bleeding pattern according to age group

Bleeding pattern	18-40 years	41-50 years	>50 years
Menorhagia	55	110	3
Metrrohagia	15	8	2
Menometrrohagia	7	2	0
Postmenopausal bleeding	0	0	0

An age-specific analysis was conducted. Menorrhagia was the predominant bleeding pattern seen in perimenopausal and reproductive age groups and showed a significant association (p = 0.00). Metrorrhagia was the second most prevalent bleeding pattern seen in reproductive and perimenopausal age groups. Postmenopausal bleeding was mostly seen in perimenopausal and postmenopausal age groups and showed a strong association.

Table 3: Age wise and pattern wise distribution of histopathological findings in AUB due to functional and organic causes

	Histopathological pattern	18 - 40 years	41 – 50 years	>50 years	Total (%)
Functional Cause (65%)	Proliferative phaseendometrium	25	45	5	75
	Secretory endometrium	8	14	3	25
	Disordered proliferative endometrium	12	7	1	20
	Menstrual endometrium	2	7	-	9
	Atrophic endometrium	-	-	1	1
	Total	47	73	10	130
	Arias stella reaction	1	-	-	1
	Endometrial polyp	4	17	1	22
Organic Cause (35%)	Hyperplasia withoutatypia	14	20	4	38
	Hyperplasia with atypia	1	4	2	7
	Endometrial carcinoma	-	1	1	2
	Total	20	42	8	70

Endometrial disorders characterized by secretory, menstrual, atrophic, disorganized proliferative, and proliferative endometrium were the functional causes of AUB across all age groups, according to histological patterns.

Discussion

The endometrium, which borders the uterine cavity, is one of the most active tissues in the human body. Shedding of the endometrium leads to the process of regular menstruation.Normal menstruation is the visible result of periodic physiological uterine bleeding caused by the loss of the endometrium, which is influenced by hormones acting predominantly via the hypothalamo-pituitary-ovarian axis. [11] During menstruation, an average blood loss of 35ml is considered normal. Any bleeding that does not meet this criterion is referred to as "abnormal uterine bleeding." [12] Abnormal Uterine Bleeding (AUB) is characterized by irregularities in the amount, frequency, and timing of bleeding, persisting for at least six consecutive months.[13] The most prevalent symptom and significant gynaecological issue that impacts 20% of healthy perimenopausal women. [14]

Among 200 instances, 116 cases (58%) occurred in the Perimenopausal group, 64 cases (32%) in the Reproductive age group, and 20 cases (10%) in the Postmenopausal age group, consistent with the findings of Rajani Vaidya et al [15] and Vijayaraghavan et al. [16] The majority of occurrences of Abnormal Uterine Bleeding (AUB) occurred in women who had given birth several times (60%), a trend consistent with findings from previous research. [17] to 19 Out of 200 instances with AUB, 68% were normal weight, 22% were overweight, and 7% were obese. Most women presenting with abnormal uterine bleeding had hypertension (35%), followed by diabetes (24%) and thyroid problems (16%). An age-specific analysis was conducted. Menorrhagia was the predominant bleeding pattern seen in perimenopausal and reproductive age groups and showed a significant association (p = 0.00). The majority of occurrences occurred in individuals aged 18-40 years. Vijayaraghavan et al16 and Sharma et al. [18] reported similar results.

Metrrohagia was the second most frequent bleeding pattern seen in individuals of reproductive and perimenopausal age. Postmenopausal bleeding was

mostly seen in perimenopausal and postmenopausal age groups and showed a strong association. The functional reasons of abnormal uterine bleeding with histological patterns, in decreasing order across all age groups, were proliferative endometrium, secretory endometrium, disordered proliferative endometrium, menstrual endometrium, and atrophic endometrium. Early diagnosis of this pattern is beneficial in preventing the development of illness from proliferative pattern to hyperplasia and endometrial carcinomas. 0.5% of postmenopausal patients had atrophic endometrium, consistent with the results reported by Vijayaraghavan et al. [16]

Conclusion

The endometrium is susceptible to several medical conditions due to its hormonal sensitivity and continuous changes over the reproductive lifespan. Abnormal uterine bleeding (AUB) is a condition connected to age that requires comprehensive assessment since it may be the only clinical symptom impacting women's quality of life. Studying the endometrium in the perimenopausal and postmenopausal age groups is essential for early detection of endometrial disorders and for managing instances of abnormal uterine bleeding. Obesity, hypertension, diabetes, and hypothyroidism were common comorbidities linked to abnormal uterine bleeding (AUB). Timely assessment of precursor lesions, particularly Disordered Proliferative Endometrium and instances of malignancy, in conjunction with clinical information is crucial for diagnosing Abnormal Uterine Bleeding.

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