

Study of Endometrial Pathology in Perimenopausal and Postmenopausal Women With Abnormal Uterine Bleeding

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Abstract

Introduction:

Abnormal uterine bleeding is the most common presenting symptom in the gynaecology outpatient clinic (AUB). It affects about 20% women of reproductive age, and accounts for almost two thirds of all hysterectomies. However, the perimenopausal and postmenopausal age groups comprised the majority of it. Along with the usual haematological and hormonal testing, an endometrial sample may be used as its first diagnostic step in AUB.

Aims and Objectives:

The study was aimed to detect the frequency of various pathological conditions which can cause AUB in perimenopausal and postmenopausal women and to know the distribution of functional changes as well as malignancy causing AUB.

Material and Methods:

This study involved 628 patients who presented with AUB between January 2022 and December 2022 at King George Hospital, Andhra Medical College, Andhra Pradesh, India. Out of which 156 cases of isolated endometrial lesions diagnosed on histopathology were selected for the final analysis. An analysis between age of presentation and specific endometrial causes was done using percentages, and represented as tables and diagrams wherever necessary.

RESULTS:

The most common age group presenting with AUB was 40–49 years (46.3%). The commonest pattern in these patients was normal cyclical endometrium (60.4%). Other causes identified were benign endometrial polyp (12.82%), endometrial hyperplasias (10.1%) and carcinomas (1.28%).

CONCLUSION:

In perimenopausal women AUB is most commonly dysfunctional in origin with proliferative phase endometrium.

Keywords: Abnormal uterine bleeding, Endometrium

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I. Introduction:

Abnormal uterine bleeding (AUB) is the most common presenting symptom in gynaecological clinics. AUB affects between 9 and 14 percent of women between menarche and menopause¹. Around 17.9 percent of people in India are said to have AUB. AUB takes into account changes in menstruation frequency, flow length, or blood loss. The average menstrual cycle lasts 4.7 days, with a 35ml blood loss on average.² It includes both organic and non-organic causes of uterine bleeding. After excluding medical reasons, endometrial biopsy or curettage is considered a safe and reliable diagnostic method for evaluating abnormal uterine bleeding.³

The underlying condition of the endometrium may be determined by looking at the histological patterns and taking into account the patient's age, menstrual cycle stage, and use of any exogenous hormones. While older individuals are more likely to encounter atrophy and organic lesions, younger patients are more likely to experience uterine haemorrhage related to pregnancy and uterine dysfunction.⁴ A new nomenclature system known by the acronym PALM-COEIN (Polyp; Adenomyosis; Leiomyoma; Malignancy and Hyperplasia; Coagulopathy; Ovulatory Disorders; Endometrial factors; Iatrogenic; and Not classified) was introduced in 2011 by the International Federation of Gynaecology and Obstetrics (FIGO) to standardize the terminologies of AUB.⁴ The PALM-COEIN system is etio-pathogenesis based, with

PALM denoting structural causes and COEIN denoting non-structural causes of AUB. Therefore, the FIGO nomenclature system will enable standardisation and uniformity in carrying out further investigations. While treating a woman with AUB in peri- and post-menopause, the main problem is to alleviate her concerns about potential uterine cancer. Giving hormone treatment without excluding precancerous neoplasia such as suspicious hyperplasia or subclinical endometrial cancer could lead to lethal complications in the women. Therefore, the cornerstone of modern management continues to be an examination of the endometrium using histology and visual means.

II. Aims And Objectives:

The study was aimed to detect the frequency of various pathological conditions which can cause AUB in perimenopausal and postmenopausal women and to know the distribution of functional changes as well as malignancy causing AUB.

III. Methods:

This is a prospective study carried out on patients who presented with AUB from January 2022–December 2022 at the Department of Obstetrics and Gynaecology at King George Hospital in Visakhapatnam, Andhra Pradesh, in conjunction with the Department of Pathology (KGH). Clinical information was used to choose patients. A total of 156 patients, including endometrial samples, were included in the study material. In this study, only patients with isolated endometrial causes of abnormal uterine bleeding were included; leiomyoma, cervical, vaginal pathology, and haemostasis problems were eliminated. To the pathology laboratory, all specimens were transported in 10% formalin, and gross morphology was noted. The tissue fragments were processed by the LIECA automated tissue processor, and paraffin blocks were produced. 4 to 6 micron tissue slices were cut, and they were stained with a haematoxylin and eosin solution. To lessen interobserver bias, two pathologists performed the microscopic examination. Where appropriate, analysis was given in tables and figures and was done in percentage form.

IV. Results

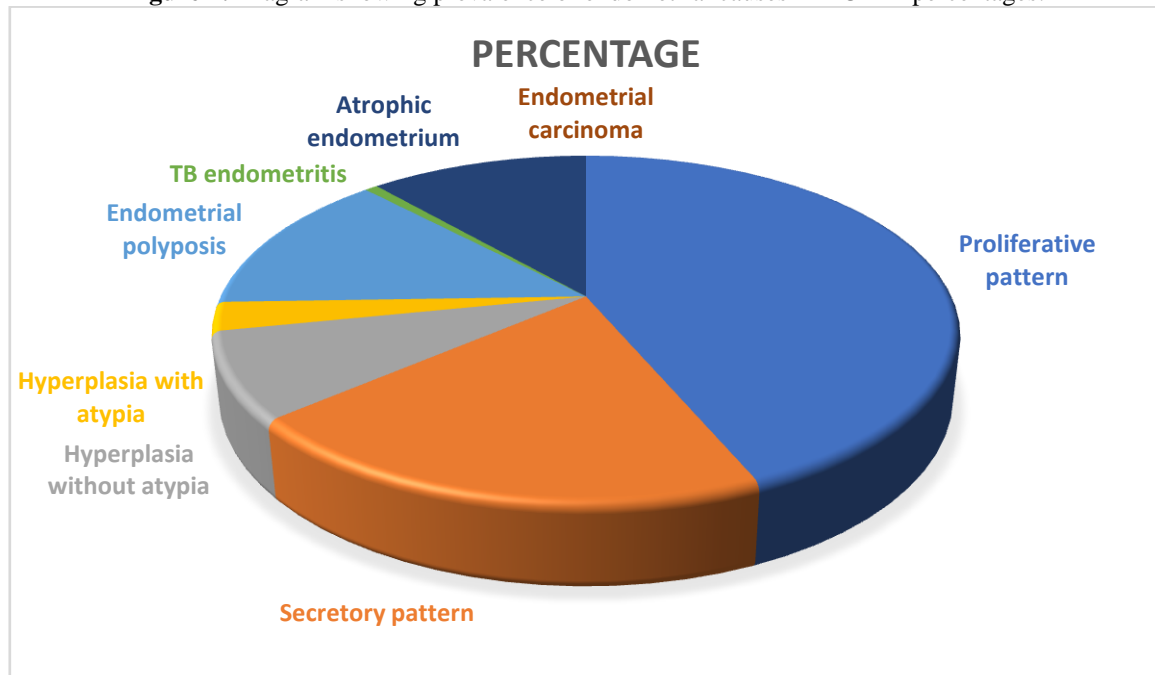
Table 1: Distribution of patients in various age groups:

Age in years	No. of patients	Percentage
40-49	72	46.3%
50-59	64	41.17%
60 and above	20	12.8%

Table 2: Distribution of patients based on endometrial pattern observed.

Pattern	No. of cases	Percentage
Proliferative phase	65	41.6%
Secretory phase	35	19.23%
Hyperplasia without atypia	12	7.7%
Hyperplasia with atypia	4	2.56%
Endometrial polyposis	20	12.82%
TB endometritis	1	0.64%
Endometrial carcinoma	2	1.28%
Atrophic endometrium	17	10.89%

Figure 1: Diagram showing prevalence of endometrial causes in AUB in percentages:



A total of 156 cases were included in this study. The age of patients ranged from 40 to 74 years (Table1). Maximum numbers of patients were in the age group 40 to 49 years (42.52%). Most common bleeding pattern was menorrhagia. Other patterns observed were metrorrhagia, polymenorrhoea and postmenopausal bleeding. Normal cyclical endometrium (60.12%) was the commonest pattern observed. Among this 100 cases of cycling endometrium, 35(19.23%) were secretory (Figure1), 65(41.6%) were proliferative. Diagnosis of cyclical endometrium were correlated with last menstrual period and Ultrasonographic study of abdomen and pelvis.

Table 3 : Histopathological diagnosis according to age group:

Pattern	40-49 yrs	50-59 yrs	60 yrs and above
Proliferative phase	43	19	3
Secretory phase	23	12	0
Hyperplasia without atypia	2	9	1
Hyperplasia with atypia	0	1	3
Endometrial polyposis	2	18	0
TB endometritis	1	0	0
Endometrial carcinoma	0	0	2
Atrophic endometrium	1	5	11

In this study, the incidence of endometrial hyperplasia was lower, occurring in 16 cases (9.9%) only. This would have been likely, given that the majority of the study participants were from lower socioeconomic backgrounds and had less exposure to risk factors such as sedentary lifestyles, increasing animal fat consumption, obesity, and diabetes. The occurrence of benign endometrial polyps in this study was in 20 cases (12.8%). In the present study, the occurrence of carcinoma endometrium in stage 1 was seen in the age group of 60 years and above in patients presenting with AUB for which the patients underwent Wertheim's hysterectomy with pelvic lymph node dissection.

V. Discussion

Any abnormalities in the menstrual cycle, including those regarding frequency, regularity, length, and volume of flow outside of pregnancy, are referred to as abnormal uterine bleeding. A typical menstrual cycle lasts 7-9 days, occurs every 24-38 days, and results in blood loss of 20-80 ml. AUB is defined as variations in any one of these 4 factors. The International Federation of Obstetrics and Gynaecology has created a helpful acronym (PALM-COEIN) to categorise the causes of AUB. Dysfunctional uterine bleeding (DUB) is the most likely diagnosis when an organic cause of AUB cannot be identified. A well-defined organic anomaly is the cause of the abnormal uterine haemorrhage in 25% of individuals.⁵

The routine non-invasive investigations for abnormal uterine bleeding include complete blood count, platelet count, prothrombin time (PT), Activated partial thromboplastin time (APTT) and liver function test to

rule out any coagulation and bleeding disorders. In women of reproductive age group, serum and urine human chorionic gonadotropin (HCG) levels are evaluated to rule out pregnancy. To rule out an endocrine etiology, thyroid function test, follicle stimulating hormone (FSH), luteinizing hormone (LH), prolactin levels are assessed. On ruling out these causes, gynaecologists turn to imaging studies such as pelvic ultrasound (USG), and transvaginal USG and tissue sampling. Dilation and curettage can be a diagnostic as well as therapeutic procedure. The sensitivity of endometrial biopsy for the detection of endometrial abnormalities has been reported to be as high as 96%. Majority of cases in the present study showed normal cyclical patterns of endometrium comprising of proliferative, secretory and atrophic endometrium.

This study shows the commonest age group presenting with excessive bleeding is 40–49 years. And this study like several others showed that proliferative lesions and benign endometrial polyp occur more commonly in the age group 40–49 years⁶. The reason for increased incidence of abnormal uterine bleeding in this age group (40–49 years) may be due to the fact that these patients are in their climacteric period of transition into menopause. As women approach menopause, cycles shorten and often become intermittently anovulatory due to a decline in the number of ovarian follicles and the estradiol level.

The incidence of AUB between 51 and 70 years was lower as compared to those between 41 and 50 years. The reason for this finding may be due to the fact that the patients were evaluated much earlier and treated appropriately thereby decreasing the incidence in later age group. We had only 2 patients with AUB in the age group of above 70 years and both of them had endometrial carcinomas. The result of this study was almost similar to data mentioned by Shukla *et al.*, Bolde *et al.*, Shah *et al.*, and Doraiswami *et al.* in their study^{10,11,12,13}.

Table 4: Table showing comparison of the current study with other studies:

Study	Most common age group	Most common cause	Least common cause
Shukla <i>et al.</i>	41-50	Proliferative phase	Malignancy
Bolde <i>et al.</i>	40-49	Proliferative phase	Malignancy
Shah <i>et al.</i>	41-50	Proliferative phase	Malignancy
Doraiswami <i>et al.</i>	41-50	Proliferative phase	Malignancy
Current study	40-49	Proliferative phase	Malignancy

Atrophic endometrium was seen predominantly in the 50–59 years age group. The incidence is slightly lower, when compared with results shown by Gredmark *et al.*⁷. The exact cause of bleeding from the atrophic endometrium is not known. It is postulated to be due to anatomic vascular variations or local abnormal haemostatic mechanisms. Thinwalled veins, superficial to the expanding cystic glands make the vessel vulnerable to injury.

In the present study incidence of carcinoma endometrium was more common in the 60 years and above age group. The result of this study was almost similar to data mentioned by Yusuf *et al.* and Escoffery *et al.* in their study⁸. A study done by Dangal *et al.* in Nepal documented a lower incidence of endometrial cancer in Nepalese woman attributing it to the practice of early childbearing and multiparty⁹. Possibly, the same factors contributed to a lower incidence of carcinoma in our patients.

VI. Conclusion

Endometrial causes of AUB are age related pathology. In our study, the most common age group presenting with AUB was 40–49 years who presented with endometrium in proliferative phase. The functional causes of AUB were more common in the younger patients. Overall, the chances of malignancy increase with advancing age.

Histopathological examination of endometrium is gold standard diagnostic tool in evaluation of abnormal uterine bleeding and a specific diagnosis helps us to plan & individualise therapy for successful, resourceful management of abnormal uterine bleeding, where hysterectomy should only be considered as last resort.

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